

IBM CICS Performance Analyzer for z/OS



# User's Guide

*Version 5 Release 2*



IBM CICS Performance Analyzer for z/OS



# User's Guide

*Version 5 Release 2*

**Note**

Before using this information and the product it supports, read the information in “Notices” on page 803.

This edition applies to Version 5 Release 2 of IBM CICS Performance Analyzer for z/OS (product number 5655-Y23) and to all subsequent releases and modifications until otherwise indicated in new editions.

This edition replaces SC34-2815-01. The technical changes for this edition are summarized under “Summary of changes” on page xiii and are indicated by a vertical bar in the left margin.

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## About this book

CICS® Performance Analyzer for z/OS® is a reporting tool for analyzing and tuning the performance of CICS systems.

These topics provide instructions for installing, configuring, and using IBM® CICS Performance Analyzer for z/OS Version 5 Release 2. They describe the purpose, concepts, and operation of CICS Performance Analyzer and how to get started. They describe the reports and extracts and how to generate them using the CICS PA dialog or commands. There are examples and Guided Tours to help you become familiar with the dialog. Problem determination procedures and error messages are also included.

In these topics, CICS Performance Analyzer for z/OS is referred to by its short name of CICS Performance Analyzer or CICS PA, and CICS Transaction Server is referred to as CICS.

The following releases of CICS are supported:

- 640** CICS Transaction Server for z/OS Version 3 Release 1
- 650** CICS Transaction Server for z/OS Version 3 Release 2
- 660** CICS Transaction Server for z/OS Version 4 Release 1
- 670** CICS Transaction Server for z/OS Version 4 Release 2
- 680** CICS Transaction Server for z/OS Version 5 Release 1
- 690** CICS Transaction Server for z/OS Version 5 Release 2

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## Who should read this book

This book is intended for managers, database administrators, system programmers, and application programmers responsible for monitoring and improving the performance of CICS systems. It assumes that you understand basic CICS concepts and your installation's CICS systems. If you are new to MVS™, z/OS, DFSORT, or CICS, you might want to review the information in the Bibliography before using this book and the CICS Performance Analyzer for z/OS.

Before you read this book, you need to have a good understanding of how CICS works. This assumes familiarity with many of the books in the CICS Transaction Server for z/OS library. You will also need to have a good understanding of the CICS Monitoring Facility (CMF), which is described in the *CICS Performance Guide*.

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## Conventions used in this book

This book uses the following conventions.

### Highlighting conventions

This book uses the following highlighting conventions:

- **Boldface type** indicates dialog commands or user interface controls such as names of fields or menu choices.
- **Monospace type** indicates examples of text and batch commands that you enter exactly as shown.
- *Italic type* indicates variables that you should replace with a value. It is also used to indicate book titles and to emphasize significant words.

## Command syntax notational conventions

The notational conventions used in this book to describe the syntax of CICS PA batch commands are as follows:

### Use of symbols

The levels of nesting in the syntax are separated by parentheses. When you enter the commands, enter the following symbols exactly as they appear in the list:

,	comma
-	hyphen
=	equals
.	period
:	colon
( )	parentheses

The following symbols are used to distinguish operands and command syntax. Do *not* enter them when you enter commands:

#### brackets [ ]

mean that you *can* select one of the operands, but they can be omitted. If the brackets are nested, the outermost operand (enclosed by one pair of brackets) is the highest level of nesting. That operand must be selected to select the next lower-level operand nested within it, and so forth.

#### underscore \_\_\_\_\_

denotes a default option. If you don't specify an operand, this is the operand the system selects.

#### vertical bar |

separates operand alternatives within brackets.

### Use of case

Uppercase letters represent information that you must enter as shown. Some operands can be abbreviated. The letters that must be used are in uppercase. The subsequent letters in lowercase can be omitted. For example, you can enter the operand CROSSsystem either as a full word or abbreviated. The uppercase letters CROSS are the shortest truncation that CICS PA accepts.

Lowercase letters represent variable information that you supply, such as start time, owner, delimiter, DDname, and so on. For example, OUTPUT(ddname) shows that the OUTPUT operand requires a DDname parameter.

## \$ (the dollar symbol)

In the character sets given in this book, the dollar symbol (\$) is used as a national currency symbol and is assumed to be assigned the EBCDIC code point X'5B'. In some countries a different currency symbol, for example the pound symbol (£), or the yen symbol (¥), is assigned the same EBCDIC code point. In these countries, the appropriate currency symbol should be used instead of the dollar symbol.

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## Terminology used in this book

In this book, CICS Performance Analyzer for z/OS is referred to by its short name of CICS Performance Analyzer or the abbreviation CICS PA, and CICS Transaction Server for z/OS is referred to as CICS TS.

CICS PA can produce various types of output, including reports (text or numeric data formatted for human readers), graphs (also for human readers), and extracts (data intended for use by other software applications). These outputs are often referred to collectively as “reports”.

Much of the terminology in this book is CICS terminology. For explanations of these terms, see the glossary of the *CICS Transaction Server for z/OS Information Center*.

The following Web site consolidates in one convenient location several of the main glossaries created for IBM products, including the *Glossary of Computing Terms*:

<http://www.ibm.com/ibm/terminology/>

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## Service updates and support information

To find service updates and support information, including software FixPaks, PTFs, Frequently Asked Question (FAQs), technical notes, troubleshooting information, and downloads, see the following Web page: [www.ibm.com/cics/support](http://www.ibm.com/cics/support)

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## Where to find information

The IBM Publications Center page provides current product documentation that you can view, print, and download. To locate publications with the most up-to-date information, see the following Web page: <http://www-05.ibm.com/e-business/linkweb/publications/servlet/pbi.wss?CTY=GB&null&>

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## Accessibility

Accessibility features help a user who has a physical disability, such as restricted mobility or limited vision, to use software products successfully.

You can perform most tasks required to set up, run, and maintain your CICS system in one of these ways:

- using a 3270 emulator logged on to CICS
- using a 3270 emulator logged on to TSO
- using a 3270 emulator as an MVS system console

IBM Personal Communications provides 3270 emulation with accessibility features for people with disabilities. You can use this product to provide the accessibility features you need in your CICS system.



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## Summary of changes

Significant changes in this edition are summarized here, and marked by a vertical bar in the left margin.

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### **June 2014: CICS PA V5.2**

CICS Performance Analyzer for z/OS, V5.2 includes the following features and changes:

#### **Support for CICS Transaction Server V5.2**

CICS PA supports SMF 110 records created by CICS TS V5.2.

#### **Batch Reporting for CICS TS and CICS TG Statistics**

Fully customizable batch reporting of CICS TS and CICS TG Statistics, allowing you to select the desired fields and order of the fields in List type reports.

#### **Support for performance alerts in the List HDB**

Support creation of a List HDB with associated performance alerts loaded into separate containers, allowing analysis of the alerts using the CICS PA plug-in and standard List HDB reports, as well as DB2®.

#### **New Summary report tiered format**

Provides a new tiered report that summarizes activity based on two level keys. The tiered Summary report format allows the specification of primary and secondary summary keys. The sample form MPAPPSUM contains the layout for a tiered Platform - Application Summary report.

#### **Include or exclude resources or APPLIDs in statistics alerts**

This option allows additional flexibility in the selection of records of statistics alerts.

#### **New sample JCL members and sample report forms**

- New sample JCL members in SCPASAMP library: CPASTLST (runs the Statistics List report) and CPATRSUM (runs the tiered Performance Summary reports).
- New sample report forms for platform SUMMARY reports: MPAPPSUM (Platform - Application Summary); MPMISC1 (Response/CPU Summary); MPMISC2 (Misc Requests Summary); MPTDRQ (TD Request Summary); MPTSRQ (TS Request Summary)
- Updated sample statistics alert CTSSAMPL

#### **New and enhanced CICS PA plug-in templates**

Existing Summary templates are updated to include additional performance fields and a new template EXPLOR52 is introduced. List type templates are now supported. These are named EXPLSTxx.

#### **New Form field TRANSTAT**

Support for TRANFLAG byte 5 Transaction Status information.

#### **CICS TG Statistics Usage and Capacity report enhancements**

Improved layout and additional content.

#### **ISPF dialog changes**

- The option to define statistics alerts, which was option 5 on the CICS Statistics Reporting Menu, is now option 5 on the Resource Definitions Menu.
- The Performance Graph Reports (Transaction Rate and Transaction Response Time) are removed from the dialog. The report syntax is still supported by the command processor so existing reporting jobs will still work.
- The FIND command has been introduced in the Statistics Report dialog.

CICS PA V5.2 includes all new features that were introduced in CICS PA V5.1 through service updates. For details, see “Previous changes.”

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## Previous changes

This section outlines what was new and changed in previous editions.

### June 2013: updates to V5.1

APAR PM84724 includes the following features and changes:

#### Service unit (SU) support

You can specify a conversion factor to convert transaction CPU time to a service unit value. This allows comparison of workloads on different processors in terms of service units.

#### New CICS Transaction Gateway Statistics batch reports

Configuration Summary  
Client Workload report  
CICS Workload report

#### New CICS PA-specific derived percentage fields

New Summary fields provide transaction specialty processor utilization as a percentage of CPU consumption.

#### New sample report forms

New SUMMARY form CPUSPSM1: Transaction CPU Analysis (V5)

#### READ2EOF profile option setting

This setting is now honored by the HDB Load, RUN from Report Form, and Transaction Profiling features.

#### FIND and LOCATE primary commands

These commands are now available in prompt lists of report forms and object lists in Report Sets dialogs.

### December 2012: CICS PA V5.1

CICS Performance Analyzer for z/OS, V5.1 includes the following features and changes:

#### Support for CICS Transaction Server V5.1

CICS PA supports SMF 110 records created by CICS TS V5.1.

#### New CICS PA-specific derived fields

These include new transaction rate summary fields (RATEMIN and RATESEC), CPU time fields, and fields relating to CICS LM locking.

#### Plug-in templates for all supported CICS TS releases

New HDB templates for all supported CICS TS releases are provided for use with the CICS PA plug-in for CICS Explorer®.



**CICS Transaction Gateway Statistics batch reports**

Activity Summary report and Usage and Capacity report

**WebSphere® MQ V7.1 Support**

CICS PA supports SMF 116 records created by WebSphere MQ V7.1.

**Support for CICS Transaction Gateway V8.1 and V9.0**

supports SMF 111 records generated by CICS TG for z/OS V8.1 and V9.0, which are known by CICS PA as CICS TG VRM 810 and 900 respectively.

**Log stream support**

Support for SMF log streams throughout CICS PA, including Report Sets SMF input, Transaction Profiling, Shared System Definitions, HDB Load, and Statistics online reporting.

**Facility for removing data loaded to CICS PA DB2 tables**

The HDB Housekeeping function can now delete expired DB2 data. The HDB definition allows the specification of separate retention periods for DB2 data and HDB container data sets.

**CICS Statistics online reporting - filtering of SMF files**

For SMF files defined in Personal Systems and Shared Systems, only the SMF files that meet the APPLID and Image filter criteria are selected. The remaining filter criteria are applied to limit the statistics intervals. Filter criteria are now automatically applied to option 6.4 Process SMF File.

**New sample report forms**

These can be tailored to help in areas such as Transaction CPU analysis, CICS Lock Delay analysis, MAXTASKS analysis, Storage analysis, CICS TCB Usage and Delays, and URIMAP analysis.

**ISPF dialog enhancements**

- Ability to merge personal and shared system definitions. This allows JCL generation to combine the selected files from both system types without the need to duplicate definitions.
- New option 5 File Selection on the Profile Options Menu allows you to specify preferences for working with personal and shared system definitions and log streams.
- HDB default collection settings for statistics reports.
- You can initialize a new Object List or Resource List using a sample list.
- HDB Register renamed to CICS PA Repository.

CICS PA V5.1 includes all new features that were introduced in CICS PA V3.2 through service updates. For details, see “Previous changes” on page xiv.

## **June 2011: updates to V3.2**

APAR PM30692 includes the following new features and changes:

**Support for CICS Transaction Server for z/OS V4.2**

All CICS PA reports, HDB, and the ISPF dialog support CICS Transaction Server V4.2, which is known by CICS PA as CICS TS Version 670.

**New Transaction Tracking List report and Summary report**

CICS TS V4.2 introduces Previous Hop (PH) data to the CMF record. CICS PA provides a new Transaction Tracking List report and Transaction Tracking Summary report to exploit these fields and the originating transaction data fields that were introduced in CICS TS V3.2.

Two new CICS PA-specific fields are available for use in the new reports. OSLATNCY reports the latency since the start of the originating transaction. PHLATNCY reports the latency between the start times of the current transaction and the previous hop transaction.

#### **Sample Statistics Alert definitions**

Two new sample Alert Definitions, CTSSERVER and CTGSAMPL, are provided for use when defining statistics alerts. The two existing sample Alert Definitions KEYALERT and SAMPLES have been updated and renamed CTSKEY and CTSSAMPL.

#### **New sample Report Forms**

Eleven new sample Report Forms PHCSUM1 to PHPSUM4 are provided to help you analyze transaction flow using the new CMF Previous Hop data.

#### **Run reports directly from a Report Form**

New primary commands RUN and JCL enable you to run reports directly from a Report Form.

#### **Support for generic APPLID in HDB definition**

HDB definition now accepts masking in the APPLID field.

#### **Support for DB2 10 for z/OS**

CICS PA now supports DB2 10 for z/OS.

## **December 2010: CICS PA V3.2**

CICS Performance Analyzer for z/OS, V3.2 includes the following features and changes:

#### **New CICS TS and CICS TG statistics data available through CICS Explorer**

In addition to the current Explorer Summary table, the CICS PA plug-in for CICS Explorer can now source CICS Statistics and Statistics Alerts data. The additional data is made available through the following facilities:

- New fields in the HDB definition: Explorer, a flag to identify HDBs intended for the CICS PA plug-in, and Qualifier, used to associate related HDBs/DB2 tables.
- Use of a report set or the HDB Load dialog to load the required data into the associated HDBs and also to load the HDB updates into their associated DB2 tables.
- The manifest, which is a catalog of HDBs that are associated with a qualifier and for which the Explorer indicator is set.

#### **Capture statistics alerts in HDB**

CICS PA now supports specifying an alert definition in the statistics HDB definition. You select the required Statistics reports to be collected in this HDB. When a CICS TS or CICS TG alert report is activated to collect in this HDB, you can use a new line action called AO (Activate Alert-only collection) to collect only the reports that related to this Alert. "Alert only" reports are only collected if Alert is triggered.

You can collect records that trigger alert conditions in the CICS TS and CICS TG Alert reports, or restrict existing reports to only those records which triggered alert conditions, or you can do both.

#### **Output batch reports as Adobe Portable Document Format (PDF) files**

The new z/OS UNIX utility sysout2pdf converts plain text batch reports generated by CICS Performance Analyzer for z/OS into PDF files. You can write plug-in filters for sysout2pdf to manipulate the report contents,

highlight text, or add PDF navigation features such as bookmarks. You can also use sysout2pdf to e-mail the PDF. See “Using sysout2pdf to output batch reports as PDF” on page 373.

**New publication: CICS PA *Getting Started Guide*, SC34-2945-00**

This is intended to help new users to understand the main CICS PA concepts and to become productive with the ISPF dialog interface and generating CICS PA reports.

**Support for CICS Transaction Gateway V8.0**

CICS PA supports SMF 111 records generated by CICS TG for z/OS V8.0, which is known by CICS PA as CICS TG VRM 800.

**Dropping support for CICS Transaction Server V2.2 and V2.3**

CICS PA has dropped support for SMF records created by CICS TS V2.2 and V2.3. CICS PA V3.2 supports CICS TS V3.1 and later. Historical data from CICS TS V2.2 systems is still supported.

CICS PA V3.2 includes all new features that were introduced in CICS PA V3.1 through service updates.

## **April 2010: updates to V3.1 for Performance Alerts**

APAR PM04580 introduces Performance Alerts in CICS Performance Analyzer for z/OS V3.1, and includes the following new features and changes:

**Performance Alerts**

Allow you to compare CICS transaction performance against user-defined levels of acceptable performance. A Performance Alert Definition specifies a list of CICS resources to be monitored or managed, together with thresholds that benchmark expected levels of performance. The reports apply to CMF data only. You can report Performance Alerts in various ways, including By Transaction and By Transaction Summary.

**New Resource Definitions menu (Primary menu option 9)**

The Resource Definitions menu includes the Resource Lists and Application Grouping options and the new Performance Alerts option.

**Copy alert definitions**

You can now copy definitions of Statistics Alerts and Performance Alerts to the same or another repository.

**Report Forms**

Report Forms have been enhanced to enable Performance Alert reporting while utilizing the flexibility of Forms. List and Summary Report Forms now allow the SEV function for alert reporting fields. Existing List Forms will be automatically upgraded next time you edit them to include the new Fn (Function) column required for the new alert SEV function. In addition, the Summary Report Form supports the new ALERT field name.

**Report Sets**

Performance List and Summary report and extract specifications have been enhanced to include predefined Performance Alerts to work together with, or instead of, Report Forms.

Also, you can request an interval-based Performance Summary report or extract to add or override the Form summary key fields without altering the underlying Report Form.

### **New sample JCL members in SCPASAMP library**

The sample jobs CPAPALST, CPAPASUM, CPAPAXTL, and CPAPAXTS are provided to request a List or Summary report or extract using predefined Performance Alerts.

## **October 2009: updates to V3.1**

Contains updates for the following new feature introduced by APAR PK95922:

### **Extract CICS statistics to CSV files directly from SMF files**

You can now extract CICS statistics to comma-separated value (CSV) files directly from SMF files. These files can be imported into PC spreadsheet or database tools for further processing.

In the Report Sets panel, select the new Statistics option from the Extracts category. The subsequent Statistics Extract panels generate JCL containing the new CICSPA command operand EXTRACTSTATISTICS. For details, see “Statistics extract” on page 274

The Export Extract for performance data has been renamed to Performance Data Extract (or simply Performance Extract). Similarly, Export in the Extracts category of a Report Set has been renamed to Performance. The CICSPA command operand EXPORT is still supported but is deprecated in favor of the new synonym EXTRACTPERFORMANCE.

## **August 2009: updates to V3.1**

Contains updates for fixes and new features introduced by APAR PK90007:

### **New Distributed Program Link (DPL) Usage Summary and List reports**

CICS TS V4.1 introduces new transaction resource class data fields for distributed program links (DPLs). CICS PA provides new DPL Usage Summary and List reports for these fields. For details, see “Transaction Resource Usage reports” on page 211.

### **Transaction Resource Usage List report: now includes originating transactions**

If the APPLID or the task number of a transaction, or both, do not match its originating transaction, then the Task Identification section of the Transaction Resource Usage List report contains a second line that describes the originating transaction. For details, see the *Report Reference*.

### **Record Selection extract: support for identity class data**

CICS TS V4.1 introduces a new monitoring identity class data record (SMF 110 subtype 1, class 6). You can now use CICS PA to extract these records from an SMF file, optionally compress them, and then save them to another file for future processing.

### **Cross-System Work Extended report: support for unit-of-work post-processing Performance Selection Criteria**

The LISTX operand of the CICSPA batch command now supports the SELUOW suboperand. This means that you can now select the units of work that you want to include in a Cross-System Work Extended report.

### **RECCOUNT field: now available in Performance Selection Criteria**

You can now use the field RECCOUNT (CICS field ID: PERRECNT DFHCICS A131) in Performance Selection Criteria. You can also now use RECCOUNT as a sort field in the List Extended report.

### **Documentation update: suppressing default fields in the Performance Summary**

“Customizing or suppressing default fields” on page 432 clarifies why, in

some situations, a Performance Summary report or extract contains fields that you have not specified in the FIELDS operand.

**Documentation update: how CICS PA calculates peak percentiles**

The description of the item **nn** in “SUMMARY(FIELDS” on page 428 clarifies how CICS PA calculates peak percentiles, and why these values are accurate only if your data is normally distributed.

## **May 2009: CICS PA V3.1**

CICS Performance Analyzer for z/OS V3.1 includes the following features and changes:

**Statistics alert reporting**

Statistics alert reporting enables you to define conditions, in terms of CICS TS statistics or CICS TG statistics field values, that interest you. You can then use those conditions to report on statistics stored in SMF files or HDBs.

**Support for CICS Transaction Server for z/OS V4.1**

All CICS PA reports, HDB, and the ISPF dialog support CICS Transaction Server V4.1, which is known by CICS PA as CICS TS Version 660.

**Support for CICS Transaction Gateway V7.2**

CICS PA support for CICS Transaction Gateway statistics (SMF type 111 records) has been enhanced to support CICS Transaction Gateway V7.2.

**Dropping support for CICS TS V1.3 and V2.1**

CICS PA has dropped support for SMF records created by CICS TS V1.3 and V2.1. CICS PA V3.1 supports CICS TS V2.2 and later.

**CICS PA plug-in: documentation, sample report forms, and DB2 view definition**

To create comma-separated value (CSV) files for use with the CICS PA plug-in for the CICS Explorer, use the sample summary report form EXPLORE3 (for CICS TS V3) or EXPLORE4 (for CICS TS V4).

To create a DB2 view for use with the CICS PA plug-in, use member CPAXPLRV of the CICS PA sample library (SCPASAMP).

**Repository data set name on Control Data Sets panel**

You can now specify the Repository data set name on the CICS PA Control Data Sets panel (CICS PA dialog option 0.3).

**z/OS V1.10 users: apply fix for DFSORT APAR PK80962**

Without this fix, DFSORT can produce system abend SA78-10 in CICS PA.

**Terminology: “shared object lists” now “resource lists”**

Shared object lists, previously also known as “HDB object lists”, are now known as *resource lists*. Personal object lists remain as object lists. For a comparison, see “Object Lists versus Resource Lists” on page 327.



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## Part 1. Introduction

These topics introduce you to CICS Performance Analyzer for z/OS, its main concepts and components, and how to install it.





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## Chapter 1. Overview

This chapter provides a brief introduction to CICS PA. It describes the reports and extracts that you can request and the types of data they process. It also describes the historical database facility.

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### What is CICS PA?

CICS Performance Analyzer for z/OS (CICS PA) is a reporting tool that provides information on the performance of your CICS systems and applications, and helps you tune, manage, and plan your CICS systems effectively. CICS PA also provides a historical database facility to help you manage CICS statistics and performance data for your CICS transactions.

CICS PA is not an online monitoring tool. It produces reports and extracts using data normally collected by your system in MVS System Management Facilities (SMF) data sets and log streams:

- CICS Monitoring Facility (CMF) performance class, exception class, and transaction resource class data in SMF 110 records
- CICS statistics and server statistics data in SMF 110 records
- CICS Transaction Gateway statistics data in SMF 111 records
- DB2 accounting data in SMF 101 records
- WebSphere MQ accounting data in SMF 116 records
- System Logger data in SMF 88 records
- IBM Tivoli® OMEGAMON® XE for CICS on z/OS (OMEGAMON XE for CICS) data in SMF 112 records, containing transaction data for Adabas, CA-Datcom, CA-IDMS, and Supra database management systems

It is designed to complement the CICS-supplied utilities and sample programs such as DFH\$MOLS, DFHSTUP, and DFH0STAT.

CICS PA can help:

- System Programmers to track overall CICS system performance and evaluate the results of their system tuning efforts
- Application Programmers to analyze the performance of their applications and the resources they use
- Database Administrators to analyze the usage and performance of database systems such as IMS™ and DB2
- MQ Administrators to analyze the usage and performance of their WebSphere MQ messaging systems
- Managers to ensure transactions are meeting their required Service Levels and measure trends to help plan future requirements and strategies

CICS PA reports all aspects of CICS system activity and resource usage, including:

- Transaction response time
- CICS system resource usage
- Cross-system performance, including multi-region operation (MRO) and advanced program-to-program communication (APPC)
- CICS Business Transaction Services (BTS)

- CICS Web support
- External subsystems, including DB2, IMS, and WebSphere MQ
- CICS transaction usage of database management systems that are monitored by OMEGAMON XE for CICS: Adabas, CA-Datcom, CA-IDMS, and Supra
- System Logger performance
- Exception events that cause performance degradation
- Transaction file and temporary storage usage

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## Data input

The primary data source for CICS PA is the data collected by the CICS Monitoring Facility.

### CMF data (SMF type 110)

CMF data is written to the MVS System Management Facilities (SMF) data set as SMF type 110 records, subtype 1. Subsequently the data can be made available offline for analysis by CICS PA.

There are three types, or “classes”, of CMF data analyzed by CICS PA:

#### CMF Performance class data

Detailed transaction-level information, such as the processor and elapsed time for a transaction, or the time spent waiting for I/O.

#### CMF Exception class data

Information about exceptional conditions suffered by a transaction, such as queuing for file strings, or waiting for temporary storage. This data highlights possible problems in system operation.

#### CMF Transaction resource class data

Additional transaction-level information about individual resources accessed by a transaction. Currently, the transaction resource class covers file and temporary storage resources only.

To understand the function of CICS PA and to interpret the reports and extracts properly, some knowledge of the CMF data records and their relationship to one another is necessary. For a complete description of CMF data fields and to understand how the fields are collected, see the *CICS Performance Guide*.

**Note:** Take care when using the information in this section to analyze monitoring data that is appropriate to your release of CICS. You can use Table 17 on page 759 to determine in which CICS release particular monitoring fields are available.

Another major data source for CICS PA is:

#### CICS statistics and server statistics data

SMF type 110 records, subtypes 2, 3, 4, and 5.

#### CICS Transaction Gateway statistics

SMF type 111 records.

### Other data sources

CICS PA also analyzes the following types of data:

#### DB2 accounting data

SMF type 101 records written by DB2 on behalf of CICS attached tasks.

**WebSphere MQ accounting data**

SMF type 116 records written by WebSphere MQ on behalf of CICS attached tasks.

**System Logger data**

SMF type 88 records written by the MVS System Logger on behalf of CICS Transaction Server journaling.

**OMEGAMON XE for CICS data**

SMF type 112 records written by OMEGAMON XE for CICS to log CICS transaction usage by the database management systems Adabas, CA-Datcom, CA-IDMS, and Supra.

The **CICS PA Historical Database** is a repository for CMF performance class data, CICS statistics and server statistics data, and CICS Transaction Gateway statistics data.

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## CICS PA reports and extracts

CICS PA provides an ISPF menu-driven dialog to help you request and submit your reports and extracts. The available reports and extracts are grouped by category.

A brief description of the report categories and the reports and extracts follows. For a detailed discussion, see Chapter 8, “Report Sets,” on page 143.

### Performance reports

The Performance reports are produced from CMF performance class data.

**Performance List**

Lists in detail the CMF performance class data.

See “Performance List report” on page 170.

**Performance List Extended**

Sorts and lists in detail the CMF performance class data.

See “Performance List Extended report” on page 178.

**Performance Summary**

Summarizes the CMF performance class data.

See “Performance Summary report” on page 179.

**Performance Totals**

Provides totals and averages of the CMF performance class data.

See “Performance Totals report” on page 182.

**Wait Analysis**

Summarizes transaction activity by wait time. For each Transaction ID, the resources that cause this transaction to be suspended are shown in the order of most to least expensive. This report highlights the system resource bottlenecks that might be causing bad response time. More detailed analysis can then be performed, focusing on the problem resources identified.

See “Wait Analysis report” on page 183.

**Transaction Profiling**

Compares two sets of CMF performance class data.

See “Transaction Profiling report” on page 185.

#### **Cross-System Work**

A detailed listing of segments of work performed by the same or different CICS systems via transaction routing, function shipping, or distributed transaction processing on behalf of a single network unit-of-work id.

See “Cross-System Work report” on page 196.

The format can be tailored to produce the Cross-System Work Extended report (see Figure 202 on page 426).

#### **Transaction Group**

A detailed listing of segments of work performed by the same or different CICS systems on behalf of a single transaction group id.

See “Transaction Group report” on page 199.

#### **BTS (CICS Business Transaction Services)**

A detailed listing of the segments of work performed by the same or different CICS systems on behalf of a single CICS Business Transaction Services (BTS) process.

See “BTS report” on page 200.

#### **Workload Activity**

Provides a transaction response time analysis by MVS Workload Manager (WLM) service and report class. This can be used in conjunction with the z/OS Resource Measurement Facility (RMF™) workload activity reports to understand from a CICS perspective how well your CICS transactions are meeting their response time goals. The Workload Activity List report is a cross-system report that correlates CMF performance class data from single or multiple CICS systems for each network unit-of-work. The Workload Activity Summary report summarizes response time by WLM service and report classes.

See “Workload Activity report” on page 201.

#### **Transaction Tracking List**

Provides performance data for groups of related transactions. This allows monitoring and measurement of transaction performance from the perspective of transaction flow. The report shows how a process flowed from one transaction or system to the next and back again. The report combines CMF records for each originating transaction and its subordinate (group) transactions.

See “Transaction Tracking List report” on page 204.

#### **Transaction Tracking Summary**

Provides performance data for groups of related transactions. The report combines CMF records for each originating transaction and its subordinate (group) transactions. The summarized data is presented on a single line for each grouped Originating transaction.

See “Transaction Tracking Summary report” on page 205.

## **Exception reports**

The Exception reports are produced from CMF exception class data.

#### **Exception List**

Lists in detail the CMF exception class data.

See “Exception List report” on page 208.

### Exception Summary

Summarizes the CMF exception class data.

See “Exception Summary report” on page 210.

## Transaction Resource Usage reports

The Transaction Resource Usage reports are produced from CMF performance class and transaction resource class data. The reports in this category are:

### File Usage Summary

Provides two summaries of file usage:

- The Transaction File Usage Summary report summarizes File usage by Transaction ID. For each Transaction ID, it gives Transaction and File statistics followed by a breakdown of File usage for each File used.
- The File Usage Summary report summarizes File activity. For each File, it gives a breakdown of File usage by Transaction ID.

See “File Usage Summary report” on page 211.

### Temporary Storage Usage Summary

Provides two summaries of temporary storage usage:

- The Transaction Temporary Storage Usage Summary report summarizes Temporary Storage usage by Transaction ID. For each Transaction ID, it gives Transaction and Temporary Storage statistics followed by a breakdown of Temporary Storage usage for each Temporary Storage Queue used.
- The Temporary Storage Usage Summary report summarizes Temporary Storage activity. For each Temporary Storage Queue, it gives a breakdown of Temporary Storage usage by Transaction ID.

See “Temporary Storage Usage Summary report” on page 214.

### DPL Usage Summary

Provides two summaries of distributed program link (DPL) usage:

- The Transaction DPL Usage Summary report summarizes DPL usage by Transaction ID. For each Transaction ID, it gives Transaction and DPL statistics followed by a breakdown for each DPL used.
- The DPL Usage Summary report summarizes DPL activity. For each DPL, it gives a breakdown of DPL usage by Transaction ID.

See “Distributed Program Link Usage Summary report” on page 217.

### Transaction Resource Usage List

Provides a list of all Transaction resource class records in the sequence that they appear in the SMF file. It gives Transaction information, detailing their individual Temporary Storage, File, and DPL usage. This report processes only transaction resource class data, not performance class data.

See “Transaction Resource Usage List report” on page 219.

## Statistics reports

The Statistics reports are produced from CICS statistics data stored in SMF files.

**List** The Statistics List report provides fully customizable batch reporting of CICS TS and CICS TG statistics records.

These reports are arranged in tabular form with records from multiple intervals combined on the same page. Interval identification information

columns including System Interval type and time are displayed before the interval data. This compact format allows easy reading and comparison of multi-interval or system data.

See “Statistics List reports” on page 221.

**Alert** Process CICS Transaction Server and CICS Transaction Gateway statistics records.

See Chapter 14, “Statistics alert reporting,” on page 355.

In addition to producing the batch Statistics Alert reports, you can view statistics using the CICS PA dialog and extract statistics to delimited text files. See Chapter 19, “Using the Statistics reporting dialog,” on page 551 and “Statistics extract” on page 274.

### **CICS Transaction Gateway**

Provide reporting of CICS Transaction Gateway Statistics SMF 111 records.

- The Activity Summary report provides a high-level overview of Gateway daemon address spaces and their workloads.
- The Usage and Capacity report summarizes Gateway daemon resource usage over time.
- The Configuration Summary report provides a snapshot of key configuration values for each active Gateway daemon in your system. You can view and compare configuration changes over time.
- The Client Workload report provides a high-level overview of the application workload broken down by Gateway daemon instance. This report can give insight into application usage patterns over time.
- The CICS Workload report provides an overview of workload between Gateway daemons and their connected CICS regions. This report allows you to identify which CICS regions are most heavily loaded.

See “CICS Transaction Gateway reports” on page 229.

## **Subsystem reports**

The Subsystem reports are produced from database subsystem accounting data stored in SMF files. (Note that the DB2 report also processes CMF performance class data whereas the WebSphere MQ and OMEGAMON reports do not.)

**DB2** Correlates CICS CMF performance class (SMF 110) records and DB2 accounting (SMF 101) records by network unit-of-work to produce a consolidated and detailed view of DB2 usage by your CICS systems. The DB2 report enables you to view CICS and DB2 resource usage statistics together in a single report. The DB2 List report shows detailed information of DB2 activity for each transaction. The DB2 Summary reports summarize DB2 activity by transaction.

See “DB2 report” on page 231.

### **WebSphere MQ**

Processes WebSphere MQ accounting (SMF 116) records to provide comprehensive performance analysis and resource usage for your CICS transactions that use MQ.

The WebSphere MQ List report provides a trace of MQ accounting records, reporting the comprehensive performance contained in subtype 0, 1 and 2 records. The WebSphere MQ Summary report provides two summarized views of your MQ transactions:

- Summary by CICS Transaction ID, showing the MQ system and queue resources use
- Summary by WebSphere MQ Queue name, showing the Transactions they service and resources used

See “WebSphere MQ report” on page 237.

### **OMEGAMON**

Processes OMEGAMON XE for CICS (SMF 112) records to produce a detailed view of how CICS transactions use the following types of database management system (DBMS): Adabas, CA-Datcom, CA-IDMS, and Supra.

For each type of DBMS, you can request up to three reports:

- A List report, showing database usage for each transaction.
- A Transaction Summary report, showing database usage summarized by transaction ID.
- A Database Summary report, showing database usage summarized by database.

The information in each report varies depending on the DBMS, but typically includes elapsed times and counts for each method that is used by transactions to access a database, such as read, write, add, update, and delete.

See “OMEGAMON reports” on page 241.

## **System reports**

The System reports are produced from system data stored in SMF files. Note that the System Logger report does not process CMF performance class data. There is only one report in this category:

### **System Logger report**

Processes System Logger (SMF 88) records to provide information on the System Logger logstreams and coupling facility structures that are used by CICS Transaction Server for logging, recovery and backout operations. The report can assist with measuring the effects of tuning changes and identifying Logstream or Structure performance problems. The System Logger List report shows information on Logstream writes, deletes, and events, as well as Structure Alter events for each SMF recording interval. The System Logger Summary report summarizes Logstream and Structure statistics so you can measure Logger performance over a longer period. These reports help to provide a comprehensive analysis of the logstream activity for all your CICS systems.

See “System Logger report” on page 245.

## **Extracts**

While the other categories produce reports and graphs intended for human readers, the extracts produce data sets intended for use by software applications, including CICS PA itself.

### **Cross-System Work**

This data set is useful for cross-system analysis. CICS PA allows you to merge CMF performance class data from segments of work performed by the same or different CICS systems via transaction routing, function shipping, or distributed transaction processing on behalf of a single network unit-of-work ID. This Cross-System Work data set can be used as input to CICS PA Performance Reports such as the List, Summary, and



Totals reports to monitor the total amount of resources used by a transaction within a single CICS system or across multiple CICS systems.

See “Cross-System Work extract” on page 250.

#### **Performance Data**

This data set contains a selected subset of CMF performance class data, extracted and formatted as a delimited text file. This file can then be imported into a DB2 database or PC spreadsheet application for further reporting and analysis. The extract records have a default format which includes all the clock fields, or the format can be tailored like the Performance List or Performance Summary reports.

See “Performance Data extract” on page 257.

#### **Record Selection**

This data set contains only the SMF record types that are of interest to you. You can extract any combination of the SMF record types supported by CICS PA. The extract file can then be used as input to CICS PA, allowing for more efficient reporting.

See “Record Selection extract” on page 263.

#### **HDB Load**

The HDB Load is a facility that loads SMF data into a Historical Database (HDB). This same facility is available from Primary Menu option 5 Historical Database, where the full set of HDB reporting facilities is available. However, from Report Sets you have the advantages of batch JCL generation and multiple load requests supported in the one job. A Recap report containing processing statistics is always printed at the end of load processing.

See “HDB Load” on page 268.

#### **System Logger**

This data set contains a selected subset of System Logger data, extracted and formatted as a delimited text file. This file can then be imported into a DB2 database or PC spreadsheet application for further reporting and analysis.

See “System Logger extract” on page 271.

#### **Statistics**

This data set contains CICS statistics, extracted and formatted as a delimited text file. This file can then be imported into a DB2 database or PC spreadsheet application for further reporting and analysis. The format of the extract records depends on the CICS statistics ID of the extracted data: each statistics ID defines its own set of fields.

See “Statistics extract” on page 274.

---

## **The CICS PA dialog**

The CICS PA dialog is an ISPF-based menu-driven dialog that helps you create, maintain and submit your report requests. It also helps you to specify your input data and tailor requests specific to your requirements without you having to understand the SMF data.



## CICS PA Primary Option Menu

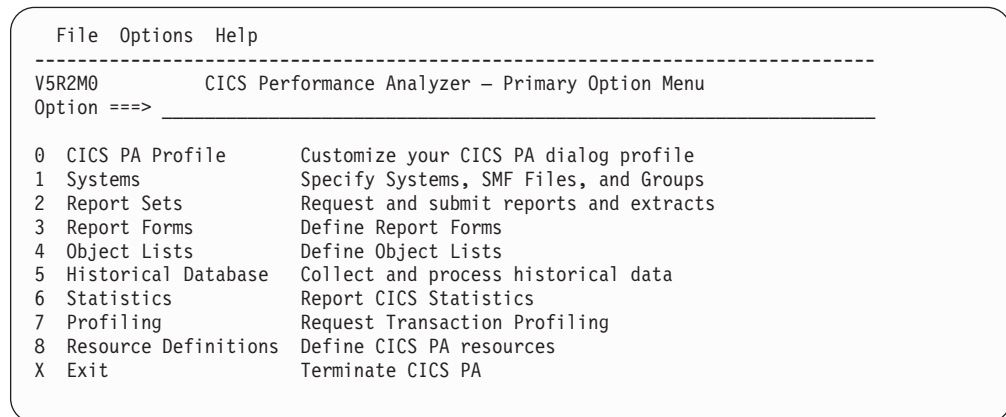


Figure 1. CICS PA Primary Option Menu

The following steps introduce the primary menu options and explain briefly how to use the dialog to start reporting:

1. Define your CICS systems and their SMF files. When your CICS systems are defined, you can start reporting against them. You can automate this process by using the Take-Up facility. CICS PA extracts the relevant information about your CICS systems from your SMF files or log streams. If you define your own CMF user fields, then specify your MCT definition. The user fields can then be incorporated into your CICS PA reports.

Related CICS systems, such as systems that connect via IRC/MRO, ISC/APPC, or IPIC, can be grouped together for reporting purposes. For example, assigning the CICS MRO systems (CICSPTOR, CICSIPAOR, CICSPPFOR, CICSPPDOR) and DB2 subsystem (DB2P) to a Group allows you to report on these systems as a single entity. CICS PA reports can then show a complete end-to-end picture of your MRO transaction activity, incorporating detailed DB2 statistics derived from the DB2 accounting data of subsystem DB2P.

You can use the Systems menu to define both Personal System Definitions and Shared System Definitions. Personal System Definitions are typically maintained in a Personal Profile Library and used by an individual for reporting. Shared System Definitions are typically maintained by a central administrator in the Repository and used by all users.

2. Define Report Sets to build, submit, and save your report requests. A Report Set contains the set of reports and extracts that you want to run in a single job. Simply select the ones you require and submit.

Specify Selection Criteria to filter the input records to report only the information that you are interested in. For example, you can specify Selection Criteria to restrict reporting to:

- A particular date/time range
- A group of related Transaction IDs
- Transaction response times that exceed your thresholds

Run your Report Sets (or individual reports or extracts). The CICS PA dialog builds the JCL and commands to produce the reports and extracts. You can edit these jobs, or you can write your own jobs.

3. Define Report Forms to tailor the format and content of your reports and extracts. A simple to use editor allows you to design your own report by selecting the required CMF fields. Most CMF fields can be selected for

reporting, and detailed explanations of each CMF field are available from the dialog. A comprehensive set of Sample Report Forms is provided to help you tailor your reports and extracts.

4. Define Object Lists to help you specify values for filtering and grouping objects such as transaction IDs and terminals. Object Lists are used when specifying Selection Criteria for reports and extracts.
5. Define and maintain Historical Databases (HDBs) as repositories of performance data. Generate reports against your HDBs or export HDB data to DB2 for further manipulation and analysis.
6. Report on statistics from eligible SMF files or HDBs.
7. Request a Transaction Profiling report (you can also request this in a Report Set, using option 2).
8. Define CICS PA resources, including Resource Lists, Application Groups, Performance Alerts, CPU Service Unit Conversion Factors, Statistics Alerts, and Statistics Forms.

## CICS PA Profile

This facility allows you to customize your CICS PA user profile, which includes:

- CICS PA dialog settings such as the name of your Personal Profile Library (where personal system definitions are stored), your preferred date format, and the job card CICS PA is to use when generating JCL.
- The allocation attributes of data sets that might need to be created during Report Set processing. CICS PA uses these when generating JCL.
- Control data sets: the data sets to use for Report Sets, Report Forms, Object Lists, and the Repository.
- DB2 settings, for exporting data to DB2 tables.
- File Selection options: which system definitions (personal or shared or both) to use at run time, and options for using log streams across CICS PA.

You can bypass this menu option because CICS PA uses defaults and prompts you if and when further information is required.

## System Definitions

Use System Definitions to define:

- CICS systems (including CICS Transaction Gateway systems) and SMF files that you want to report against
- DB2 subsystems and SMF files for the DB2 report and Record Selection extract
- MQ subsystems and SMF files for the WebSphere MQ report and Record Selection extract
- System Loggers and SMF files for the System Logger report and Record Selection extract

You can specify SMF data sets for each system (CICS, DB2, MQ, Logger) or for each MVS system (image) where they run. In addition you can define groups of systems for reporting purposes, such as those systems that connect via IRC/MRO, ISC/APPC, or IPIC.

Your System Definitions are then used in the following ways:

- By specifying the Systems (or Groups) in your Report Sets, CICS PA can determine the related files (and, in the case of shared systems, log streams) to include in Report Set JCL generation.

- By specifying a CICS APPLID when creating Report Forms and HDB Templates, CICS PA can determine the user fields and CICS version. CICS PA can then populate your Report Form or HDB Template with CMF fields appropriate to the release of CICS and user fields for the particular CICS system.
- By specifying a CICS APPLID for the Cross-System Work extract, CICS PA can determine the user fields for the particular CICS system for inclusion in the extract file.
- The SSID of specified DB2 Subsystems provides filtering on SSID for the DB2 report and Record Selection extract.
- The SSID of specified MQ Subsystems provides filtering on SSID for the WebSphere MQ report and Record Selection extract.

For reporting, you can use either Personal System Definitions or Shared System Definitions, or both. If you use both, you can specify the order of precedence if two definitions have the same name: Personal then Shared, or Shared then Personal. Set **Systems** in the action bar to the definitions that you want to use for reporting.

## Personal Systems

Personal System Definitions are maintained using option 1 on the Systems Menu. They are saved in your Personal Profile Library (specified in option 0 CICS PA Profile Settings). Personal definitions are typically maintained and used by an individual for reporting.

The dialog provides a take-up facility to automatically define your personal systems from an SMF file.

## Shared Systems

Shared System Definitions are maintained using option 2 on the Systems Menu. They are saved in the Repository. Shared definitions are typically maintained by a central administrator and used for reporting by all users of that repository.

The dialog provides a take-up facility to automatically define your shared systems from an SMF file or log stream. The dialog provides a second take-up facility to automatically load your personal definitions into the Shared System Definitions.

## Report Sets

A Report Set defines a selection of reports and extracts with their associated options. The CICS PA reports and extracts are listed in “CICS PA reports and extracts” on page 5.

You can define any number of Report Sets and select any number of reports and extracts in a Report Set. The reports in a Report Set are produced as a group from one pass of the input data sets.

A Report Set can be run on a one-off basis, or run repeatedly against different input each time. Changes are made to Report Sets using the CICS PA dialog, and immediately affect the next run of the Report Set.

The data to be analyzed by a Report Set can optionally be restricted by a Start/Stop date and time specified at submit time. This reduces the volume of data to be analyzed as only a subset of the data in the input files is passed to the report processors, thereby increasing the efficiency of the report processing.

## Selection Criteria

Selection Criteria can be specified to provide filtering of the data to be reported or extracted. Selection Criteria are made up of a series of SELECT Statements which specify whether to include or exclude data based on:

- date-time ranges or time slots
- started, stopped, or continuing (active) transactions
- particular field values

You can filter on many fields, and specify value lists, masks or ranges. Object Lists are a convenient way to specify the values and define groups of objects such as transaction IDs and terminals.

## Running Report Sets

The CICS PA dialog generates the JCL for batch report processing. The Report Set (or individual report or extract), and any Report Forms and Object Lists it uses, are converted to a stream of commands for batch execution. Eligible data sets specified in your System Selection are built into the JCL as input to the batch reporting programs.

Enter the **RUN** command to run your Report Set. This prompts you to check or change your run-time options before generating the JCL. Run-time options include System Selection, Report Interval, and whether you want to edit the JCL before submitting the job for batch execution.

Alternatives to the RUN command are JCL and SUB. These do the same as the RUN command except:

- The **JCL** command selects the run-time option Edit JCL before Submit. This allows you to review or modify the JCL before submit, or to save the JCL in an external library for later submission independent of the CICS PA dialog.
- The **SUBMIT** or **SUB** command does not select the run-time option Edit JCL before Submit. It requests that the job be submitted immediately.

## Analyzing the output

View or print your reports using standard facilities such as SDSF or ISPF Outlist Utility.

Process your extract data sets according to their purpose:

- Analyze the Cross-System Work extract data using CICS PA Performance Reports such as the List, Summary, and Totals reports.
- Analyze the Performance Extract, Statistics Extract, or System Logger Extract data using external programs such as DB2 or PC spreadsheet tools.
- Specify the Record Selection extract data sets as your SMF Files in System Definitions to reduce the volume of data processed by CICS PA.

## Report Forms

Report Forms can be used to tailor the format and content of the following reports and extracts:

- Performance List report
- Performance List Extended report
- Performance Summary report
- Transaction Profiling List
- Cross-System Work report
- Transaction Tracking List
- Transaction Tracking Summary

## Performance extract

One Report Form can be used by many reports of compatible type. The Report Form defines the CMF fields to include in the report, the order of the columns, sort sequence (where applicable), and report title. Optionally, your List or Summary Report Form can define which fields are for performance alert reporting. Alternatively, Performance Alert Definitions can be used for reporting together with, or instead of, a Report Form. Note that alerts are not supported in ListX Report Forms.

List and Summary Report Forms can also be used to tailor HDB reports.

You can run reports directly from a Report Form as well as using the Report Form in a Report Set.

## Object Lists and Resource Lists

Object Lists provide a convenient way to specify field values for filtering the CMF data and grouping objects for reporting purposes. For example, to analyze the resource usage of a particular group of transactions.

An Object List defines particular values, masks, or ranges of values which can be used in the Selection Criteria for as many reports and extracts as required. Long lists of field values can be defined once and then reused in Report Sets as often as they are needed.

Resource Lists offer similar benefits for specifying field values in HDB load selection criteria, and Resource field values in Application Grouping and Statistics Alerts. For a comparison of these two types of list, see “Object Lists versus Resource Lists” on page 327.

## Historical Database

Historical Database (HDB) is a facility that allows you to manage performance and statistics data for your CICS transactions. SMF data is saved in HDB container data sets that are managed from the CICS PA dialog.

There are three types of HDB:

### Performance List HDB

A List HDB is built from CMF performance class data. In a List HDB data set, one record represents one transaction. Typically, List HDBs are used to analyze recent transaction events. Data is usually only required for a short period of time. The type of information and level of detail contained in a List HDB is determined by the List Template on which it is based.

### Performance Summary HDB

A Summary HDB is built from CMF performance class data. In a Summary HDB data set, one record represents a summary of transaction activity over a user-specified time interval. Typically, Summary HDBs are used for long-term trend analysis and capacity planning. Data is retained for a longer period of time, sometimes years. The type of information and level of detail contained in a Summary HDB is determined by the Summary Template on which it is based.

### Statistics HDB

A Statistics HDB contains collections of CICS statistics and server statistics and CICS Transaction Gateway statistics over a specified time interval.

You can run reports against your HDB, export the HDB data to DB2 tables, or export the HDB data to extract data sets in CSV format.

## Statistics reporting

CICS PA provides comprehensive reporting and analysis of CICS statistics and server statistics data. It complements the CICS statistics reporting utilities DFHSTUP and DFH0STAT. CICS PA also provides comprehensive reporting and analysis of statistics data from CICS Transaction Gateway. CICS PA can interactively process, report, and extract statistics data directly from SMF files or from an HDB after collection. An advantage of collecting statistics data in an HDB is that you can then export the data to DB2 for further analysis.

Features of the interactive statistics reporting facility include:

- Tabular reporting, sorting by field (column)
- Forms to design personalized reports
- Hyperlinks to jump directly to related reports
- Print facility, either to a data set or to SYSOUT

In addition to interactively reporting statistics, you can also process statistics using the batch Statistics Alert reports, Statistics List reports, and CICS Transaction Gateway reports, and extract statistics to delimited text files.

---

## The CICS PA commands

The CICS PA commands are used to request reports and extracts. The CICS PA dialog automatically generates the commands and JCL when you submit a Report Set. You can edit these jobs or set up your own jobs.

The standard command format for producing reports and extracts is:

Name	Command	Operands	Comments
name in columns 1-8 (or blank)	<b>CICSPA</b>	one or more operands	comments (or blank)

The general format of the command as it appears in the //SYSIN DD statement of the CICS PA batch JCL is:

```
CICSPA operand[(suboperand)][,operand[(suboperand)],]...
```

For a full discussion, see Chapter 17, "Using the CICS PA commands," on page 383.

---

## Chapter 2. Installing CICS PA

This chapter describes the procedure for installing the CICS PA dialog components and migrating from an earlier release of CICS PA. Before installing the dialog, follow the installation instructions in the CICS PA Program Directory.

---

### CICS PA system requirements

Make sure that you have the following hardware, software, and storage requirements in place before installing and running CICS PA.

#### Hardware requirements

If your z/OS operating system and CICS were installed in compliance with their documented minimum hardware requirements, you have only the following additional requirements to consider in installing CICS PA:

- DASD storage required for the CICS PA product. For information on DASD requirements, see the Program Directory that is shipped with CICS PA.
- Optionally:
  - Printer for printing reports and graphs
  - PC for downloading extract data

#### Software requirements

CICS PA requires the following software products:

- z/OS V1.12 or later (contains SMP/E) (5694-A01)
- z/OS V1.12 DFSORT feature or later, or an equivalent sort product

CICS PA can process SMF data produced by the following CICS systems:

- CICS Transaction Server for z/OS V5.1 or later (5655-Y04)
- CICS Transaction Server for z/OS V4.1 or later (5655-S97)
- CICS Transaction Server for z/OS V3.1 or later (5655-M15)

#### Storage requirements

CICS PA runs in a virtual storage region. Region size will vary based on your specific report requirements and the amount of data input.

Typical storage use begins at 2048K, which includes storage for:

- CICS PA programs
- Access methods and buffers
- Report queues (most are located above the 16 MB line)

Installations with large CICS systems might experience greater resource requirements.

Operating system requirements are additional.

---

### CICS PA components

The components of the CICS PA dialog are delivered in the following libraries: where *xxx* identifies the national language, such as **ENU** for U.S. English.



**SCPAEXEC**  
     REXX EXECs  
**SCPALINK**  
     Executable load modules  
**SCPAM<sub>xxx</sub>**  
     ISPF messages  
**SCPAP<sub>xxx</sub>**  
     ISPF panels  
**SCPAS<sub>xxx</sub>**  
     ISPF skeletons  
**SCPAT<sub>xxx</sub>**  
     ISPF input tables

In addition, sample JCL for running batch reports and extracts is supplied in the **SCPASAMP** library. See Chapter 18, “Sample library,” on page 545.

---

## CPAOREXX command

The CICS PA initialization module CPAOREXX accepts four parameters:

**qual**   The data set high level qualifier for CICS PA data sets. For example, CICS<sub>PA</sub>.V5R2M0. Alternatively, specify NODYNAM to tell CICS PA to use the existing allocation settings.

**lang**   Identifies the national language. The default is **ENU** (U.S. English).

**low level qualifiers**

Optional. Overrides the default low level qualifiers for the six CICS PA data sets. All six qualifiers must be specified in the correct order, enclosed in brackets and separated by commas. See “Overriding the data set low level qualifiers” on page 19. For example:

(EXEC, LINKLIB, MSG, PNL, SKL, TBL)

---

## Installing the CICS PA dialog

You can either install the CICS PA libraries statically within your ISPF library setup, or allow them to be set up dynamically when the CICS PA dialog is used. Then you can optionally add CICS PA to an ISPF menu.

Dynamic setup is the simplest and quickest approach.

### Dynamic setup

To enable the CICS PA libraries to be dynamically set up when the CICS PA dialog is invoked, complete the following steps:

1. On the TSO command processor panel, enter:

```
EX 'qual.SCPAEXEC(CPAOREXX)' 'qual lang'
```

For example:

```
EX 'CICSPA.V5R2M0.SCPAEXEC(CPAOREXX)' 'CICSPA.V5R2M0 E'
```

If the high level qualifier for your CICS PA installation data sets is not CICS<sub>PA</sub>.V5R2M0, then alter the command accordingly.

2. To add CICS PA to an ISPF menu, set &ZSEL to:

```
CMD(EX ''qual.SCPAEXEC(CPAOREXX)'' ''qual lang'') NOCHECK
```



NOCHECK is specified to support entry of concatenated commands via the direct option (trail). Also specify on the calling panel:

&ZTRAIL=.TRAIL

**Note:** Dynamic setup requires that the supplied library names are retained. These are listed under “CICS PA components” on page 17.

## Static setup

To install the CICS PA libraries statically within your ISPF library setup, complete the following steps:

1. Include the library *qual.SCPAEXEC* in your SYSEXEC or SYSPROC concatenation. This library contains the required EXECs. It is allocated with fixed-block 80 record format during installation.

You should put these libraries in the SYSEXEC concatenation. However, if you want to put them in SYSPROC, it must have a record length of 80 bytes.

Ensure that all libraries contained in your concatenations are either in the same format (F, FB, V, VB) and have the same block size, or are in order of decreasing block sizes. Otherwise, you might experience problems using the CICS PA panels.

2. Add the remaining libraries to your ISPF library setup:
  - Include the link/load module library *qual.SCPALINK* in the ISPLLIB concatenation.
  - Include the message library *qual.SCPAMxxx* in the ISPMLIB concatenation.
  - Include the panel library *qual.SCPAPxxx* in the ISPLLIB concatenation.
  - Include the skeleton library *qual.SCPASxxx* in the ISPSLIB concatenation.
  - Include the table library *qual.SCPATxxx* in the ISPTLIB concatenation.
3. On the TSO command processor panel, enter:  
`%CPAOREXX 'NODYNAM lang'`
4. To add CICS PA to an ISPF menu, set &ZSEL to:  
`CMD(%CPAOREXX 'NODYNAM lang') NOCHECK`

## Overriding the data set low level qualifiers

The default CICS PA data set low level qualifiers are listed under “CICS PA components” on page 17. You can override these by specifying the required qualifiers as the last parameter in the ISPF menu &ZSEL setting. All six qualifiers must be specified in the correct order, enclosed in brackets and separated by commas. For example:

```
CMD(EX 'qual.SCPAEXEC(CPAOREXX)' 'qual lang (EXEC,LNK,MSG,PNL,SKL,TBL)')
```

CICS PA will then use the following libraries:

*'qual.EXEC'*  
REXX EXECs

*'qual.LNK'*  
Executable load modules

*'qual.MSG'*  
ISPF messages

*'qual.PNL'*  
ISPF panels

'qual.SKL'  
ISPF skeletons  
'qual.TBL'  
ISPF input tables

---

## Migrating from an earlier release

No additional setup is required if migrating from an earlier release of CICS PA. Your System Definitions, Report Sets, Report Forms, Object Lists, and HDBs are upgraded automatically so you can take advantage of the new and changed features in CICS PA V5R2.

### Including a V3.1 Performance HDB in the manifest

In CICS PA V3.2 the manifest was introduced to enhance how performance HDB data is made available for viewing in the CICS PA plug-in for CICS Explorer. HDB and DB2 tables that were set up for the CICS PA plug-in in V3.1 must be changed before they can be included in the manifest and accessed from the CICS PA plug-in.

#### About this task

The manifest is a catalog of DB2 tables for HDBs that are associated with the same qualifier and for which the Explorer indicator is set. To include the Performance HDB in the manifest, you must modify the HDB definition to specify a qualifier and select the Explorer indicator. You must also replace the current Template with one of the internal templates that are designed for use with the CICS PA plug-in. These are named EXPLOR $nn$ .

The process for migrating the DB2 table depends on whether you REPLACE your DB2 table every time you reload it; or RESUME (that is, append) new data to the existing data in the table. The following procedure covers both "REPLACE" and "RESUME" users.

#### Procedure

1. Select the performance HDB from the HDB Maintenance panel and make the following changes:
  - a. Specify a qualifier. This HDB will be included in the manifest for the corresponding qualifier.
  - b. Select the Explorer indicator.
  - c. Replace the current template name with EXPLOR $nn$ , where  $nn$  is the version of CICS TS that you are migrating to.
  - d. Press the Exit key (F3) to save the HDB definition.
2. Update the DB2 table and VIEW as follows:
  - REPLACE users: DROP the existing table and its associated VIEW.  
In the HDB Maintenance panel, enter the T line action next to the performance HDB. This will generate DB2 commands to create the new DB2 table and VIEW. Submit the generated JCL.
  - RESUME users: Rename the existing DB2 table to  $qqqqqqq.CPA\_CMFPSUM$ , where  $qqqqqqq$  is the qualifier specified in the HDB definition.  
In the HDB Maintenance panel, use the T line action next to the performance HDB. This will generate DB2 commands to create the DB2 Table and VIEW. Delete the TABLE CREATE command and change the VIEW DROP

command to DROP VIEW EXPLORER\_SUMMARY. Submit the JCL to DROP and then recreate the VIEW so that it picks up the new table name.



---

## Chapter 3. Setup and getting started

CICS PA provides a menu-driven dialog to request generation of reports and extracts for analyzing and tuning the performance of your CICS Transaction Server systems. CICS Monitoring Facility (CMF) performance class, exception class, and transaction resource class data in MVS System Monitoring Facility (SMF) files provide the input to the CICS PA reports and extracts. In addition, DB2 and MQ accounting, System Logger, and OMEGAMON XE for CICS records in SMF files are analyzed by specific reports.

Facilities are provided to help you to specify your input files, filter the data, and tailor the reports and extracts to suit your requirements.

The dialog requires no special customization or setup. Reporting can commence immediately.

To get started with using CICS PA to analyze the performance of your CICS systems and applications, proceed as follows:

1. Before installing CICS PA, check that the system requirements are met. See “CICS PA system requirements” on page 17.
2. To install CICS PA, follow the instructions in the Program Directory. Then to complete the installation, see “Installing the CICS PA dialog” on page 18.
3. If you are unfamiliar with System Monitoring Facility (SMF) data and how to prepare it for CICS PA reporting, see Chapter 5, “SMF data used by CICS PA,” on page 53.
4. To get started with using the CICS PA dialog to define and run report and extract requests, see “How to use the dialog” on page 24.

By following the topic on 'Defining a Report Set for daily monitoring' in the *CICS Performance Analyzer for z/OS Getting Started Guide* you can quickly get an insight into how to use the dialog.

The Performance Totals report is a useful starting point as it is only a few pages and can provide an immediate indication of which area to look into next. Another good report to try is the Performance Summary report with the data summarized by Transaction ID within APPLID.

5. To understand the JCL generated by the dialog, or set up your own jobs, see Chapter 16, “JCL for reports and extracts,” on page 367.  
Sample jobs for each report and extract are provided in Chapter 18, “Sample library,” on page 545.
6. To understand the CICS PA commands generated by the dialog or to code them directly in your job stream, see Chapter 17, “Using the CICS PA commands,” on page 383. This chapter includes many syntax examples and sample reports.
7. For help analyzing the report and extract output, and interpreting the CMF performance and exception data, see the *CICS Performance Analyzer for z/OS Report Reference*.
8. If results are not as expected, see Chapter 26, “Messages,” on page 709, and Chapter 27, “Problem determination,” on page 751 to help you diagnose and resolve problems.
9. To define and populate a historical database for analyzing performance over time, refer to Chapter 20, “Guided Tour: Performance HDB,” on page 573.

## CICS PA Primary Option Menu

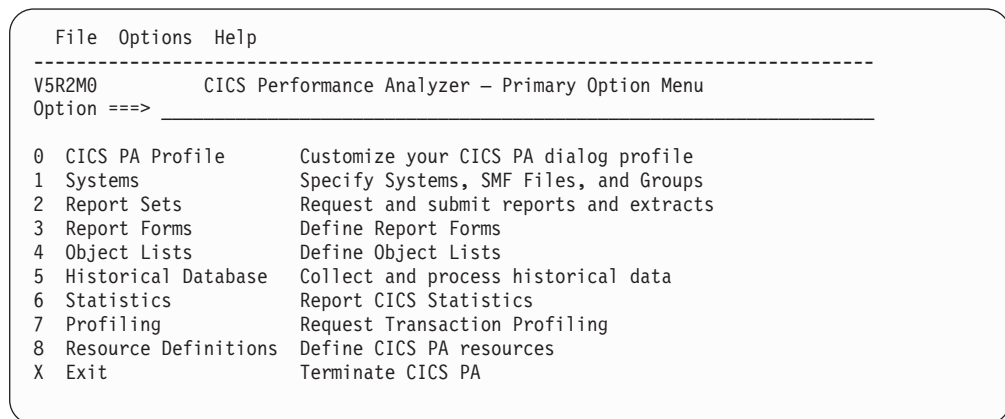


Figure 2. CICS PA Primary Option Menu

Figure 2 shows the CICS PA Primary Option Menu. For a brief explanation of the main CICS PA concepts introduced here, see “The CICS PA dialog” on page 10.

### How to use the dialog

The following steps briefly describe how to use the dialog to start reporting.

#### Initial setup (defaults apply)

This is applicable when using CICS PA for the first time.

Initial setup is optional. CICS PA uses default settings and prompts you to allocate data sets (with default allocation attributes) as they are required. However, if you want to step through the process, the initial setup procedure is:

1. Check your **ISPF environment settings**. See “Recommended ISPF setup” on page 26.
2. Specify the **CICS PA Settings**. This allows some customization of the CICS PA dialog and JCL used for generating reports and extracts. See “CICS PA Settings” on page 29.
3. Specify default **Reporting Allocation Settings** (UNIT= and SPACE=) for the Extract data sets, External Work data sets, and Sort Work data sets. These are used by the CICS PA dialog to generate the corresponding DD statements in the JCL. See “Reporting Allocation Settings” on page 31.
4. Specify the **Control Data Sets** that contain the Report Sets, Report Forms, Object Lists, and the Repository. See “CICS PA Control Data Sets” on page 34.
5. If you plan to export HDB data to DB2, specify your DB2 settings. Select option 0, CICS PA Profile, from the Primary Option Menu, and then select DB2 Settings.
6. Specify which system definitions (personal or shared or both) to use at run time. If you plan to report on data stored in log streams, specify Log stream options. Select option 0, CICS PA Profile, from the Primary Option Menu, and then select File Selection.

#### Everyday operation

The normal procedure to request and generate reports and extracts is as follows:

1. Specify the **System Definitions** by identifying your personal and shared systems (CICS APPLID, MVS Image, DB2 SSID, MQ SSID, System Logger), SMF Files, and Groups. You can automate much of this process by using the Take-up facility. See Chapter 6, "Personal System Definitions," on page 69 and Chapter 7, "Shared System Definitions," on page 115.
2. Define a **Report Set**:
  - Create a new Report Set. See "Creating new Report Sets" on page 147.
  - Specify any **Global Options and Selection Criteria**. The Global Options apply to all reports and extracts within the Report Set. The global Performance Selection Criteria apply to all Performance reports and extracts within the Report Set. The global Exception Selection Criteria apply to all Exception reports within the Report Set.
  - Select and tailor the **Reports and Extracts** that you require. If report-specific options and selection criteria are specified, they take precedence over the corresponding Global Options and Selection Criteria at JCL build time. You can request more than one of each type of report or extract (for example, 3 Performance List Reports and 2 Cross-System Work Extracts), and specify different options for each. Exclude any of a particular type you do not want to generate, and Deactivate if you want to generate none of a particular type. See "Maintaining Report Sets" on page 146 for details of all reports, extracts, and their options.
3. Define any **Report Forms** that will be used to tailor the format of certain reports and extracts. See "Maintaining Report Forms" on page 292.
4. Define any **Object Lists** used to enhance the Selection Criteria. See "Maintaining Object Lists" on page 328.
5. Enter the **RUN** command to run the Report Set. The Active status controls which reports in the Report Set are run. Only active reports in active categories are selected, but you can use the **RUN** line action to temporarily override this. A panel is displayed for you to enter run-time options. Then CICS PA generates the JCL for batch report processing. Global Options and Selection Criteria, requested reports and extracts, and any Report Forms and Object Lists they use, are converted to a stream of commands for batch execution. You can choose to submit the JCL directly, or edit it first and optionally save the JCL in an external library. See "Running Report Sets" on page 277.
6. View or print the job output using your usual method, such as SDSF or ISPF Outlist utility.
7. Process the Extract data sets using a method appropriate to each. For example:
  - Analyze the Cross-System Work extract data using CICS PA Performance Reports such as the List, Summary, and Totals reports.
  - Analyze the Performance Extract, Statistics Extract, or System Logger Extract data using external programs such as DB2 or PC spreadsheet tools.
  - Specify the Record Selection extract data sets as your SMF Files in System Definitions to reduce the volume of data processed by CICS PA.
8. Define and maintain **Historical Databases (HDBs)** as repositories of performance data. Generate reports from your HDBs or export HDB data to DB2 tables for further analysis.
9. Use the interactive Statistics Reporting facilities in the CICS PA dialog to view CICS TS and CICS TG statistics stored in SMF Files or HDBs. See Chapter 19, "Using the Statistics reporting dialog," on page 551.

---

## Standard ISPF interface

CICS PA has been designed to follow CUA conventions, while also accommodating established ISPF conventions. For example:

- Possible actions are presented in action bar pull-down menus; those available from the File, Edit, or View pull-down menus can also be requested from the command line.
- A menu or selection list item can be selected either by positioning the cursor over it (point-and-shoot) or by specifying its corresponding number, and then pressing Enter.
- For many entry fields you can select from a list of available choices by positioning the cursor on the field and pressing **Prompt** (F4). A + (plus sign) at the end of the field or column heading indicates that Prompt is available.
- Short-cut navigation to the primary CICS PA functions is available. For example, to invoke Report Sets where you request your reports and extracts, you can select option **2** from the CICS PA primary menu, or enter **=2** on the command line from anywhere in the CICS PA dialog.

Help is available throughout the CICS PA dialog. Context-sensitive help is available for each panel and input field, and there is an online tutorial.

---

## Recommended ISPF setup

The CICS PA dialog is an ISPF application following Common User Access (CUA) conventions. You can use ISPF standard facilities to customize the screens. This section contains some recommendations to help you use CICS PA efficiently.

### Screen size and scrolling

Set the screen size in your session parameters to 32 lines. CICS PA screens are optimized for 32 lines, but accommodate 24 lines by scrolling **Backward** (F7) and **Forward** (F8).

### Function keys

CICS PA uses standard conventions for function keys. For example: F1=Help, F3=Exit, F4=Prompt, F5=Rfind, F7=Backward, F8=Forward, F11=Right, F12=Cancel. However, you can use the ISPF commands **KEYS** and **KEYLIST** to assign alternative functions to the keys. For a list of the CICS PA default settings, enter the **KEYSHELP** command or select **Help->Keys Help** in the action bar.

If you are new to CICS PA, ensure that the function keys are displayed at the bottom of the screens. The ISPF command **PFSHOW ON|OFF** turns on and off the display of the function key settings.

### Prompt (F4)

Prompt is available on various data entry fields throughout the CICS PA dialog to help you specify valid values. To use this facility, position the cursor on the field and press **Prompt** (F4). A list of available values is displayed from which you can select one or more depending on the circumstance.

### Mouse options

The CICS PA Report Set panel is a tree structure of report categories and reports. The report categories act as folders that can expand (to show) and collapse (to hide) the reports contained within them. If your terminal emulation permits,



configure your Mouse Options to activate the lightpen function. You can then use the left-button of your mouse to click on the + to expand and - to collapse the report categories. Alternatively, you can use cursor selection on the + and -, or enter line action S.

### CUA attribute settings

The CICS PA dialog is designed to use the default CUA attributes. However, we recommend that you set the **Point-and-Shoot** field to easily distinguish Point-and-Shoot fields from other types of fields. You can use the ISPF CUAATTR command to change the attribute settings. For example, you could set Point-and-Shoot to yellow as shown in Figure 3, or for better distinction, you could also set the highlight attribute to REVERSE (reverse video).

CUA Attribute Change Utility				Defaults
Command ==>				
Panel Element	Color	Intensity	Highlight	More: +
Choice Entry Field . . . . .	TURQ	LOW	USCORE	
List Entry Field . . . . .	TURQ	LOW	USCORE	
List Item Description . . . .	GREEN	LOW	NONE	
List Items . . . . .	WHITE	LOW	NONE	
Normal Entry Field . . . . .	TURQ	LOW	USCORE	
Normal Text . . . . .	GREEN	LOW	NONE	
<b>Point-and-Shoot . . . . .</b>	<b>YELLOW</b>	HIGH	NONE	
Reference Phrase . . . . .	WHITE	HIGH	NONE	

Figure 3. Recommended CUAATTR settings for CICS PA

### Point-and-Shoot fields

CICS PA employs point-and-shoot fields. For efficient use, enter the ISPF **SETTINGS** command to display the ISPF Settings screen then select **Tab to point-and-shoot fields**.

ISPF Settings				More: +
Command ==>				
Options		Print Graphics		
Enter "/" to select option		Family printer type 2		
Command line at bottom		Device name . . . .		
7 Panel display CUA mode		Aspect ratio . . . 0		
/ <b>Long message in pop-up</b>				
Tab to action bar choices				
7 <b>Tab to point-and-shoot fields</b>		General		
/ Restore TEST/TRACE options		Input field pad . . N		
Session Manager mode		Command delimiter . ;		
7 Jump from leader dots				
Edit PRINTDS Command				
7 Always show split line				
_ Enable EURO sign				
:				
Terminal Characteristics				
Screen format 3 1. Data 2. Std 3. Max 4. Part				

Figure 4. Recommended ISPF settings for CICS PA

## Displaying messages

CICS PA uses both long and short messages. Short messages display at the top right, on the same line as the screen title. Long messages are designed to display in a pop-up window. However, long messages of less than the screen width can be customized to display just below or above the command line rather than in a window. If you always want long messages in a pop-up window, enter the ISPF **SETTINGS** command to display the ISPF Settings screen, then select **Long message in pop-up** as shown in Figure 4 on page 27.

Messages displayed in a window can be moved to another location on the screen as follows:

1. Position the cursor on the top or bottom border of the message window, and press Enter.
2. Position the cursor at the location on the screen to which you want to move the message, then press Enter.

---

## CICS PA Profile Options

To display the CICS PA Profile Options Menu, either:

1. From the CICS PA Primary Option Menu, select option 0 **CICS PA Profile**
2. From any CICS PA panel, select **Options** from the action bar

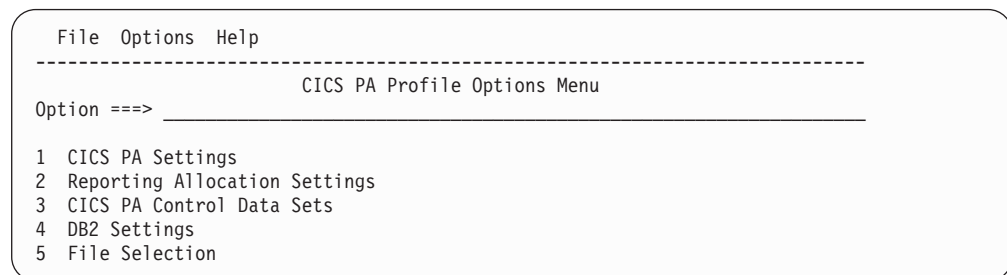


Figure 5. Profile Options Menu

This menu allows you to customize your CICS PA user profile. Defaults are set initially so you can start using CICS PA, but you can change these at any time to suit the particular way you want to interact with the CICS PA dialog. Typically you would set the profile options just once.

The menu items are:

### CICS PA Settings

Customize some aspects of the CICS PA dialog and the job card it uses when generating Report Set JCL.

### Reporting Allocation Settings

Specify the allocation attributes of data sets that might need to be created during Report Set processing. The CICS PA dialog uses these when generating the Report Set JCL.

### CICS PA Control Data Sets

Specify the data set names where CICS PA stores Report Sets, Report Forms, Object Lists, and the Repository.

### DB2 Settings

Specify settings for exporting data from historical databases (HDBs) to DB2. For details, see “Creating DDL to define a DB2 table” on page 673.

## File Selection

Specify which system definitions (personal or shared or both) to use at run time and options for using log streams across CICS PA.

## CICS PA Settings

This facility allows you to customize the CICS PA dialog and batch JCL for running Report Sets and processing Historical Databases.

To display the CICS PA Settings panel, select option 1 **CICS PA Settings** from the Profile Options Menu.

```
File  Options  Help
-----
CICS PA Settings

Command ==> _____

Specify settings.

CICS PA Load Library . . . . 'CICSPA.V5R2M0.SCPALINK' _____

Personal Profile Library . . . 'xxxx.CICSPA.TABL' _____

Delete Confirmation . . . . YES____ (Yes or No)
Cancel Confirmation . . . . NO____ (Yes or No)
Automatic Save on Exit . . . YES____ (Yes, No or Prompt)
Reports in Upper Case . . . . NO____ (Yes or No)
Read SMF File to EOF . . . . NO____ (Yes or No)
Preferred Date Format . . . . 1____ 1. ISO (YYYY/MM/DD)
                                   2. US (MM/DD/YYYY)
                                   3. European (DD/MM/YYYY)
DASD Work File Unit Name . . . _____ (Blank for System Default)

Job Statement Information:
==> //userid JOB (ACCOUNT),'NAME',REGION=4M _____
==> _____
==> _____
==> _____
==> _____
==> _____
```

Figure 6. CICS PA Settings

All options have initial settings, but you can change these at any time to suit the way you use CICS PA. Values must be specified for all options, except the DASD Work File Unit Name and CICS PA Load Library which have system defaults.

The options are:

### CICS PA Load Library

Specify the name of the library that contains the CICS PA executable modules. This is used by the CICS PA dialog when generating the JCL for executing Report Sets. It need not be specified if the modules reside in the system LINKLIST. The initial setting is 'xxxx.SCPALINK' where xxxx is the DSN prefix specified at dialog start up. The default initial setting is 'CICSPA.V5R2M0.SCPALINK'.

### Personal Profile Library

The CICS PA dialog utilizes ISPF tables for storing some user data such as your personal system definitions.

Specify the name of the data set to be used for maintaining these ISPF tables. As the data is typically user-specific and sharing with other users is

not an issue, it is recommended that each user has their own data set to avoid contention with other users for access to tables.

The initial setting is 'xxxx.CICSPA.TABL' which CICS PA translates to 'xxxx.CICSPA.TABL' where xxxx is determined by your TSO prefix and userid.

If the specified data set does not exist, CICS PA uses default allocation parameters to create it when it is required. The data set can be allocated using ISPF facilities outside the dialog if your site has local requirements not satisfied by the defaults.

#### **Delete Confirmation**

This option applies *only* to Delete requests from panels which have **Confirm** in the action bar: the CICS PA “primary object” list panels (Report Sets, Report Forms, Object Lists). From these list panels, deleted items cannot be reinstated, so you might always want to be prompted to confirm your Delete requests. On all other panels, deleted items can be reinstated by a Cancel request.

Specify **YES** to request CICS PA to display a confirmation pop-up to prompt you to confirm your Delete request before it is actioned. This is the initial setting.

Specify **NO** to have CICS PA action Delete requests immediately without prompting for confirmation.

**Note:** This option does not apply to HDB where the default is always **YES**.

#### **Cancel Confirmation**

This option applies *only* to Cancel requests from panels which have **Confirm** in the action bar: CICS PA “primary object” panels (Report Set, Report Form, Object List), System Definitions and HDB.

Specify **YES** to display a confirmation pop-up if you attempt to Cancel when there have been updates. This is to alert you that you have made changes that will be discarded if you proceed with the Cancel request.

Specify **NO** to have CICS PA action Cancel requests immediately, without first prompting for confirmation. This is the initial setting.

#### **Automatic Save on Exit**

This option applies *only* to attempts to Exit edit sessions after making changes on CICS PA “primary object” panels (Report Set, Report Form, Object List) and the System Definitions panel. It is not applicable to HDB.

Specify **YES** to automatically save the changes on Exit. This is the initial setting.

Specify **NO** to automatically discard the changes on Exit. To save any changes before exit you must remember to use the **SAVE** command.

Specify **PROMPT** to display a message if there have been updates when you attempt to Exit. To save the changes, you can use the **SAVE** command. Otherwise, to discard the changes, you can use the **CANCEL** command.

#### **Reports in Upper Case**

Specify **NO** to receive reports in upper and lower case characters. This is the initial setting.

Specify **YES** to translate all reports to upper case characters only. This is particularly for printers that cannot handle mixed case. This generates the UPPER parameter on the EXEC statement in CICS PA JCL generation.

### Read SMF File to EOF

Select this option to force CICS PA to process all records in the SMF file through to EOF. Normally CICS PA stops reading the SMF file as soon as the first record is encountered that is later than the **To** time (SMFSTOP). However, if the file is not in ascending time sequence, reading might end before all records earlier than SMFSTOP have been found.

This option is only effective when the **To** time is specified. Select it when the SMF file has been presorted and you want to ensure that all records within the **From** and **To** time range are processed.

The Read SMF File to EOF setting in the profile options is added as a READ2EOF operand to JCL built when the input is an SMF file and Report Interval is specified in the RUN panel.

### Preferred Date Format

The CICS PA dialog can accept and present dates in the following formats:

1. YYYY/MM/DD ISO
2. MM/DD/YYYY US
3. DD/MM/YYYY European

Enter either **1**, **2**, or **3** for the date format you prefer. **1 (ISO)** is the initial setting.

**Note:** This option does *not* apply to the format of dates presented on batch reports, which is typically MM/DD/YYYY. Further, there are exceptions within the CICS PA dialog where the functionality dictates the date format. For example, the **Changed** time stamp field of component lists (Report Sets, Report Forms, Object Lists) always presents as YYYY/MM/DD HH:MM to be able to sort on this field.

### DASD Work File Unit Name

Specify the device type or group name to be used by CICS PA to allocate DASD data sets as required by facilities such as:

- Report Set, Report Form, Object List Data Sets
- Extract, External and Sort Work Data Sets used in batch processing (if the Reporting Allocation Settings are not set).

The name must represent a device that is defined as DASD in the Eligible Device Table of the current processor. For example, SYSDA, SYSALLDA, 3390.

If not specified, the system default is used. Blank (for system default) is the initial setting.

### Job Statement Information

Specify the JCL JOB statement, which can be continued to a maximum of six lines. These are used by CICS PA to supply the job statement for batch Report Set and HDB processing. All the rules of JCL must be followed in specifying the job statement. CICS PA does not validate this information. Blank lines are ignored.

The default is `//userid JOB (ACCOUNT),'NAME'`.

It is recommended that you include a **REGION=** parameter on your job card to allocate a virtual storage region size for CICS PA of at least 4M.

## Reporting Allocation Settings

This facility is used to specify allocation attributes for data sets that CICS PA might need to create during batch processing of Report Sets.

To display the Reporting Allocation Settings panel, select option 2 **Reporting Allocation Settings** from the Profile Options Menu.

```

File Options Help
-----
Reporting Allocation Settings
Command ===> _____

Specify data set allocation settings.

Extract Data Sets:
===> // _____ UNIT=SYSDA, SPACE=(CYL,(10,10)) _____
===> _____
===> _____

External Work Data Sets:
===> // _____ UNIT=SYSDA, SPACE=(CYL,(10,10)) _____
===> _____
===> _____

Sort Work Data Sets:
===> // _____ UNIT=SYSDA, SPACE=(CYL,(10,10)) _____
===> _____
===> _____

```

Figure 7. Reporting Allocation Settings

CICS PA provides default settings for each type of data set. Figure 7 shows the default allocation settings. The defaults are displayed when you first invoke the panel or when you clear a setting.

The required data set allocation settings are:

#### Extract Data Sets

Specify the UNIT and SPACE attributes for the following extract data sets:

- Cross-System Work
- Performance
- Record Selection
- System Logger
- Statistics

These are sequential data sets. You do not need to specify the DCB attributes as CICS PA sets the appropriate DCB at Extract run time. However, if you specify DCB attributes, CICS PA will override RECFM and LRECL with the correct values. CICS PA will also assign the BLKSIZE to an allowable value closest to your specification. For example, if you want half track blocking, simply specify DCB=BLKSIZE=27998 (for UNIT=3390) and CICS PA will assign the highest allowable BLKSIZE not exceeding 27998.

CICS PA provides default settings. To reset to the default, erase the field then press Enter.

When the CICS PA dialog builds the Report Set JCL for a new Extract Data Set, the specified allocation settings are appended to a statement of the form:

```
//DDname DD DSN=datasetname,DISP=(disp,CATLG),
```

where *DDname* is generated by CICS PA, and *datasetname* and *disp* are the data set name and disposition specified on the corresponding Extract panel.

### External Work Data Sets

Specify the UNIT and SPACE attributes for the External Work Data Sets which might be required by the following reports and extracts:

- Performance List Extended report
- Performance Summary report (optional)
- Transaction Profiling report (optional)
- Cross-System Work report and extract
- Transaction Group report
- BTS report
- Workload Activity report (possibly)
- Transaction Tracking List report
- Transaction Tracking Summary report
- Statistics Alert reports
- DB2 report
- System Logger report
- Performance Data extract (optional for Summary Form)

These work data sets are temporary sequential data sets used by CICS PA to store records passed to the external SORT facility. You do not need to specify the DCB attributes as CICS PA sets the appropriate DCB at Report Set run time.

CICS PA provides default settings. To reset to the default, erase the field then press Enter.

When the CICS PA dialog builds the Report Set JCL, the specified allocation settings are appended to a statement of the form:

```
//CPAXWnnn DD DISP=(NEW,DELETE),
```

where *nnn* is **001-999** to uniquely identify each data set.

### Sort Work Data Sets

Specify the UNIT and SPACE attributes for the Sort Work Data Sets which might be required by the following reports and extracts:

- Performance List Extended report
- Performance Summary report (optional)
- Transaction Profiling report (optional)
- Cross-System Work report and extract
- Transaction Group report
- BTS report
- Workload Activity report (possibly)
- Transaction Tracking List report
- Transaction Tracking Summary report
- Statistics Alert reports (optional)
- DB2 report
- System Logger report
- Performance Data extract (optional for Summary Form)

These work data sets are temporary sequential data sets used by the SORT facility.

CICS PA provides default settings. To reset to the default, erase the field then press Enter.

When the CICS PA dialog builds the Report Set JCL, the specified allocation settings are appended to a statement of the form:

```
//CPASWKnn DD DISP=(NEW,DELETE),
```

where *nn* is **01-04** to uniquely identify each data set.

## CICS PA Control Data Sets

To work with CICS PA Report Sets, Report Forms, and Object Lists, you must first identify the data sets where they are to be stored. These are called the CICS PA Control Data Sets.

To specify the control data sets, select option 3 **CICS PA Control Data Sets** from the Profile Options Menu, or enter CDS from the command line anywhere in the CICS PA dialog.

```
File Options Help
-----
CICS PA Control Data Sets
Command ==>
Specify the names of the CICS PA Control Data Sets.
Report Sets . . . 'xxxx.CICSPA.RSET' +
Report Forms . . . 'xxxx.CICSPA.FORM' +
Object Lists . . . 'xxxx.CICSPA.OBJL' +
Repository . . . . 'CICSPA.XYX.REPOSTRY' +
Missing Data Sets Option:
1 1. Allocate now
2. Allocate when required
```

Figure 8. CICS PA Control Data Sets

Specify the name of the data sets where Report Sets, Report Forms, and Object Lists are maintained:

### Report Sets

Report Sets define selections of reports and extracts and their associated options.

### Report Forms

Report Forms are used to tailor the format and content of particular reports and extracts.

### Object Lists

Object Lists are user-defined lists of objects that are defined by name and can be specified in selection criteria to provide filtering of the report data.

You can specify the same data set for all three components. However, it is recommended that each type of component is stored in a separate data set to avoid conflict with member names.

For a particular component, related definitions should share a common data set. For example, keep related Report Sets together in the one data set, related Report Forms in another, and related Object Lists in a third.

However, you can have multiple data sets for each component, such as a separate data set for each CICS subsystem or a personal data set. For each component, only one data set at a time is used by the dialog. That is, there is only one current Report Sets data set, one current Report Forms data set, and one current Object Lists data set. To change the current data set, enter the data set name or press **Prompt (F4)** to select from a list of data sets previously used.



If you have not previously specified a data set name, CICS PA assigns a default that you can erase or overwrite.

Default Data Set Name	Explanation
'prefix.CICSPA.type'	TSO prefix and userid are the same
'prefix.userid.CICSPA.type'	TSO prefix and userid are different
'userid.CICSPA.type'	User has no TSO prefix

where *type* is RSET, FORM, or OBJL. Figure 8 on page 34 shows an example of the Control Data Sets panel with the default names specified.

The control data sets must be cataloged, partitioned data sets (PDS or PDSE) with RECFM=FB and LRECL=80. You can let CICS PA create the data sets dynamically using the default attributes of LRECL=80, BLKSIZE=6160, SPACE=(CYL,(1,1,50)). Alternatively, you can use standard facilities such as ISPF option 3.2 Data Set Utility to create and catalog the data sets.

When specifying the data set name, standard TSO conventions apply. For example, if the TSO option **PROFILE PREFIX** is in effect, the prefix is appended as the high-level qualifier unless the data set name is enclosed in quotes.

Specify the **Missing Data Sets Option** to tell CICS PA whether to allocate new data sets now or leave that until later when you try to perform functions that require them.

If the data set is not cataloged, a Confirm Create pop-up asks you to confirm that you want CICS PA to create the data set for you using default allocation attributes.

You can also specify the data set name of the **Repository** on this panel. The default name is 'CICSPA.HDB.REPOSTRY'. For information on this data set, see "Repository" on page 629.

## Maintaining CICS PA data sets

The CICS PA data sets are partitioned data sets and carry product sensitive information in the directory. You can use DFSMSdss utilities and data set utility IEBCOPY for maintenance purposes.

Members in these data sets are saved in a special format. Members must *not* be created or modified using facilities other than CICS PA as this can cause them to become unusable by CICS PA. Should this occur, a message similar to this one is displayed by panels that use the member:

Only Report Set members in the data set are included in the list.  
Some members have been excluded.

Ensure that you specified the correct data set name. If correct, you can use ISPF to determine the offending member or members. For example, use ISPF option 3.1 to display the list of members in the Report Sets data set. Members created by CICS PA will display with no modification details, whereas those edited using ISPF will show their modification details. To correct the situation, either:

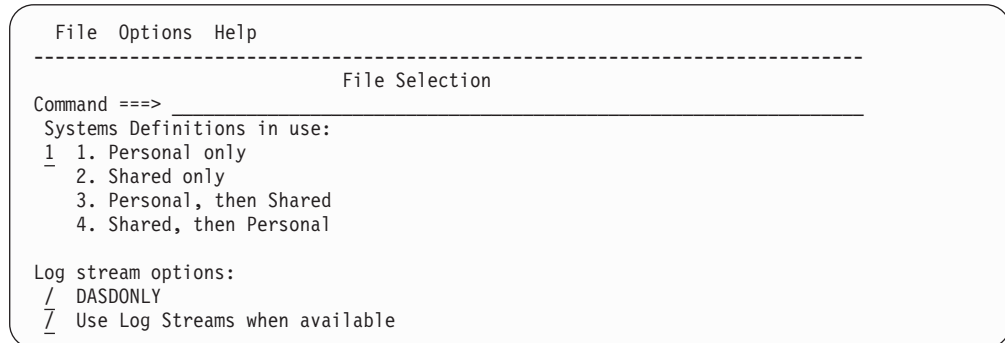
- Use ISPF to remove (move or delete) the offending members from the data set.
- Use CICS PA facilities. When the Report Sets panel is displayed, enter **SELECT** in the command line and specify the name of the offending member. If the contents of the member are valid Report Set details, they will display on the

EDIT Report Set panel. Save the Report Set and the member will appear in the list of Report Sets in the specified sort order. If it is not a valid Report Set, an error message is displayed.

## File selection options

This facility allows you to specify which system definitions (personal or shared or both) to use at run time and options for using log streams across CICS PA.

To display the File Selection panel, select option 5 **File Selection** from the Profile Options Menu.



```
File  Options  Help
-----
                                File Selection
Command ==> _____
Systems Definitions in use:
1  1. Personal only
   2. Shared only
   3. Personal, then Shared
   4. Shared, then Personal

Log stream options:
/  DASDONLY
_  Use Log Streams when available
```

Figure 9. File selection options

The options are:

### Systems Definitions in use

Select which system definitions to use. You can work with either personal system definitions or shared system definitions or both.

1. Personal only.  
Select to use only your personal system definitions for reporting.
2. Shared only.  
Select to use only your shared system definitions for reporting.
3. Personal, then Shared.  
Merge personal and shared system definitions for reporting. If there are two definitions with the same name, your personal definition will take precedence over the shared definition.
4. Shared, then Personal.  
Merge shared and personal system definitions for reporting. If there are two definitions with the same name, the shared definition will take precedence over your personal definition.

### DASDONLY

A DASD-only log stream can contain data from only one system in the sysplex and can be accessed only by that system. To generate the JCL to correctly route jobs, use this option to indicate that all log streams will be treated as DASD-only and will require an Image name to execute.

### Use Log Streams when available

If you select this option, CICS PA will first look for a log stream. If no log stream is available, Cyclic or Daily SMF files will be used instead.

---

## Chapter 4. The CICS PA plug-in for CICS Explorer

The CICS PA plug-in for CICS Explorer (CICS PA plug-in) is an Eclipse plug-in that integrates with the IBM CICS Explorer to help you analyze CICS data, including the Performance Summary and Performance Alert reports and CICS PA Statistics and Statistics Alerts reports.

Using the CICS PA plug-in, you can perform the following tasks:

- For performance data:
  - View and sort the CSV or database data in a spreadsheet viewer.
  - Select single or multiple transactions for analysis.
  - View CICS performance alert reports and navigate to specific records.
  - View graphical details of transaction performance metrics, including response time, suspend time, CPU time, file usage, and storage usage.
- For statistics data:
  - View interval-based graphical charts showing multiple system metrics including storage and transaction response.
  - View CICS statistics alert reports and navigate to specific records.

For more information about the IBM CICS Explorer, see <http://www.ibm.com/cics/explorer>.

The procedure that follows describes how to use CICS PA to get data from an SMF data set into a DB2 table or CSV file for use by the CICS PA plug-in.

The step-by-step procedure presented here shows you how to:

1. Define a performance HDB, optionally including performance alert data.
2. Define a statistics HDB, optionally including statistics alert data.
3. Build the manifest. (This step is only required if the data is to be exported to DB2.)
4. Load the HDB.
5. Export data:
  - To a DB2 table.
  - To a CSV file (Performance HDB only).
6. Access the data using the CICS PA plug-in.

While this procedure describes each step in detail, with enough information to move on to the next step, many of the steps are described individually in more detail in other parts of this book.

---

### Define a Performance HDB for export to DB2

Defining a Performance HDB allows you to collect (load) and report historical performance data for later analysis using the CICS PA plug-in.

1. On the **Historical Database** menu, select option **2 Define**.  
The **New HDB Definition** pop-up menu appears.
2. Select the HDB type **Performance** and then press Enter.

The New HDB Definition window appears:

File Systems Options Help	
New HDB Definition	
Command ==>	
Specify new HDB definition options then press EXIT to save.	
Name . . . . .	EXPLOR5P APPLID _____ + Image _____
Qualifier . . .	GF9IJG / Explorer
Description . .	Explorer HDB for CICS TS V5
Load Options: Selection Criteria:	
Template . . . .	EXPLOR52 + _ Performance
Alert . . . . .	_____ +
Severity . . . .	_____ +
Summary Interval	_____ (hh:mm:ss)
Data Retention Period:	
HDB: Years 1	Months _____ Weeks _____ Days _____ Hours _____
DB2: Years _____	Months 2 Weeks _____ Days _____ Hours _____
Data Set Allocation Settings:	
DSN Prefix . . . . .	USER
Management class . . .	_____ (Blank for default management class)
Storage class . . . .	_____ (Blank for default storage class)
Volume serial . . . . .	_____ (Blank for system default volume)
Device type . . . . .	_____ (Generic unit or device address)
Data class . . . . .	_____ (Blank for default data class)
Space Units . . . . .	CYLS (TRKS, CYLS)
Primary quantity . .	10 (In above units)
Secondary quantity	5 (In above units)
F1=Help F3=Exit F4=Prompt F7=Backward F8=Forward F10=Actions	
F12=Cancel	

### 3. Type a name for the HDB.

**If you plan to export to DB2:** The DB2 table names for a Performance HDB intended for the CICS PA plug-in are fixed as *qualifier.CPA\_CMFPSUM* and *qualifier.CPA\_CMFACSUM*. This is unlike a user Performance HDB, where the DB2 table name is the same as the HDB name. Note that the qualifier is also specified as the Schema (qualifier) in the plug-in DB2 connection settings.

When you export a Performance HDB to DB2, the CICS PA dialog generates JCL to perform the export. This JCL specifies the DB2 table name. Do not change the DB2 table name in the generated JCL as this would result in the CICS PA plug-in not finding the DB2 table.

### 4. Specify a Qualifier in ISPF member name format. This value is used as an identifier to associate related HDB tables in the manifest. It is also incorporated into the DB2 table name, for example: *qualifier.CPA\_CMFPSUM*.

Multiple performance HDBs with the same qualifier will be exported to the same DB2 table. This allows you to consolidate data from multiple HDBs into a single DB2 table for analysis using the CICS PA plug-in.

### 5. Select the Explorer option to make this HDB eligible for inclusion in the manifest. This also ensures that only internal templates are listed in the Template field.

### 6. Press **Prompt** (F4) in the Template field to select an internal template that has been predefined for use with the CICS PA plug-in. Summary templates are named EXPLORxx (where xx is the CICS TS version number) and APPLNMxx for Application Context data. List templates are named EXPLSTxx.

### 7. Optionally, enter S in the Performance field to specify selection criteria for this HDB. Alternatively, you can specify the selection criteria in the Template by editing the Template.

8. Optionally, for HDBs that are based on a List template, you can specify an alert definition to be used during the load. The loading of a List HDB that is defined with a Performance Alert definition results in the creation of an additional set of containers to store Alert records.

The **Severity** field controls the type of transaction records and alerts loaded into the HDB in the same way as in the Performance List report. You can use this option to focus the loaded data on specific transaction types.

**CRITICAL**

Only transactions with critical alerts are loaded.

**WARNING**

Only transactions with critical alerts and warning alerts are loaded.

**INFO** Only transactions with critical alerts, warning alerts, or informational alerts are loaded.

**ELIGIBLE**

Only transactions that are eligible for alert processing are loaded. Eligible transactions are those that have field values that match the Resource values in the Performance Alert Definition. All eligible transactions are loaded regardless of whether they generate an alert.

**ALL** All transactions are loaded regardless of whether they are eligible or whether they generate an alert. Use this option to load a general List HDB for normal reporting while also generating any associated alert, thus avoiding the need to create two separate HDBs.

9. Optionally, specify a Summary Interval to override the time interval defined in the template. This means that the internal templates that are predefined for use with the CICS PA plug-in can be used in multiple HDBs that each require a different interval.
10. Optionally, specify data retention periods indicating how long you want to keep the container data sets and DB2 rows associated with this HDB. You can use the HDB Housekeeping program to delete expired container data sets and DB2 rows. If the HDB container data sets are no longer required after their data has been exported to DB2, specify a retention period of 0 in any of the HDB periods to make the data sets expire immediately.
11. Specify the data set allocation settings. The only required fields are:
- DSN prefix
  - Space units
  - Primary and secondary quantities

CICS PA creates HDB data set names and any optional performance alert containers (HPA) in the following pattern:

```
DSN-prefix.HDB-name.Dyyddd.Thhmmss.HDB  
DSN-prefix.HDB-name.Dyyddd.Thhmmss.HPA
```

where the date and time indicate when the HDB data set was allocated (CICS PA allocates the data set just before loading data).

12. Press the Exit key (F3) to save the HDB definition.

**Note:** Rebuild the manifest whenever you add or change an HDB in a way that affects its eligibility for inclusion in the manifest. For example, if an HDB is currently included in the manifest and you change its qualifier or clear the Explorer option, it is no longer eligible for inclusion in the manifest. See “Build the manifest” on page 41.

## Define a Statistics HDB for export to DB2

Defining a Statistics HDB allows you to collect (load) and report historical CICS statistics and server statistics data and CICS Transaction Gateway statistics data for later analysis using the CICS PA plug-in.

1. On the **Historical Database** menu, select option **2 Define**.

The **New HDB Definition** pop-up menu appears.

2. Select the HDB type **Statistics** and then press Enter.

The **New HDB Definition** window appears:

File Systems Options Help	
New HDB Definition	
Command ==> _____	
Specify new HDB definition options then press EXIT to save.	
Name . . . . .	EXPLORST APPLID _____ + Image _____
Qualifier . . .	Explorer
Description . .	Explorer Stats DB for CICS TS V4
Statistics Reports: Alert Definition	
_ Select to specify Statistics Reports	Alert . . _____ +
Interval Type . . / EOD / INT / USS / REQ / RRT	
Data Retention Period:	
HDB: Years 1 Months _____ Weeks _____ Days _____ Hours _____	
DB2: Years _____ Months _____ Weeks _____ Days _____ Hours _____	
Data Set Allocation Settings:	
DSN Prefix . . . . .	USER
Management class . . .	_____ (Blank for default management class)
Storage class . . . .	_____ (Blank for default storage class)
Volume serial . . . .	_____ (Blank for system default volume)
Device type . . . . .	_____ (Generic unit or device address)
Data class . . . . .	_____ (Blank for default data class)
Space Units . . . . .	CYLS (TRKS, CYLS)
Primary quantity . .	10 (In above units)
Secondary quantity	5 (In above units)
F1=Help F3=Exit F4=Prompt F7=Backward F8=Forward F10=Actions	
F12=Cancel	

3. Type a name for the HDB.
4. Specify a Qualifier in ISPF member name format. This value is used as an identifier to associate related HDB tables in the manifest. It is also incorporated into the DB2 table name: *qualifier.CPA\_stid*, and is used as the Schema (qualifier) in the plug-in DB2 connection settings.

Multiple Statistics HDBs with the same qualifier will be exported to the same set of DB2 *stid* tables. This allows you to consolidate data from multiple HDBs into a single set of tables for analysis using the CICS PA plug-in.

5. Select the Explorer option to make this HDB eligible for inclusion in the manifest.
6. Enter / next to **Select to specify Statistics Reports** and then press Enter to activate the types of statistics (reports) that you want to collect.
  - Use the A line action to activate collection for the corresponding report or category. This will result in status indicator Collect=Yes.
  - Use the AO line action to activate collection only of data that satisfies an Alert condition. This will result in status indicator Collect=Al t.

- Use the AL line action to activate load to DB2. This will result in status indicator DB2 Load=Yes.

Press Exit (F3) to save the **Statistics Reports** settings and return to the **New HDB Definition** panel.

- If you used line action AO against any report, or you used line action A (activate collection) against either of the Alert reports, you must specify an Alert Definition. Press Prompt (F4) in the Alert field to select from a list of Alert Definitions.
- Select the types of statistics you are interested in:
  - EOD** End-of-day
  - REQ** Requested
  - USS** Unsolicited
  - INT** Interval
  - RRT** Requested reset
- Optionally, specify data retention periods indicating how long you want to keep the container data sets and DB2 rows associated with this HDB. You can use the HDB Housekeeping program to delete expired container data sets and DB2 rows. If the HDB container data sets are no longer required after their data has been exported to DB2, specify a retention period of 0 in any of the HDB periods to make the data sets expire immediately.
- Specify the data set allocation settings. The only required fields are:
  - DSN prefix
  - Space units
  - Primary and secondary quantities

CICS PA creates HDB data set names in the following pattern:

```
dsn-prefix.hdb-name.Ddyddd.Thhmmss.HDB
```

where the date and time indicate when the HDB data set was allocated (CICS PA allocates the data set just before loading data).

- Press the Exit key (F3) to save the HDB definition.

**Note:** Rebuild the manifest whenever you add or change an HDB in a way that affects its eligibility for inclusion in the manifest. For example, if an HDB is currently included in the manifest and you change its qualifier or clear the Explorer option, it is no longer eligible for inclusion in the manifest. See “Build the manifest.”

In addition, the manifest will only contain entries for statistics reports with a status of Collect=Yes or Al t and DB2 Load=Yes. If these indicators are not set, the report will not be included in the manifest and therefore will not be accessible through the CICS PA plug-in. Therefore you should rebuild the manifest whenever any changes are made to the status of a statistics report in an eligible Statistics HDB.

---

## Build the manifest

A manifest is a proprietary DB2 table that contains all the information required by the CICS PA plug-in to access and use historical data. The manifest is a catalog of DB2 tables for HDBs that are associated with the same qualifier and for which the Explorer indicator is set.

Rebuild the manifest in the following situations:



- Whenever you add or change an HDB in a way that affects its eligibility for inclusion in the manifest. For example, if an HDB is currently included in the manifest and you change its qualifier or clear the Explorer option, it is no longer eligible for inclusion in the manifest.
  - Whenever any changes are made to the status of a report in an eligible Statistics HDB. The manifest will only contain entries for statistics reports with a status of Collect=Yes or Alt and DB2 Load=Yes. If these indicators are not set, the report will not be included in the manifest and therefore will not be accessible through the CICS PA plug-in.
  - When you upgrade to a new release of CICS TS in which the statistics record ID changes. For a table of record IDs by supported CICS TS release, see Chapter 19, "Using the Statistics reporting dialog," on page 551.
1. On the **Historical Database** menu, select option **5 Export** or **7 Maintenance**.  
The list of HDBs appears.
  2. Select **Explorer -> Manifest Maintenance** from the action bar.  
The **Manifest Maintenance** panel appears:

File Options Help

Manifest Maintenance

Command ==> \_\_\_\_\_

Specify Qualifier for Manifest.

Qualifier . . . GF9IJG                         Create Tablespace

Repository . . . . . : CICSXA.XYX.REPOSTRY

CICS versions (VRM):  
Transaction Server . : 680  
Transaction Gateway : 900

DB2 Settings:

DB2 Subsystem ID . . .	DH2C		
DSNTIAD Plan Name . .	DSNTIA91		
DB2 Load Library . . .	'DB2.V910.SDSNLOAD'		
DB2 Exit Library . . .	'DB2.V910.SDSNEXIT'		
DB2 RUNLIB Library . .	'DSN910.RUNLIB.LOAD'		
Database . . . . .	FGSI87FC	Storage Group . .	SYSDFLT
VCAT Catalog name . .	DB2CAT	Volume . . . . .	
Allocation: Primary	10	Secondary . . . . .	5

F1=Help      F3=Exit      F7=Backward   F8=Forward   F10=Actions   F12=Cancel

Figure 10. Manifest Maintenance

3. Type the name of a qualifier.  
The manifest table will be named *qualifier*.CPA\_MANIFEST. HDBs that have the same qualifier and which are otherwise eligible will be included in this manifest.
4. When creating the first manifest, select Create Tablespace. The tablespace name is MANIFEST. On subsequent uses of Manifest Maintenance (either when creating a manifest for a new qualifier or recreating a manifest to add or delete HDBs) do not select Create Tablespace.
5. Contact your DB2 administrator for your local DB2 settings, and then type the values into the panel.
6. Press Enter. The panel prompts you to press Enter again to proceed.  
Press Enter again. An edit panel appears, containing JCL to create the required DB2 table.



7. Enter **sub** to submit the JCL, and then press the Exit key (F3) to return to the CICS PA panel.
8. Check the Recap report, which is written to MANB0001. This contains output from the job step that populates the manifest, and will include details of the HDBs that were included.
9. Check the SYSPRINT file in the job output, to confirm that the manifest table was successfully defined.

## Sample Recap report

This example shows an example of the Recap report that is written by the manifest build job to MANB0001. This shows the total number of Performance and Statistics tables included in the manifest. Duplicate entries are listed in the report, though only the first occurrence is included in the manifest.

V5R2M0

CICS Performance Analyzer  
Manifest Build Recap Report

... Page 1

MANB0001 Printed at 12:03:45 11/12/2013

Manifest Build for Qualifier: STTS52      Repository DSN: CPA000.NW25X.MANIFEST.MAINT

Number of Performance tables:            3  
Number of Statistics tables :            94

HDB Name	Table Name	Description	Status
CMF52SUM	CPA_CMFPSUM	Performance Summary	Included
CMFLST52	CPA_CMFLST	Performance List	Included
CMFLST52	CPA_CMFALERT	Performance Alerts	Included
STAT52	CPA_HST019A	Domain Subpools	Included
	CPA_HST020A	Task Subpools	Included
	CPA_HST010A	Transaction Manager	Included
	CPA_HST011A	Transactions	Included
	CPA_HST012A	Transaction Classes	Included
	CPA_HST016A	FEPI Pools	Included
	CPA_HST017A	FEPI Connections	Included

## Load the HDB

1. On the **Historical Database** menu, select option **3 Load**. (You can also load the HDB from the Report Set panel by selecting HDB Load in the Extracts category.)  
The list of HDBs appears.
2. Select the HDB that you want to load.  
The **Load HDB** pop-up window appears:

File Systems Options Help	
Load SUMMARY HDB - EXPLOR5P	
Command ==> _____	
Specify HDB load options then press Enter to continue submit.	
System Selection:	Report Interval _____
APPLID . . _____ +	YYYY/MM/DD HH:MM:SS.TH
Image . . _____ +	From _____
Group . . _____ +	To _____
DB2 Export Options:	Table Load Options
_ Load DB2 Table	1 1. Resume 2. Replace
Include Clock Field Components	Summary Options
1 1. Time and Count	_ Include Sums of Squares
2. Time only	
3. Count only	Enter "/" to select option
	/ Edit JCL before submit

3. Select the CICS systems whose data you want to load.
4. Specify the time interval of the data that you want to load.  
If you omit the time interval, and there is more than one SMF data set for the systems that you selected, then CICS PA selects all SMF data sets defined for that system.
5. If you want to load the HDB and export the data to the DB2 tables in a single job, select Load DB2 Table option and specify Table Load Options. Note that to do this the DB2 table must already be defined.  
For a Performance HDB, if Load DB2 Table is selected ensure that Include Clock Field Components is set to 1 (Time and Count), and Summary Options is not selected (blank).
6. Press Enter to submit the load job.  
If you selected the "Edit JCL before submit", then the JCL appears in an edit panel. To submit the job, enter **sub** on the command line, and then press the Exit key (F3) to return to the CICS PA panel.
7. Check the results of the load job. In SDSF, list the data sets for the job, and then browse the data set named HDBLnnnn: this contains the "HDB LOAD Recap Report", which describes the success or failure of the load.

If you did not select Load DB2 Table option, only the HDB is loaded at this point. You will need to export the data in the HDB to DB2 tables.

## Export to DB2

1. On the **Historical Database** menu, select option **5 Export**.  
The list of HDBs appears.
2. Select the HDB that you want to export.  
The **Export HDB** panel appears, showing the list of container data sets for the selected HDB:

```

File Options Help
-----
Export SUMMARY HDB - EXPLORE5          Row 1 to 1 of 1
Command ==> _____ Scroll ==> PAGE

Select to export HDB data sets to DB2.

HDB Name . . : EXPLORE5      Type . . : SUMMARY

Data Set Name          ----- Start ----- Volume
USER.EXPLORE5.D05332.T180224.HDB      2009/02/20 00:05:00 DB0037
***** Bottom of data *****

```

3. Enter **S** next to the container data sets whose data you want to export.  
An HDB can consist of several data sets. You can export from one or more container data sets.

The **Export HDB Data Set** panel appears:

```

File Options Help
-----
Export HDB Data Set

Command ==> _____

HDB Name . . . : EXPLOR5P
Data Set Name . : USER.EXPLORE5.D05332.T180224.HDB

Select option
1 1. Create DDL to define table      2. Load data into table

Create Options                      Load Options
_ Create Database                    1 1. Resume
_ Create Storage Group              2. Replace

DB2 Settings:
DB2 Subsystem ID . . . DH2C
DSNTIAD Plan Nam e . . DSNTIA91
DB2 Load Library . . . 'DB2.V9I0.SDSNLOAD'
DB2 Exit Library . . . 'DB2.V9I0.SDSNEXIT'
DB2 RUNLIB Library . . 'DSN910.RUNLIB.LOAD'
Database . . . . . FGS187FC  Storage Group . . SYSDFLT
VCAT Catalog name . . DB2CAT  Volume . . . . .
Allocation: Primary 10 Secondary . . . . 5

Include Clock Field Components      Summary Options
1 1. Time and Count                  _ Include Sums of Squares
_ 2. Time only
_ 3. Count only

```

4. Contact your DB2 administrator for your local DB2 settings, and then type the values into the panel.

Exporting an HDB to DB2 is a two-step process. First, you use this panel to create and submit JCL that defines the DB2 tables (and, optionally, the database and storage group) that will contain the exported data. Second, you use the panel to create and submit JCL that loads data into the tables.

You only need to define the DB2 tables, database and storage group once. If these are already defined, go to step 9.

5. If the DB2 table has not already been created, select the option “Create DDL to define table”. If the database or storage group that you want to export to do not yet exist, then select the options to create those, too.

For a Performance HDB, ensure that Include Clock Field Components is set to 1 (Time and Count), and Summary Options is not selected (blank).

6. Press Enter. The panel prompts you to press Enter again to proceed.

Press Enter again. An edit panel appears, containing JCL to create the required DB2 tables.

**What DB2 tables will this define?** For a performance HDB, CICS PA defines a DB2 table with the following name:

*qualifier.CPA\_CMFPSUM*

For a Performance List HDB that includes an alert definition, an additional DB2 table is created with the following name:

*qualifier.CPA\_CMFPSUM\_ALERT*

For a statistics HDB, CICS PA defines one DB2 table for each STID, with the following name:

*qualifier.CPA\_stid*

For a Performance HDB, the generated JCL includes a step to create a DB2 view for use by the CICS PA plug-in.

7. Enter **sub** to submit the JCL, and then press the Exit key (F3) to return to the CICS PA panel.
8. Check the SYSPRINT file in the job output queue, to confirm that the tables were successfully defined.
9. In the CICS PA panel, select the option "Load data into table".  
For a Performance HDB, ensure that Include Clock Field Components is set to 1 (Time and Count), and Summary Options is not selected (blank).  
The JCL to perform the load appears in an edit panel.
10. Enter **sub** on the command line to submit the job, and then press the Exit key (F3) to return to the CICS PA panel.

## Extract performance data to CSV

This task describes how to create CSVs using HDBs. However, CSVs can also be created by using the Performance Extract report within Report Sets.

1. On the **Historical Database** menu, select option **6 Extract**.

The list of HDBs appears.

2. Select the HDB that you want to export.

The **Run SUMMARY HDB Extract** pop-up window appears:

Run SUMMARY HDB Extract - EXPLORE4

Command ==> \_\_\_\_\_

Specify Extract request options then press Enter to continue submit.

<p>____ Report Interval ____</p> <p>YYYY/MM/DD HH:MM:SS.TH</p>	<p>HDB contains data in the range:</p> <p>From _____ 2009/02/01 19:00</p> <p>To _____ 2009/02/03 23:00</p>	<p>Extract Recap:</p> <p>DDname . . . <u>HXTS0001</u></p>
--	--	---

Output Data Set:

Data Set Name . . 'USER.CICSPA.EXTRACT.CSV'

Disposition . . . 1 1. OLD 2. MOD (If cataloged)

Extract Format:

<p>Form . . . . . <u>EXPLORE4</u> +</p> <p>Delimiter . . . . . <u>,</u></p>	<p>Enter "/" to select option / Include Field Labels _ Numeric Fields in Float format</p>
---	---

Processing Options:

<p>Time Interval . . _____ (hh:mm:ss)</p> <p>Precision . . . . <u>4</u> (4-6)</p>	<p>Enter "/" to select option / Edit JCL before submit</p>
---	--

3. Fill in the fields on the panel.

In the Form field, press **Prompt** (F4) to select a compatible report form.  
Example: select EXPLORE5 if you are using the CICS PA plug-in on CICS TS V5.1.

If the required EXPLORE $n$  form is not defined, select Samples in the action bar of the Report Forms panel to add the samples to your Report Forms data set.

Press Enter to submit the extract job.

#### 4. Tips for extracting CSV files

- A quick way to extract all data in the HDB is to leave the “from” and “to” dates and times blank.
  - To use the CSV file on a PC with the CICS PA plug-in:
    - Specify a comma (,) as the delimiter character, not the CICS PA default semicolon (;).
    - Include field labels.
    - Do not select the (z/OS host-specific) float format for numeric fields.
5. Transfer the CSV file to your PC as an ASCII text file with file extension .csv.

## Loading CSV data in the CICS PA plug-in

You can load CSV data in the CICS PA plug-in in three ways: using copy and paste, by dragging and dropping, or using the import function of the CICS PA plug-in.

**Note:** Using an application other than the CICS PA plug-in to make changes to the CSV file might cause errors and make the data unusable by the CICS PA plug-in.

Locate the performance data file that you want to analyze and follow one of these methods load the data into the CICS PA plug-in:

### Using copy and paste

You can copy and paste a file into the CICS PA plug-in by performing the following steps:

1. Copy the data file by right-clicking and selecting **copy** from the menu.
2. In the Project Explorer view, select the folder where you want to store the data.
3. Right-click and select **paste** from the menu.

A copy of the data file is now in the CICS PA plug-in and available for analysis.

For further information on loading data and other Eclipse functions, see the Eclipse Workbench User Guide.

### Using drag and drop

You can drag a file from your file manager and drop it into the CICS PA plug-in by performing the following steps:

1. In your file manager, select the data file.
2. Hold down the left mouse button, and drag the file across to the Project Explorer view.
3. Still holding the left mouse button, place the cursor over the folder where you want to store the data file.
4. Release the button.

A copy of the data file is now in the CICS PA plug-in and available for analysis.

### Using the Import function.

You can import a file into the CICS PA plug-in from your local file system using the Eclipse import function:

1. Right-click anywhere in the white space of the Project Explorer view and select **Import**.
2. In the **Import** window, click **General > File System**. To assist in locating the file system, you can type **File System** in the text field. Click **Next**.
3. In the Import wizard, enter the directory path of the data, or click **Browse** and select the directory from the list. All the files in the directory are displayed in the Import wizard.
4. Click the box next to the data file to be imported.
5. In the **Into folder** text box, type the name of the folder where the data will be stored, or click **Browse** and select the target from the list. Click **Finish**.

A copy of the data file is now in the CICS PA plug-in and available for analysis.

---

## Access the data using the CICS PA plug-in

You can analyze performance data that is produced by CICS Performance Analyzer for z/OS and stored in a database such as DB2. You must connect to the database before you can analyze the data, to do this you must create a credential, a set of information that you use to authenticate a connection to the CICS PA plug-in.

### Before you begin

See the topic *Defining connection credentials* in the CICS Explorer User Guide for further information.

You must have your database connection details, the correct level of authorization, and be connected to your company's network.

**Note:** System connections can now be secured using the SSL protocol. For more information, see *Using SSL security for Explorer connections*, and *Managing SSL security and certificates*.

### Procedure

1. Click **Window > Manage connections**.
2. In the Host Connections view, select Performance Analyzer and click **Add**. The Add Performance Analyzer Connection dialog opens.

3. Complete the fields with the details provided by your system administrator:

Option	Description
Name	The local name used to identify this database connection. The name can be anything you choose and is used to help you distinguish between different database connections.
Host name	The TCP/IP host name of your database server.
Port Number	The port used to access the server. By default, DB2 on z/OS® listens for connections on port 448.
Secure connection (TLS/SSL)	Select this field if the connection uses SSL security.
DB2 Location	The name of the DB2 location on the server.
DB2 Schema (Qualifier)	The name of the schema used for the database.

4. Click **Save and Close** to save the configuration without connecting or Click **Save and Connect** to save the configuration and connect immediately.
5. If you chose to connect immediately, you will need to select your user credentials.

## What to do next

When you click **Connect**, the CICS PA plug-in attempts to connect to the database you have configured. If you did not previously enter your password in your credential settings, you are asked to enter it now.

If the connection is successful, a message is displayed in the CICS Explorer status bar and the connection icon is green. You can now select data for analysis.

If the connection is not successful, an error message is displayed in the CICS Explorer status bar providing a reason for the failure. Check the values in the fields, correct any errors, and click **Connect** to retry the connections.



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## **Part 2. Specifying CICS-related SMF data for reporting**

CICS Performance Analyzer for z/OS processes SMF data to produce reports and extracts and build historical databases. The chapters in this part provide an overview of the SMF data that CICS PA processes, and describe how to specify to CICS PA your SMF data files, CICS and related systems and groups.



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## Chapter 5. SMF data used by CICS PA

CICS PA produces reports and extracts using data normally collected by your system in MVS System Management Facilities (SMF) data sets and log streams:

**SMF 110, subtype 1**

CICS Monitoring Facility (CMF) performance class, exception class, and transaction resource class records

**SMF 110, subtypes 2, 3, 4, 5**

CICS statistics and server statistics records

**SMF 111**

CICS Transaction Gateway statistics

**SMF 101**

DB2 accounting records

**SMF 116**

WebSphere MQ accounting records

**SMF 112**

OMEGAMON XE for CICS records

**SMF 88**

System Logger records

Most CICS PA reports and extracts process CMF data. The DB2 report processes both CMF data and DB2 accounting data. The WebSphere MQ report processes only MQ accounting data. The CICS TG reports process only CICS TG statistics data. The OMEGAMON report processes only OMEGAMON XE for CICS data. The Record Selection extract processes all of the SMF record types listed in this topic. The System Logger report and extract process only System Logger data.

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### CICS Monitoring Facility data (SMF 110, subtype 1)

When CICS is running and the CICS Monitoring Facility (CMF) is active, data is collected by CMF and written to the MVS System Management Facilities (SMF) data set as type 110 records, subtype 1. The CMF data is subsequently analyzed offline by CICS PA.

#### Classes of CMF data

There are three types, or “classes”, of monitoring data that you can request CMF to collect: performance class, exception class, and transaction resource class data.

You can switch CICS monitoring on or off, and change the classes of data being collected, either at CICS initialization or dynamically while CICS is running. It is preferable to start all classes of monitoring data at CICS initialization. If you activate a class of monitoring data while CICS is running, the data for that class becomes available only for transactions that are started thereafter.

CICS PA analyzes three classes of CMF data:

- **Performance class data.** Detailed transaction-level information, such as the processor and elapsed time for a transaction, or the time spent waiting for I/O. There is at least one performance record per transaction.

- **Exception class data.** Information about exceptional conditions suffered by a transaction, such as queuing for file strings, or waiting for temporary storage. This data highlights possible problems in system operation. There is one exception record for each exception condition.
- **Transaction resource class data.** Additional transaction-level information about individual Files and Temporary Storage Queues used by a transaction.

## Performance Class data

Performance class data provides detailed resource-level data that can be used for accounting, performance analysis, and capacity planning. This data contains information relating to individual task resource usage, and is completed for each task when the task terminates. This information could be used periodically to calculate the charges applicable to different tasks. If you want to set up algorithms for charging users for resources used by them, you could use this class of data collection to update the charging information in your site's accounting programs.

CMF collects performance class data at system-defined event-monitoring points (EMPs) in the CICS code. You cannot relocate these EMPs, but you can add additional ones in your application programs using the EXEC CICS MONITOR command (see the *CICS Application Programming Reference* for programming information about this command). For example, you could use additional EMPs to count the number of times a certain event occurs, or to time the interval between two events. Additional EMPs are also provided in some IBM licensed products, such as IMS DBCTL.

For each EMP that you code in an application program, you must code a corresponding definition in the Monitoring Control Table (MCT) using DFHMCT TYPE=EMP. In the MCT, you can also use DFHMCT TYPE=RECORD to *exclude* specific system-defined performance data from a CICS run. See the *CICS Resource Definition Guide* for details of the DFHMCT macros.

Performance data records are written to a CICS performance record buffer and not passed to SMF until the buffer is full, performance class monitoring is switched off, or CICS quiesces. If CMF is deactivated or there is an immediate shutdown of CICS, the records in the buffer not yet written to SMF are lost.

You can enable performance class monitoring in either of the following ways:

- At CICS initialization. Specify MNPER=ON (together with MN=ON) in the SIT.
- Dynamically when CICS is running. Use either:
  - Master terminal command:  
CEMT SET MONITOR ON PERF
  - API command from within an application program:  
EXEC CICS SET MONITOR STATUS(ON) PERFCLASS(PERF)

## Exception Class data

CMF passes an exception record directly to SMF when any of the following exception conditions encountered by a transaction is resolved:

- Wait for storage in the CDSA
- Wait for storage in the UDSA
- Wait for storage in the SDSA
- Wait for storage in the RDSA
- Wait for storage in the ECDSA
- Wait for storage in the EUDSA
- Wait for storage in the ESDSA

- Wait for storage in the ERDSA
- Wait for storage in the GCDSA
- Wait for auxiliary temporary storage
- Wait for auxiliary temporary storage string
- Wait for auxiliary temporary storage buffer
- Wait for auxiliary temporary storage write buffer
- Wait for temporary storage queue
- Wait for temporary storage data set extension
- Wait for shared temporary storage
- Wait for shared temporary storage pool
- Wait for coupling facility data tables locking (request) slot
- Wait for coupling facility data tables non-locking (request) slot
- Wait for file buffer
- Wait for LSRPOOL string
- Wait for file string

An exception record is created each time any of the resources covered by CMF exception class monitoring becomes constrained by system bottlenecks. If performance data is also being recorded, it keeps a count of the number of exception records generated for each task and also the total time that the task was delayed due to encountering a resource shortage. The exception records can be linked to the performance data by the transaction identifier in the TASKNO and NETUOW fields in each type of record.

This data is intended to help you identify constraints that affect the performance of your transaction. The information is written to the SMF data set as soon as the task that was originally constrained has been released.

You can enable exception class monitoring in either of the following ways:

- At CICS initialization. Specify MNEXC=ON (together with MN=ON) in the SIT.
- Dynamically when CICS is running. Use either:
  - Master terminal command CEMT SET MONITOR ON EXCEPT
  - API command from within an application program EXEC CICS SET MONITOR STATUS(ON) EXCEPTCLASS(EXCEPT)

## Transaction Resource Class data

Transaction resource class data provides additional transaction-level information about individual Files and Temporary Storage Queues used by a transaction.

The maximum number of files and temporary storage queues monitored for each transaction is limited by the FILE and TSQUEUE parameters on the DFHMCT TYPE=INITIAL macro, up to a maximum of 64 files and 64 temporary storage queues. The default is FILE=8 for files and TSQUEUE=8 for temporary storage queues. Therefore, you might need to assemble an MCT that specifies either or both FILE and TSQUEUE options if the default values are insufficient, or if you do not want to collect transaction resource data for either files or temporary storage queues. One transaction resource record is written for each transaction that is being monitored, provided the transaction accesses at least one of the resources for which monitoring data is requested, (for example, at least 1 file if you specify FILE=*number*).

Performance class data also provides information about file and temporary storage queue resource accesses, but this information in the performance record is given in total only for all files (see DFHFILE fields) and all temporary storage queues (see DFHTEMP fields). Transaction resource data breaks this information down by

individual file name and temporary storage queue name, up to the maximum number specified in the MCT. It also provides elapsed times for the File Control and Temporary Storage Control events.

Transaction resource information is completed for each task when the task terminates.

You enable transaction resource class monitoring in either of the following ways:

- At CICS initialization. Specify MNRES=ON (together with MN=ON) in the SIT.
- Dynamically when CICS is running. Use either:
  - Master terminal command:  
CEMT SET MONITOR ON RESRCE
  - API command from within an application program  
EXEC CICS SET MONITOR STATUS(ON) RESRCECLASS(RESRCE)

## When CMF data is passed to SMF

The different classes of CICS monitoring records are not written to SMF in the same way:

- **Performance data records** are written to a performance record buffer, which is defined and controlled by CICS, as the records are produced. The performance records are passed to SMF for processing when the buffer is full, when the performance class of monitoring is switched off, and when CICS itself quiesces. When monitoring itself is deactivated or when there is an immediate shutdown of CICS, the performance records are not written to SMF and the data is lost.
- **Exception data records** are passed directly to SMF when the exception condition completes. Each exception record describes one exception condition. You can link performance records with their associated exception records by matching the transaction identification number (TASKNO field) or network unit-of-work ID (NETNAME and NETUOWSX fields) in each type of record.
- **Transaction resource data records** are written to a transaction resource record buffer, which is defined and controlled by CICS, as the records are produced. The transaction resource records are passed to SMF for processing when the buffer is full; when the transaction resource class of monitoring is switched off; and when CICS itself quiesces. When monitoring itself is deactivated or when there is an immediate shutdown of CICS, the transaction resource records are not written to SMF and the data is lost.

## Controlling the CICS Monitoring Facility

When CICS is initialized, you can switch the CICS monitoring facility on by specifying the system initialization parameter MN=ON. The default setting is MN=OFF. You can also select the classes of monitoring data that you want to be collected using the MNPER, MNEXC, and MNRES system initialization parameters. You can request any combination of performance class, exception class, and transaction resource class data. The class settings can be changed whether monitoring itself is ON or OFF. For more information about the monitoring system initialization parameters, see the *CICS System Definition Guide*.

When CICS is running, you can control the CICS monitoring facility dynamically. Just as at CICS initialization, you can switch monitoring on or off, and you can change the classes of monitoring data that are being collected. There are two ways of doing this:

1. You can use the master terminal CEMT INQUIRE and SET MONITOR command, which is described in the *CICS Supplied Transactions*.

2. You can use the EXEC CICS INQUIRE and SET MONITOR commands; programming information about these commands can be found in the *CICS System Programming Reference*.

When you activate a class of monitoring data, data is collected only for transactions that start thereafter, not transactions already active. You cannot change the classes of monitoring data collected for a transaction after it has started. It is often preferable, particularly for long-running transactions, to start all classes of monitoring data at CICS initialization.

## Event Monitoring Points

CICS monitoring data is collected at system-defined event monitoring points (EMPs) in the CICS code. Although you cannot relocate these monitoring points, you can choose which *classes* of monitoring data that you want to be collected. Programming information about CICS monitoring can be found in the *CICS Application Programming Reference* and the *CICS Customization Guide*.

If you want to gather more performance class data than is provided at the system-defined event monitoring points, you can code additional EMPs in your application programs, from within task-related user exits, or from global user exits. At these points you can add or change up to 16384 bytes of user data within each performance record. Up to this maximum of 16384 bytes you can have, for each ENTRYNAME qualifier, any combination of the following data:

- Between 0 and 256 counters
- Between 0 and 256 clocks
- A single 8196-byte character string

You could use these additional EMPs to count the number of times a certain event occurs, or to time the interval between two events. If the performance class was active when a transaction was started, but was not active when a user EMP was issued, the operations defined in that user EMP would still run on that transaction's monitoring area. The DELIVER option would result in a loss of data at this point, because the generated performance record cannot be output while the performance class is not active. If the performance class was not active when a transaction was started, the user EMP would have no effect.

User EMPs can use the EXEC CICS MONITOR command. For programming information about this command, see the *CICS Application Programming Reference*.

Additional EMPs are defined in some IBM licensed products, such as IMS DBCTL. From the CICS point of view, these are like any other user-defined EMP. EMPs in user applications and in IBM licensed products are defined by a decimal number. The numbers 1 through 199 are available for EMPs in user application, and the numbers from 200 through 255 are for use in IBM licensed products. In addition, the numbers can be qualified with an *entry name* so that you can use each number more than once. For example, PROGA.1, PROGB.1 and PROGC.1, identify three different EMPs because they have different entry names.

For each user-defined EMP there must be a corresponding monitoring control table (MCT) entry, which has the same entry name and identification number as the EMP that it describes.

You do not have to assign entry names and numbers to system-defined EMPs, and you do not have to code MCT entries for them.

Here are some ideas about how you might make use of user fields provided using the CICS monitoring facility:

- If you want to time how long it takes to do a table lookup routine within an application, code an EMP with, say, ID=50 just before the table lookup routine and an EMP with ID=51 just after the routine. The system programmer codes a TYPE=EMP operand in the MCT for ID=50 to start user clock 1. You also code a TYPE=EMP operand for ID=51 to stop user clock 1. The application then runs. When EMP 50 is processed, user clock 1 is started. When EMP 51 is processed, user clock 1 is stopped.
- One user field could be used to accumulate an installation accounting unit. For example, you might count different amounts for different types of transaction. Or, in a browsing application, you might count 1 unit for each record scanned and not selected, and 3 units for each record selected.

You can also treat the fullword count fields as 32-bit flag fields to indicate special situations, for example, out-of-line situations in the applications, operator errors, and so on. The CICS monitoring facility includes facilities to turn individual bits or groups of bits on or off in these count fields.

- The performance clocks can be used for accumulating the time taken for some sort of I/O operation. This is usually any waiting time for the transaction to regain control after the requested operation has completed. Because periods are counted as well, you can get the average time waiting for the I/O operation as well as the total waiting time. If you want to highlight an unusually long individual case, set a flag on in a user count as explained in the previous item.
- One use of the performance character string is for systems in which one transaction ID is used for widely differing functions. The application can enter a subsidiary ID into the string to indicate which particular variant of the transaction applies in each case.

Some users have a single transaction ID so that all user input is routed through a common prologue program for security checking or some other purpose, for example. In this case, it is very easy to record the subtransaction identifier in this prologue. (However, it is equally possible to route transactions with different identifiers to the same program, in which case this technique is not necessary.)

## Application Naming and Event Monitoring Points

You can also use application naming event monitoring points. Application naming is an enabling function that allows your application programs to invoke special CICS event monitoring points. These special EMPs allow you to include additional task identification information (an alternative Transaction ID and Program name) in your CMF performance records.

You can use the application naming EMPs that are generated for you automatically when you specify APPLNAME=YES in the DFHMCT TYPE=INITIAL macro. The generated data is:

- The application naming Transaction ID, taken from the first 4 bytes of the 12 byte APPLNAME field.
- The application naming Program name, taken from the last 8 bytes of the 12 byte APPLNAME field.

For information about the APPLNAME parameter that you use to enable application naming support, see the *CICS Resource Definition Guide*.

## The Monitoring Control Table (MCT)

The monitoring control table (MCT) is used to tell CICS:



- The type of resource for which you want to collect transaction resource monitoring data. Available resource types are Files and Temporary Storage Queues (see “DFHMCT TYPE=INITIAL”).
- To enable application naming support, which makes available the CICS-generated DFHAPPL EMPs to your application programs (see “DFHMCT TYPE=INITIAL”).
- About any user event monitoring points (EMPs) that you have coded in your application programs and the data that is to be collected or manipulated at these points (see “DFHMCT TYPE=EMP”).
- That you want certain CICS system-defined performance class data fields to not be recorded by CICS (see “DFHMCT TYPE=RECORD”).

IMS DBCTL users can collect DBCTL statistics in the CMF performance class records by including the DFH\$MCTD copy member in the MCT definition.

Full details of the MCT are provided in the *CICS Resource Definition Guide*. Examples of MCT coding are included with the programming information in the *CICS Customization Guide*.

### DFHMCT TYPE=INITIAL

You use the DFHMCT TYPE=INITIAL macro to indicate whether you want application naming support and transaction resource monitoring.

For information about the APPLNAME, FILE and TSQUEUE parameters that control these facilities, see the *CICS Resource Definition Guide*.

### DFHMCT TYPE=EMP

There must be a DFHMCT TYPE=EMP macro definition for each user-code event monitoring point (EMP). This macro has an ID operand, whose value must be made up of the ENTRYNAME and POINT values specified on the EXEC CICS MONITOR command. The PERFORM operand of the DFHMCT TYPE=EMP macro defines to CICS for the specified user EMP, the user fields (counts, clocks or characters) and the operations that CICS is to perform on them when the user event monitoring point is invoked.

### DFHMCT TYPE=RECORD

The DFHMCT TYPE=RECORD macro allows you to *exclude* specific system-defined performance class data fields from a CICS run. Table 1 shows the default length of the performance class monitoring records for each CICS release supported by CICS PA, without taking into account any user data that can be added, or any excluded fields.

*Table 1. Default performance record length by CICS TS for z/OS release*

CICS TS release	Record length
3.1	1848 bytes
3.2	2352 bytes
4.1	2672 bytes
4.2	2960 bytes
5.1	3260 bytes

Each field of the performance class data that is gathered at the system-defined EMPs belongs to a group of fields that has a specific group identifier. Each

performance data field also has its own numeric identifier that is unique within the group identifier. For example, the transaction sequence number field in a performance class record belongs to group DFHTASK, and has a numeric identifier of 031. Using these identifiers, you can exclude specific fields or groups of fields, and reduce the size of the performance class records.

### Sample MCTs

Four sample monitoring control tables are provided in the CICS sample library:

**DFHMCTT\$**

For terminal-owning regions (TORs)

**DFHMCTA\$**

For application-owning regions (AORs)

**DFHMCTD\$**

For application-owning regions (AORs with DBCTL)

**DFHMCFT\$**

For file-owning regions (FORs)

These samples show how to use the EXCLUDE and INCLUDE operands to reduce the size of the performance class record, reducing the volume of data that CICS writes to SMF.

## Required CMF fields for CICS PA

If you are using the CICS Monitoring Control Table (MCT) EXCLUDE/INCLUDE parameters to reduce the size of the performance class record, you must ensure that the data fields required for some of the CICS PA reports and extracts are not excluded. These reports and extracts are:

- Cross-System Work report and extract
- Transaction Group report
- BTS report
- Workload Activity report
- Transaction Tracking List report
- Transaction Tracking Summary report
- DB2 report

See the *CICS Performance Analyzer for z/OS Report Reference* for the list of required CMF fields for each of these reports.

---

## CICS Statistics data (SMF 110, subtypes 2, 3, 4, 5)

When CICS is running, statistics data is written to the SMF data set as type 110 records with the following subtypes:

- |   |   |
|---|---|
| 2 | Statistics                                      |
| 3 | Shared Temporary Storage Server Statistics      |
| 4 | Coupling Facility Data Table Server Statistics  |
| 5 | Named Counter Sequence Number Server Statistics |

Statistics data is subsequently analyzed offline by CICS PA.

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## CICS Transaction Gateway Statistics data (SMF 111)

You can configure CICS Transaction Gateway for z/OS to write statistics data to the SMF data set as type 111 records.

Statistics data is subsequently analyzed offline by CICS PA.

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## DB2 accounting data (SMF 101 records)

DB2 accounting data is processed by the CICS PA DB2 report and Record Selection extract. DB2 accounting data is written by DB2 as SMF type 101 records.

### DB2 accounting trace

The DB2 accounting trace provides information related to application programs, including:

- Start and stop times
- Number of commits and aborts
- Number of times certain SQL statements are issued
- Number of buffer pool requests
- Counts of certain locking events
- Processor resources consumed
- Thread wait times for various events
- RID pool processing
- Distributed processing
- Resource limit facility statistics

The DB2 accounting trace begins collecting this data at successful thread allocation to DB2. It writes a completed record when the thread terminates or when the authorization ID changes.

DB2 accounting records are produced when a thread is terminated or sign-on occurs. This means that the period reported in the DB2 accounting record is the time between start or user sign-on (if reusing a thread previously used by another user) and thread termination or another sign-on. You can use the ACCOUNTREC(TXID) parameter in the DB2ENTRY or DB2CONN to cause a DB2 accounting record to be produced when the transaction ID changes, and when the thread terminates or another sign-on occurs.

For thread reuse, this means that many users are included in the same record, which can cause difficulties for both accounting and problem determination. The ACCOUNTREC(TASK) or ACCOUNTREC(UOW) settings in a DB2ENTRY or DB2CONN provide more granularity. This is because a record is produced for each user. It involves the passing of a token between CICS and DB2, which is present in both CICS and DB2 traces. ACCOUNTREC(TASK) ensures that there is a minimum of one accounting record for each task. There can be more depending on thread reuse.

The CICS PA DB2 report only supports ACCOUNTREC(TASK) and ACCOUNTREC(UOW).

For more information about accounting and monitoring in a CICS DB2 environment, see the *CICS DB2 Guide*. For more information about setting up DB2 accounting, see the *DB2 UDB for OS/390® and z/OS Administration Guide*.

### Accounting for processor usage in a CICS DB2 environment

The processor times reported in the DB2 accounting records are the TCB time for the thread TCB running code in CICS or in the DB2 address space, using cross-memory services; and the SRB time for work scheduled in CICS.

The DB2 accounting trace can be started with CLASS 1, CLASS 2, or CLASS 3. However, CLASS 1 must always be active to externalize the information collected by activating CLASS 2, CLASS 3, or both classes. CLASS 1 (the default) results in

accounting data being accumulated by several DB2 components during normal execution. This data is then collected to write the DB2 accounting record. The data collection does not involve any overhead of individual event tracing. CLASS 2 and CLASS 3 activate many additional trace points. Every occurrence of these events is traced internally, the additional total statistics computed and written to the DB2 accounting record.

For accounting CLASS 1, a task processor timer is created when the task control block (TCB) is attached. When a thread to DB2 starts, the timer value is saved. When the thread is terminated (or the authorization ID is changed), then the timer is checked again. Both the timer start and end values are recorded in the DB2 accounting record.

For accounting CLASS 2, the timer is checked on every entry and exit from DB2 to record the 'IN DB2' time in the DB2 accounting record. In this case, it is the difference that is stored in the record.

For accounting CLASS 3, the I/O elapsed time and lock and latch suspension time spent 'IN DB2' are collected and written to the DB2 accounting record.

---

## WebSphere MQ accounting data (SMF 116 records)

WebSphere MQ accounting data is processed by the CICS PA WebSphere MQ report and Record Selection extract. MQ accounting data is written by WebSphere MQ as SMF type 116 records.

### Accounting for processor usage in a CICS MQ environment

WebSphere MQ accounting information can be collected for three subtypes:

- 0 Message manager accounting records (how much of the central processing unit (CPU) was spent processing WebSphere MQ API calls and the number of MQPUT and MQGET calls). This information is produced when a named task disconnects from WebSphere MQ. The information contained within the record might cover many hours.
- 1 Accounting data for each task, at thread and queue level.
- 2 Additional queue-level accounting data (if the task uses more queues than can fit in the subtype 1 record).

Subtype 0 is produced with trace class 1. Subtypes 1 and 2 are produced with trace class 3.

### MQ accounting trace

You can start the WebSphere MQ trace facility at any time by issuing the WebSphere MQ START TRACE command.

Accounting data can be lost if the accounting trace is started or stopped while applications are running. To collect accounting data successfully, the following conditions must apply:

- The accounting trace must be active when an application starts. It must still be active when the application finishes.
- If the accounting trace is stopped, any accounting data collection that was active stops.

You can also start collecting some MQ accounting data automatically if you specify YES in the SMFACCT (SMF ACCOUNTING) parameters of the CSQ6SYSP macro.

You cannot use this method to start collecting class 3 accounting information (thread-level and queue-level accounting). You must use the START TRACE command to do this. However, you can include the command in your CSQINP2 input data set so that the trace is started automatically when you start your queue manager.

For more information about setting up WebSphere MQ accounting, see the *WebSphere MQ for z/OS System Setup Guide*, SC34-6052.

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## OMEGAMON XE for CICS data (SMF 112 records)

OMEGAMON XE for CICS data is processed by the CICS PA OMEGAMON report and the Record Selection extract. OMEGAMON XE for CICS writes this data as SMF type 112 records.

For more information about these records, see the *IBM Tivoli OMEGAMON II for CICS Configuration and Customization Guide*, GC32-1981.

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## System Logger data (SMF 88 records)

System Logger data is processed by the CICS PA System Logger report. The MVS System Logger writes SMF type 88 records to record the System Logger activity of a single system in a sysplex. For capacity planning purposes, we recommend that you view the steady-state performance requirements of an application. Various flags in the SMF type 88 record highlight exception scenarios for additional analysis or changes in report processing.

Record type 88 focuses on the logstream data for a system in a sysplex, including use of interim storage. Interim storage is where log data is initially written, before being written to direct access storage device (DASD) log data sets. You can quickly access data in interim storage without incurring DASD I/O. In a coupling facility logstream, interim storage for log data is in coupling facility list structures. In a DASD-only logstream, interim storage for log data is contained in local storage buffers on the system and duplexed to staging data sets. Using record type 88 can help an installation avoid the STRUCTURE FULL exception, and perform other tuning, capacity planning analysis, or both.

Given a specific logstream, a record type 88 summarizes all of that logstream's activity on that system, as long as at least one address space is connected to the logstream on that system. If no System Logger write activity is performed on the logstream during a particular SMF interval, a record is produced showing zero for the various System Logger activity total fields.

The System Logger SMF record is cut for all logstreams connected at the expiration of the SMF global recording interval. Record type 88 is also triggered by the disconnection of the last logstream on that system.

SMF fields relating to resource events, either structure full or staging data set full conditions, should be handled depending on:

- Whether the resource is shared sysplex-wide and each system will take action
- Whether the resource is shared sysplex-wide but only one system will take action
- Whether the resource is consumed on a system-local basis

To obtain a sysplex-wide view of System Logger activity, correct processing for most SMF 88 data fields is to sum the field contents for the target interval across all the SMF 88 records produced in the sysplex. There are, however, exceptions to this rule. Because each system must take its own action — that is, wait for an ENF signal indicating that System Logger is available — an analysis program should use the maximum value for these fields: SMF88ERI, SMF88ERC, and SMF88ESF. For example, if a structure rebuild is initiated in a sysplex with three systems, the event is recorded on all three systems. The correct number of structure rebuild initiations is not three, but one or the maximum number provided SMF88ERI.

For DASD-only logstreams, staging data sets are a required part of the logstream configuration. For coupling facility logstreams, use of staging data sets implies a trade-off between performance workload and data integrity. You should try to tune the staging data set size to minimize the number of Staging\_Dataset\_Threshold\_Hit conditions. Without this type of tuning, such conditions can impact performance during staging data set processing. Only an installation can determine what the proper trade-off between performance and data integrity should be.

Because System Logger maintains interim storage differently for coupling facility based logstream versus DASD-only logstreams, the difference is reflected in the SMF record 88 report:

- For a coupling facility based logstream, the Structure (Interim Storage) section of the record 88 report shows information about the usage of coupling facility structure space allocated for a logstream and the flow of log data through the structure.
- For a DASD-only logstream, the Structure (Interim Storage) section of the record 88 report shows information about usage of staging dataset space and the flow of data through the staging data set for the logstream.

Not all fields in the Structure (Interim Storage) section of the record 88 report apply to DASD-only logstreams. For a DASD-only logstream, fields that do not apply contain zeros. The SMF88STN field contains \*DASDONLY\* for a DASD-only log stream because there is no structure name.

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## Preparing SMF data for CICS PA processing

CICS PA processes non-active SMF data sets. There is no special preparation required for CICS PA other than to dump the active data sets into non-VSAM data sets at an appropriate time. Then define these output data sets to CICS PA as the input data sets for report processing.

### Unloading SMF records

After all the SMF data from the CICS region is on the active SMF data set, you need to dump this data to an inactive SMF data set. First you switch the recording of SMF data from one data set to another. All SMF data in storage is written out before the transfer is made. This switch is performed by issuing the /I SMF operator command. The switch of SMF data sets takes place automatically when the active SMF data set becomes full.

To dump the SMF data set, use the SMF dump program (IFASMFDP). This program transfers the contents of the active SMF data set to an output data set, then resets the status of the dumped data set to ALTERNATE so that SMF can use it again for recording data. For more information about the IFASMFDP program, see the *z/OS MVS System Management Facilities (SMF)*.



The sample job shown in Figure 11 is an example of using the SMF program IFASMFDP to unload SMF records for offline processing by CICS PA.

```
//SMFJOB   JOB (Job Accounting)
//SMFDUMP  EXEC PGM=IFASMFDP,REGION=0M
//INDD1    DD DSN=SYS1.MV2C.MANA,DISP=SHR,AMP=('BUFSP=131072')
//INDD2    DD DSN=SYS1.MV2C.MANB,DISP=SHR,AMP=('BUFSP=131072')
//INDD3    DD DSN=SYS1.MV2D.MANA,DISP=SHR,AMP=('BUFSP=131072')
//INDD4    DD DSN=SYS1.MV2D.MANB,DISP=SHR,AMP=('BUFSP=131072')
//OUTDD1   DD DSN=CICS.CMF.DAILY(0),
           DISP=(MOD,CATLG),SPACE=(CYL,(25,5)),UNIT=SYSDA
//OUTDD2   DD DSN=CICS.TG.DAILY(0),
           DISP=(MOD,CATLG),SPACE=(CYL,(25,5)),UNIT=SYSDA
//OUTDD3   DD DSN=CICS.SMF.DAILY(0),
           DISP=(MOD,CATLG),SPACE=(CYL,(25,5)),UNIT=SYSDA
//SYSPRINT DD SYSOUT=A
//SYSIN    DD *
           INDD(INDD1,OPTIONS(DUMP))
           INDD(INDD2,OPTIONS(DUMP))
           INDD(INDD3,OPTIONS(DUMP))
           INDD(INDD4,OPTIONS(DUMP))
           OUTDD(OUTDD1,TYPE(110))
           OUTDD(OUTDD2,TYPE(111))
           OUTDD(OUTDD3,TYPE(88,101,112,116))
/*
//
```

Figure 11. Sample JCL using the SMF Unload utility

## CICS PA System Definitions and SMF Data Take-Up

Before you request CICS PA reports and extracts, you must first define the CICS systems (generic APPLIDs) on which you want to report. Depending on your reporting requirements, you also might need to define: DB2 subsystems; MQ subsystems; MVS System Loggers; and CICS systems for CICS Transaction Gateway. Then specify the SMF data sets for these systems (CICS, DB2, MQ, Logger) or the MVS System (Image) where they run, or both.

An easy way to do this is to let CICS PA create your system definitions by using the Take-up facility. This facility extracts the system details directly from the SMF files. For more information, see “Personal Take-Up from SMF File” on page 104.

If you use the Take-up facility with SMF files that contain only OMEGAMON XE for CICS (SMF 112) records, then the facility defines CICS systems only, because SMF 112 records do not contain information about other types of system. Also, these CICS system definitions will not specify a CICS version (VRM field); again, because the SMF 112 records do not contain this information.

If you use the Take-up facility with SMF files that contain CICS Transaction Gateway statistics (SMF 111) records, then the facility defines CICS systems for the CICS Transaction Gateway APPLIDs. CICS system definitions taken up from SMF 111 records have a blank VRM field value, because this field is for CICS Transaction Server versions, not CICS Transaction Gateway versions. If the Take-up facility finds CICS Transaction Server and CICS Transaction Gateway systems with the same APPLID, it creates a single CICS system definition with a VRM field value according to the first system it finds.

Optionally, you can then define groups of systems for reporting purposes. For example, systems that connect via interregion communication/multiregion operation (IRC/MRO), intersystem communication/advanced program-to-program communication (ISC/APPC), or internet protocol interconnectivity (IPIC).

## Dictionary records for CMF Performance Class data

A dictionary record holds definitional information about each data field in a performance class data record. It contains information for predefined CICS fields, and from any user fields in the Monitoring Control Table (MCT) specified for the CICS run.

When CICS monitoring is switched on, and you activate the monitoring performance class (MNPER=ON), CICS first writes a performance class dictionary record to the current SMF data set, and then begins to write the monitoring performance class data records. A new dictionary record, which always precedes the monitoring performance class data it relates to, is written whenever the user:

- Starts CICS with the performance class active, and CICS monitoring on.
- Changes the status of the monitoring performance class from inactive to active, with CICS monitoring on. If monitoring is off and the monitoring performance class is switched from inactive to active, a dictionary record is scheduled to be written the next time monitoring is activated.

However, if SMF switches data sets during the period when CICS monitoring is writing performance class data, CICS does not write a new dictionary record, and therefore a CICS performance dictionary record is not the first monitoring performance record on the new SMF data set.

### How CICS PA uses dictionary records

When processing performance class data, CICS PA requires a dictionary record that relates to the data being processed before attempting to analyze the data.

If the dictionary record is missing from the SMF data set, CICS PA can use the default dictionary record for the release of the CICS system being processed. This is usually adequate, so there is nothing more you need to do in this regard.

However if you want to report user fields, you must ensure that there is a matching dictionary record for the monitoring data for each APPLID that you want to process. You can use the CICS PA dialog to do this.

**Using CICS PA to create dictionary records:** You can use the CICS PA dialog to create a dictionary record when you define the CICS System (APPLID). Figure 19 on page 82 shows the CICS System panel where you can do this. Specify a dictionary data set name then select **Dictionary** in the action bar to write the dictionary record. CICS PA includes the dictionary data set in the report JCL in the **CPADICTR DD** statement.

**Order of precedence:** When processing performance class data, CICS PA might read more than one dictionary record. CICS PA applies the following order of precedence to determine the dictionary record to use to analyze the data:

1. SMF file
2. CPADICTR DD statement
3. Default

That is, if the SMF data set that contains the performance record being processed has a dictionary record, then CICS PA uses that dictionary record. CICS PA uses the last dictionary record read and disregards any previously read. If the dictionary record is missing, then CICS PA uses the dictionary record in the CPADICTR data set. If that too is missing, then CICS PA uses the default dictionary record for the release of the CICS system being processed.



## Using DFHMNDUP to create dictionary records

Alternatively, you can write your own job to create dictionary records. The remainder of this section describes how to do this using the CICS-supplied monitoring dictionary utility program, DFHMNDUP, to write a dictionary record for a specific APPLID to a sequential data set. This discussion on DFHMNDUP is included for historical interest only. *You do not need to do any of it, as CICS PA does it more appropriately.*

Figure 12 shows an example of using the dictionary utility program to create a dictionary record for APPLID CICSPROD.

```
//MNDUPJOB JOB (Job Accounting)
//MNDUP    EXEC PGM=DFHMNDUP,REGION=0M
//STEPLIB DD DSN=CICS.SDFHLOAD,DISP=SHR
//SYSUT4   DD DSN=userid.applid.MNDUPREC,DISP=(NEW,CATLG),
//          UNIT=SYSDA,SPACE=(TRK,(1,1))
//SYSPRINT DD SYSOUT=A
//SYSUDUMP DD SYSOUT=A
//SYSIN    DD *
MCT=NO
SYSID=MVS1
GAPPLID=CICSPROD
SAPPLID=CICSPROD
/*
//
```

Figure 12. Sample job stream to run the DFHMNDUP utility

### Note:

1. In addition to the CICS library containing the DFHMNDUP program, the STEPLIB concatenation must also include the library that contains any monitoring control table (MCT) that you specify on the MCT parameter.
2. The dictionary record is written to the data set specified by the SYSUT4 DD statement.
3. You might decide to keep a permanent dictionary data set, one for each CICS region, to hold the dictionary record. Specify the DISP parameter according to whether the data set already exists, or a new one is to be created and cataloged.
4. Control information for the DFHMNDUP program is provided in the SYSIN data set so that it can generate the correct dictionary record for the performance class data you are processing.

## Extracting and printing the dictionary records

A possible user error that results in CICS PA producing large numbers of messages or incomplete reports can be caused by inconsistencies between the dictionary records and its corresponding performance data records. This typically occurs when you create the dictionary records using the dictionary utility program, DFHMNDUP.

Figure 13 on page 68 shows a sample job that can be used to extract the dictionary records from the SMF input file(s) and then use the CICS supplied monitoring sample program DFH\$MOLS to print *only* the dictionary records.

```

//DICTPRNT JOB (Job Accounting)
//DICTCOPY EXEC PGM=SORT,REGION=0M
//SORTIN DD DSN=smf110.data.set.name,DISP=SHR
//SORTOUT DD DSN=&&TEMP,DISP=(NEW,PASS),UNIT=SYSDA,SPACE=(TRK,(5,2))
//DFSMSG DD SYSOUT=A
//SYSOUT DD SYSOUT=A
//SORTDIAG DD SYSOUT=A
//SYSIN DD *
OPTION COPY,VLSHRT
RECORD TYPE=V
INCLUDE COND=(6,1,FI,EQ,110,AND,
              23,2,BI,EQ,X'0001',AND,67,2,BI,EQ,X'0001')
END
/*
//MOLSPRNT EXEC PGM=DFH$MOLS,REGION=0M,COND=(5,LT,DICTCOPY)
//STEPLIB DD DSN=CICSTS23.CICS.SDHFLDAD,DISP=SHR
//INPUT DD DSN=&&TEMP,DISP=(OLD,DELETE)
//SYSOUT DD SYSOUT=A
//SYSPRINT DD SYSOUT=A,DCB=BLKSIZE=133
//SYSABEND DD SYSOUT=A,DCB=BLKSIZE=133
//SYSUDUMP DD SYSOUT=A,DCB=BLKSIZE=133
//SYSIN DD *
* Print the dictionary records only
PRINT DIC
* Disable the date/time sequence checking
TIMEOFF
/*
//

```

Figure 13. Sample job to extract and print the Dictionary records

In this example, the DFH\$MOLS program will abend with the following message:

```
IEF450I DICTPRNT MOLSPRNT - ABEND=S000 U0107 REASON=00000000
```

and the following message is printed at the end of the dictionary report produced by DFH\$MOLS:

```
NO MONITORING RECORDS WERE SELECTED FOR PROCESSING; REPORT IS TERMINATED
```

For more information on the dictionary utility program DFHMNDUP and the monitoring sample program DFH\$MOLS, see the *CICS Operations and Utilities Guide*.

---

## Chapter 6. Personal System Definitions

The systems and data files that you want to report against must be defined to CICS PA. The Personal System Definitions Menu provides options to do this. Typically your personal definitions are maintained by you and used by you for reporting. They are saved in your Personal Profile Library (CICS PA Settings). Shared System Definitions are typically maintained by a central administrator in the Repository and are used by all users for reporting.

To define your systems, files, and groups, select option 1 **Personal Systems** from the Systems menu. Alternatively, you can select **Systems** in the action bar of reporting panels, or enter **SYSDEFS** in the command line anywhere in the dialog.

---

### Personal System Definitions overview

Use **Personal System Definitions** to define your CICS (and other related) systems and their SMF files.

Before you can run reports using Personal System Definitions, you must first define the CICS and related systems that you want to report against. You can fast-track this process by using **Take-up**. Simply specify an SMF file that contains records from the systems that you want to report against, and CICS PA will create system definitions for you based on the records in that file.

To walk through an example of how to do this, see “Example: Working with Personal Systems” on page 107.

CICS PA uses your System Definitions when you:

1. Run (submit) your report requests.

At Report Set run time, CICS PA automatically generates JCL that includes:

- Report requests for the CICS (and other related) systems that you select
- DD statements for the required SMF files

2. Create a new Report Form.

The version of your CICS system determines which CMF fields are available for reporting and your MCT specification allows you to incorporate user fields into your reports.

3. Create Cross-System Work Extract data sets.

Your MCT specification allows you to incorporate user fields into your extracts.

System Definitions is a menu driven facility that allows you to:

1. Define your CICS and associated DB2, MQ and Logger **Systems** and define the **Images** (MVS systems) where they run
2. Maintain the **SMF files** that contain data for these systems
3. Define **Groups** that enable you to connect systems for consolidated reporting
4. Use **Take-up** to populate your System Definitions from an SMF file

To access this facility, select option 1 **Systems** from the Primary Option Menu, and then select option 1 **Personal Systems** from the Systems menu. When first invoked, the System Definitions Menu is displayed as shown in Figure 14 on page 73.

## Systems

The systems specified in System Definitions are your CICS and other related systems that are eligible for report processing by CICS PA.

Each system is identified by its name, type, and optionally, its image:

**Name** The primary system identifier.

**Type** Five system types are supported:

**CICS** CICS Transaction Server region or CICS Transaction Gateway region. The system name is the CICS Transaction Server generic APPLID or the CICS Transaction Gateway APPLID.

**Image** MVS Image where your CICS regions run. The system name is usually the MVS SMF ID but it can be a unique arbitrary name.

**DB2** DB2 subsystem that services your CICS regions. The system name is the DB2 subsystem ID.

**MQ** WebSphere MQ subsystem that services your CICS regions. The system name is the MQ subsystem ID.

**Logger**

MVS System Logger used by your CICS regions. The system name is an arbitrary name that represents the MVS System Logger.

**Image** Optionally, CICS, DB2, MQ and Logger systems can be further qualified by specifying the Image (MVS SMF ID) where they run.

### CICS System

CICS systems define the CICS Transaction Server or CICS Transaction Gateway regions that you want to report against. They are identified by their CICS Transaction Server generic APPLID or CICS Transaction Gateway APPLID and optionally qualified by the MVS Image where they run.

CICS system names can be specified as patterns containing masking characters. For example, if your CICS development regions are called CICSD1, CICSD2, CICSD3, and their SMF records are on the same file, then you can define them once as a system called CICSD\*. Then at report run-time, you can request that all CICSD\* systems are processed, or any individual system matching the pattern can be requested. For example, CICSD1.

You can define SMF files to CICS systems. These files contain the SMF 110 and SMF 112 records for CICS Transaction Server regions, and the SMF 111 records for CICS Transaction Gateway regions. When this system is requested for reporting, CICS PA builds JCL that includes DD statements for these files.

You can also define CICS systems to Groups. This allows you to connect systems for consolidated cross-system style reporting. See “Groups” on page 72 for more information.

### Image System

Image systems define the MVS systems where your CICS and other related systems run. They are usually identified by their MVS SMF ID but you can assign a unique arbitrary name to identify Images.

You can define SMF files to Image systems. These files contain the data for the CICS, DB2, MQ and Logger systems that belong to this Image. When an Image is selected for report processing, all systems with data on the Image's SMF files are reported.

Image systems have some special characteristics:

1. Images can be used to further qualify CICS, DB2, MQ and Logger systems. For example, CICS region CICSD1 runs on Image DEV1. Using Image to qualify your systems allows you to:
  - Distinguish between systems with same name but run on different images.
  - Specify your SMF files once only. When SMF files are defined to an Image, other systems that belong to the Image use these files if they don't have their own specified. This saves the duplication of assigning files to every system that needs them.
2. Images implicitly define all the systems that run on them. This allows you to just define the Image without defining the CICS and other systems that run on it. You can request reporting for any CICS system qualified by the Image but not explicitly defined in your System Definitions. CICS PA assumes that the report data for the CICS system is contained in the Image's files.

For example, CICS regions CICSP1, CICSP2 and CICSP3 run on MVS Image MVS1. You can decide to only define Image MVS1 to CICS PA and not the CICS regions. The regions are still eligible for reporting. When you request reporting for CICS system CICSP1 qualified by Image MVS1, CICS PA generates report requests for APPLID CICSP1, and assumes that the SMF Files defined to Image MVS1 contain the data for CICSP1.

## **DB2 System**

DB2 systems define the DB2 subsystems used by your CICS regions. They are identified by their DB2 subsystem ID and optionally qualified by the MVS Image where they run.

Defining your DB2 subsystems allows you to run the DB2 report which presents a consolidated picture of DB2 resource usage by your CICS transactions.

You can define SMF files to DB2 systems. These files contain the DB2 accounting (SMF 101) data for that system. When this system is requested for reporting, CICS PA builds JCL that includes DD statements for these files.

You can also define DB2 systems to Groups. This allows you to connect a DB2 system to the CICS systems it services. See “Groups” on page 72 for more information.

## **MQ System**

MQ systems define the WebSphere MQ subsystems used by your CICS regions. They are identified by their MQ subsystem ID and optionally qualified by the MVS Image where they run.

Defining your MQ subsystems allows you to run the MQ report which presents a consolidated picture of MQ resource usage by your CICS transactions.

You can define SMF files to MQ systems. These files contain the MQ accounting (SMF 116) data for that system. When this system is requested for reporting, CICS PA builds JCL that includes DD statements for these files.

You can also define MQ systems to Groups. This allows you to connect an MQ subsystem to the CICS systems it services. See “Groups” for more information.

## Logger System

Logger systems define the MVS System Loggers used by your CICS regions that you want to report against. They are identified by an arbitrary name and optionally qualified by the MVS Image where they run. The Logger system name is not a formal name associated with any aspect of your CICS System Logger set-up such as Logstream name, but simply a name you choose to identify this system by.

Defining Logger systems allows you to run the Logger report which presents a detailed analysis of the Logstreams and coupling facilities used by your CICS regions.

You can define SMF files to Logger systems. These files contain the System Logger (SMF 88) data for that system. When this system is requested for reporting, CICS PA builds JCL that includes DD statements for these files.

You can also define Logger systems to Groups. This allows you to connect a Logger system to the CICS systems it services. See “Groups” for more information.

## SMF Files

SMF Files are data sets that contain the SMF records for your systems. See “Systems” on page 70 for the type of records expected in the SMF file for each system type.

You define your SMF Files to the system(s) that they have data for. If your SMF File contains data for all systems running on an MVS Image, then define the file once to the Image system. Then all systems that run on that Image (CICS, DB2, MQ and Logger) will use the Image's file specification.

System Definitions has an SMF File maintenance facility that allows you to view all the SMF files you have defined and the systems that use each file. See “Maintaining Personal SMF Files” on page 94 for more information.

If you choose not to specify your SMF files in System Definitions initially, CICS PA will give you the opportunity to specify them at Report Set run time. Depending on your run-time options, you can either:

- Link to System Definitions to specify the required files, or
- Request that CICS PA generate report JCL with the SMF file data set names unresolved. Before submitting, you can specify the data set names directly in the JCL.

## Groups

A Group is a collection of systems that require consolidated reporting. Instead of running a report against a particular System, you can run the report against a Group. This provides a facility for consolidated cross-system style reporting.

Some practical uses for Groups include:

- CICS systems that are connected by IRC/MRO, ISC/APPC, or IPIC — specify your TOR, AOR, FOR and DOR regions in a Group for cross-system reporting.
- CICS systems that use DB2 — specify your CICS DOR region and DB2 subsystem in a Group for DB2 reporting.

- CICS systems that use WebSphere MQ — specify your CICS region and MQ subsystem in a Group for MQ reporting.
- CICS systems that require System Logger reporting — specify your CICS region and Logger systems in a Group for Logger reporting.

Systems can belong to more than one Group.

System Definitions has a Group maintenance facility that allows you to view all the Groups that you have defined and the systems that belong to each Group. See “Maintaining Personal Groups” on page 99 for more information.

## Take-up

Rather than creating system definitions yourself, you can use the take-up facility to create them for you. The take-up facility extracts system details from an SMF file that you specify, and uses these details to create system definitions. For more information, see “Personal Take-Up from SMF File” on page 104.

---

## Personal System Definitions Menu

The first time that you invoke Personal System Definitions, you are presented with a menu.

```

File  Confirm  Options  Help
-----
                        Personal System Definitions Menu
Command ===> _____

Select an option then press Enter.

1  1. Define Systems, SMF Files and Groups
_  2. Maintain SMF Files
   3. Maintain Group definitions
   4. Take-up from SMF File

Enter "/" to select option
_ Always go directly to Systems View

```

*Figure 14. Personal System Definitions: Menu*

The Personal System Definitions Menu displays the options available for specifying and maintaining Systems, SMF Files, and Groups. These are the three primary views. For each of these views, there is a hierarchy of panels for maintaining their relationships:

- For a System, you can specify the SMF Files it uses and the Groups it belongs to.
- For an SMF File, you can specify the Systems that use it.
- For a Group, you can specify the Systems that belong to it.

This menu also provides a Data Take-up facility to extract details of Systems from an SMF File for automatic take-up into your System Definitions.

## Bypassing the Personal System Definitions Menu

You can bypass the Personal System Definitions Menu by selecting **Always go directly to Systems View**. Then option 1 from the Primary Option Menu will always go directly to the Personal System Definitions panel.



To access the Systems, SMF Files, and Groups panels without using the menu, select from **View** in the action bar or enter one of the commands **VIEW SYSTEMS**, **VIEW FILES**, or **VIEW GROUPS**.

To redisplay the menu, select **View->Menu** in the action bar or enter the **MENU** command.

Regardless of your bypass choice, if you have Automatic Save on Exit set to **PROMPT** in your Profile Settings, the menu will always be displayed when you attempt to exit System Definitions. This allows you to enter **SAVE** or **CANCEL** before exit.

## Primary Commands

**SAVE** This command saves any changes you have made during this invocation of System Definitions.

Also available from **File** in the action bar.

### **CONFIRM ON|OFF**

**CONFIRM ON** (or **CONFIRM**) instructs CICS PA to prompt for confirmation when you request to Cancel from System Definitions when there are changes. With **CONFIRM OFF**, Cancel requests are actioned immediately, discarding any changes.

The **CONFIRM** command changes the setting only for the current invocation of System Definitions. On exit, it reverts to the default set by **Cancel Confirmation** in CICS PA Settings.

Also available from **Confirm** in the action bar.

### **Note:**

1. The **SAVE** command is available only at the four possible “exit points” of System Definitions: the Menu, and the Systems, SMF Files, and Groups views. All System Definitions changes are saved upon issuing a **SAVE** command from any of these panels.
2. Updates to the current view are saved when you change views (**VIEW SYSTEMS|FILES|GROUPS** command) or display the menu (**MENU** command).
3. **CANCEL** (F12) discards all updates.
4. **EXIT** (F3) saves your System Definitions as follows:
  - If the System Definitions Menu is *not* being bypassed, your System Definitions are not saved until Exit from the Menu.
  - If the System Definitions Menu *is* being bypassed, your System Definitions are saved on Exit from any view (Systems, Files, or Groups).

---

## Maintaining Personal System Definitions

The Personal System Definitions panel is the primary panel for maintaining your system definitions.

To display the Personal System Definitions panel, do one of the following steps:

- From the Personal System Definitions Menu, select option 1 **Define Systems, SMF Files and Groups**.
- Select **Systems** in the action bar of any reporting panel, and then select **Specify Personal System Definitions**. (See Figure 43 on page 115).



From the list of personal systems you can perform the following actions:

- Define a new system by entering the **NEW** command or using the line action **I**.
- Copy or repeat a system together with its associated files and groups. Note however that an MVS Image must have a unique name.
- Use the line action **S** to update or view details of a system including its related files and groups.
- Delete a system that is no longer required.
- Use the **FIND** and **SORT** commands to locate entries in the list
- Use **Filter->Set Filter** in the action bar to display only systems that match your specified criteria

File Edit Filter View Mass_Update Options Help					
Personal System Definitions					Row 1 from 9
Command ==> _____					Scroll ==> _____
Select a System to edit its definition, SMF Files and Groups.					
/	System	Type	Image	Description	SMF Files System
-	CICSP001	CICS	MVS1	CICS APPLID CICSP001/MVS1	MVS1
-	MVS1	Image		MVS System MVS1	MVS1
-	DB2P	DB2	MVS1	DB2 Subsystem DB2P/MVS1	MVS1
-	CICSD001	CICS		CICS APPLID CICSD001	CICSD001
-	DB2D	DB2	MVS1	DB2 Subsystem DB2D/MVS1	DB2D
-	DB2E	DB2		DB2 Subsystem DB2E	DB2E
-	DB2F	DB2		DB2 Subsystem DB2F	
-	CICSP001	Logger	MVS1	System Log for CICSPLOG/MVS1	MVS1
-	CICSP*	CICS		CICSAPPLIDs CICSP*	CICSP*
***** End of list *****					

Figure 15. Personal System Definitions

This panel lists the Systems that are available for Report Set processing. A System is identified by the combination of its System ID, System type, and MVS (SMF) Image ID. Each row shows System, Type, Image, Description, and the SMF Files System. The fields are display-only except for Description.

### System

The system name is one of the following depending on the type:

- CICS Transaction Server generic APPLID
- CICS Transaction Gateway APPLID
- MVS (SMF) Image ID
- DB2 Subsystem ID
- WebSphere MQ Subsystem ID
- MVS System Logger ID

CICS PA automatically inserts an Image definition when a System is added or updated with a new Image. The Image is inserted in the list immediately after the System that created it.

The purpose of Image definitions is two-fold:

1. To allow you to report against all systems running on an MVS Image without having to explicitly specify the system names.
2. To allow you to specify the SMF data set names once. Simply define your SMF files for an MVS Image, and all systems running on that Image (with no files of their own) will use these files.

If they are uniquely defined, the order of the system definitions is not relevant to CICS PA. You can list them on this panel in the order that is convenient for you. Line action **M** (Move) or the **SORT** command is available for this purpose.

**Type** The following types of system are supported:

1. **CICS System.** Either a CICS Transaction Server system identified by its generic APPLID, or a CICS Transaction Gateway system identified by its APPLID. CICS PA matches this name against the CICS Transaction Server generic APPLID specified in SMF 110 and SMF 112 records, and the CICS Transaction Gateway APPLID specified in SMF 111 records.
2. **MVS Image.** MVS System, identified by its MVS SMF ID (SID parameter in SMFPRMnn) or any name that uniquely identifies your system. The name need not match any formal MVS definition.
3. **DB2 Subsystem.** DB2 Subsystem, identified by its SSID. CICS PA matches this name against the SSID specified in the DB2 accounting records.
4. **MQ Subsystem.** WebSphere MQ Subsystem, identified by its SSID. CICS PA matches this name against the SSID specified in the MQ accounting records.
5. **System Logger.** MVS System Logger, identified by the CICS or MVS system it services or any name that identifies the Logger system. The name need not match any formal MVS definition.

**Image** Image is the SMF identifier of the MVS System which collects the SMF data and runs the CICS System, DB2 Subsystem, MQ Subsystem, or System Logger. Image is blank when the System is an Image because the System name is the Image name.

#### Description

Description is free-format text up to 36 characters to describe the system. This is for your reference only, although CICS PA will insert it as a comment in your Report Set JCL.

#### SMF Files System

The SMF Files System identifies where you have defined the files for this system. These are the files that CICS PA will use for Report Set JCL generation.

CICS PA allows systems to share files. So if an MVS Image is running a number of CICS, DB2 or MQ systems, you need only specify the files once for the Image.

If this indicator is blank, the system (and its associated Image) have no files defined or they are all Excluded. If your Report Set requests this system, the JCL generation process will invoke the "Missing SMF Files Option".

Enter the **S** line action to view or modify the SMF File specifications (and Groups) for the system.

#### Line Actions

<b>/</b>	Display the menu of line actions
<b>S</b>	Select (edit) the System
<b>I</b>	Insert a row
<b>R</b>	Repeat this row
<b>C</b>	Copy this row
<b>M</b>	Move this row

- A** Move/Copy after this row
- B** Move/Copy before this row
- D** Delete this row
- U** Include CICS system in mass update

**Note:** A line action on this panel applies to the System definition and all its associated information. For example, copying a row copies the System details and all its File and Group relationships. Deleting a row deletes the System and its relationships, but not the Files and Groups themselves.

## Primary Commands

### **NEW name CICS|IMAGE|DB2|MQ|LOGGER**

This command creates a new System. If all required parameters are specified, the Definition panel for the system is displayed. Otherwise, the New System window is displayed to allow you to specify the name and type of the new System.

Also available from **File** in the action bar.

See “New System” on page 79 for information on how to proceed.

**SAVE** This command saves any changes you have made during this invocation of System Definitions.

Also available from **File** in the action bar.

### **FIND string**

This command (or **F**) looks for the specified character string in all columns or a subset of columns in the displayed data. The string need only be enclosed in quotes if there are embedded spaces. The search is not case sensitive. The display scrolls to the row where the string is found and positions the cursor on the matching data. To find more occurrences, use **F5** or the **RFIND** command repeatedly.

If there is no match but the search did not begin at the start of the list, the screen does not change and the message \*Bottom of data reached\* is displayed. Use **F5** or **RFIND** to search from the top. If there is no match in the entire list, the screen does not change and the message No CHARS xxx found is displayed.

Also available from **Edit** in the action bar.

### **SORT SYSTEM|TYPE|IMAGE|DESCRiption**

This command sorts the list of Systems on the specified column. The default is SYSTEM (then TYPE and IMAGE). The order is retained on exit.

Also available from **Edit** in the action bar.

### **SELECT pattern**

This command inserts line action **S** next to all Systems whose names match the specified pattern.

### **SELECT|S pattern**

This command inserts line action **S** next to all Systems whose names match the specified pattern (such as PROD\*, to match all Systems whose name begins with the letters PROD).

### **SELECT|S pattern U**

This command inserts line action **U** (include in mass update) next to CICS Systems whose names match the specified pattern.

## RESET

This command (or **RES**) removes all outstanding line actions.

Also available from **Edit** in the action bar.

## VIEW FILES|GROUPS

This command takes you to the Files or Groups view. Updates are saved when you change views.

Also available from **View** in the action bar.

## MENU

This command takes you to the System Definitions Menu. Updates are saved when you go to the menu.

Also available from **View** in the action bar.

### Note:

1. The **SAVE** command is available only at the four possible “exit points” of System Definitions: the Menu, Systems view, SMF Files view, and Groups view. All System Definitions updates are saved on issuing a **SAVE** command from any of these panels.
2. Updates are saved when you change views (**VIEW SYSTEMS|FILES|GROUPS** command) or display the menu (**MENU** command).
3. **CANCEL** (F12) discards all updates.
4. **EXIT** (F3) saves changes as follows:
  - If the System Definitions Menu is *not* being bypassed, the System Definitions are not saved until Exit from the Menu.
  - If the System Definitions Menu *is* being bypassed, the System Definitions are saved on Exit from any view (Systems, Files, or Groups).

## Set Filter (Systems)

The following panel is displayed when you select **Filter->Set Filter** in the action bar of the System Definitions panel.

```
----- Set Filter -----
Command ==> _____

Specify or revise filtering criteria then press Enter.

System ID . . . . C*_____ (Blank or pattern)
MVS Image . . . . _____ (Blank or pattern)

/ Include CICS Systems
7 Include MVS Images
7 Include DB2 Subsystems
7 Include MQ Subsystems
7 Include System Logger
_
```

Figure 16. System Definitions: Set Filter (Systems)

This facility allows you to filter the amount of information displayed in the current view.

Specify any combination of the following filtering criteria:

### System ID, MVS Image

Specify a name or pattern for one or both. Masking characters % and \* are

allowed. Only systems that match the pattern are eligible for display. For example, CIC\*1 will display CICPROD1 and CICST1 but not CICST1A.

#### **Include CICS Systems, MVS Images, DB2, MQ, System Logger**

Type / against the type of systems you want displayed. Only those selected are eligible for display.

Press Enter to set the filter.

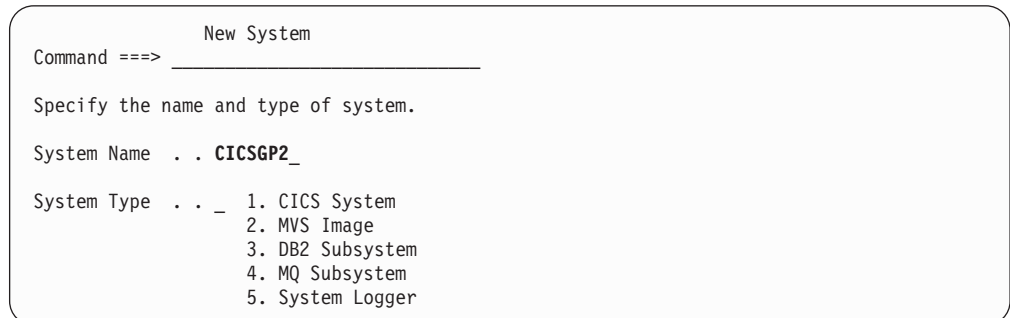
A system will only be displayed in the filtered view when all the specified filtering options are matched. All others are hidden (they are not deleted). Exit, Save, or Cancel processing applies to the entire list of systems, regardless of whether they are displayed or filtered out.

When filtering is in effect **Filter Mode - More:** is displayed in the top right corner after the panel title. On initial entry to the Systems view, no filtering is in effect.

To reset the filter and redisplay all intervals and the row count, select **Filter->Set filter off** in the action bar. The filtering criteria will remain dormant in the Set Filter panel.

## **New System**

The New System panel is displayed when you enter the **NEW** command or the line action **I** (Insert) from the System Definitions panel.



The screenshot shows a terminal window titled "New System". The first line is "Command ==>". Below it is the instruction "Specify the name and type of system." The next line shows "System Name . . . CICS6P2\_". The following line shows "System Type . . . " followed by a numbered list: "1. CICS System", "2. MVS Image", "3. DB2 Subsystem", "4. MQ Subsystem", and "5. System Logger".

*Figure 17. System Definitions: Specifying a New System*

This panel allows you to create a new system definition. You must specify the system name and type.

You can bypass this panel by entering the command **NEW name CICS|IMAGE|DB2|MQ|LOGGER** in full.

The options are:

#### **System Name**

Specify the name of the new system. Names can contain only alphanumeric (A-Z,0-9) or special (@,#,\$) characters. For a CICS APPLID, DB2 or MQ SSID, or Logger name you can also specify a pattern using the % and \* masking characters.

A CICS APPLID, Image, or Logger name has a maximum length of 8 characters, whereas for a DB2 or MQ SSID it is 4 characters.

**Type** Select the type of system:

1. **CICS System.** Either a CICS Transaction Server system identified by its generic APPLID, or a CICS Transaction Gateway system identified by

its APPLID. CICS PA matches this name against the CICS Transaction Server generic APPLID specified in SMF 110 and SMF 112 records, and the CICS Transaction Gateway APPLID specified in SMF 111 records.

2. **MVS Image.** MVS System, identified by its MVS SMF ID (SID parameter in SMFPRMnn) or any name that uniquely identifies your system. The name need not match any formal MVS definition.
3. **DB2 Subsystem.** DB2 Subsystem, identified by its SSID. CICS PA matches this name against the SSID specified in the DB2 accounting records.
4. **MQ Subsystem.** WebSphere MQ Subsystem, identified by its SSID. CICS PA matches this name against the SSID specified in the MQ accounting records.
5. **System Logger.** MVS System Logger, identified by the CICS or MVS system it services or any name that identifies the Logger system. The name need not match any formal MVS definition.

---

## Mass Update of Personal CICS System Definitions

Suppose that, some time ago, you created CICS System Definitions in CICS PA using version-specific data set names for the MCT and SDFHLOAD libraries. Now you want to upgrade your CICS System Definitions in CICS PA to match this change in your system environment. Rather than selecting and then editing each system definition individually, you can upgrade several (or all of them) together.

1. On the System Definitions list panel, select systems using one of these methods:
  - Type line action **U** next to each of the CICS System Definitions that you want to upgrade together.
  - On the command line, enter: **S *prefix*\* U**  
where *prefix* matches the leading characters of the names of the CICS System Definitions that you want to upgrade together.
  - To select all CICS System Definitions: enter **S \* U** on the command line; or select **Mass\_Update** in the action bar. This inserts line action **U** next to every CICS System Definition, including any rows that are not visible in the current view of the list panel. You can selectively remove **U** from any system definitions that you do not want to upgrade now.

### Notes:

- You can only enter line action **U** next to System Definitions of type CICS.
- To be updated a CICS System Definition must be selected and must match the particular existing “from” values that you specify.

Once you have selected the systems you want to update, press Enter to display the Mass Update CICS Systems panel:

File Options Help			
-----			
Mass Update Shared CICS Systems			
Command ==> _____			
Execution option	. . 1	1. Report only 2. Perform update and report 3. Populate From and To with first system details	
Definition changes:			
MVS Image	From . . _____	To . . _____	
Description	From . . _____	To . . . _____	
MCT Suffix	From . . _____	To . . _____	
MCT Load Library	From . . _____	To . . . _____	
SDFHLOAD Library	From . . _____	To . . . _____	
Dictionary DSN	From . . _____	To . . . _____	
Log Stream	From . . _____	RETPD From _____	1
	To . . . _____	To _____	
Update options:			
_ Populate dictionary data set with new dictionary record			
_ Auto save after successful update 2			

Figure 18. System Definitions: Mass Update CICS Systems

- 1 The Log Stream and RETPD fields are used with Shared System Definitions. They are not applicable to Personal System Definitions.
- 2 For Personal System Definitions, CICS PA saves updates to disk according to the “Auto save after successful update” option. For Shared System Definitions updates are always saved immediately, so this option is not applicable.
2. In the “From” fields, enter the old values that you want to upgrade. In the matching “To” fields, enter the new values.  
The “From” fields for Description and data set names (MCT Load Library, SDFHLOAD Library, Dictionary DSN, and Log Stream) can specify an asterisk (\*) as a wildcard to indicate zero or more characters, or the percent symbol (%) as a wildcard to indicate any single character.
3. To view a report of the changes that your “From” and “To” field values would have on each of the selected CICS System Definitions, select the “Report only” option. To perform the changes and then view a report of the changes, select “Perform update and report”.

## CICS System (APPLID) definition

The CICS System panel is displayed when:

- You enter the **S** line action against a CICS System listed on the System Definitions panel.
- You enter the **NEW** command with a type of **CICS**.

File Edit Dictionary View Options Help				
CICS System		Row 1 of 3	More: >	
Command ==>		Scroll ==>		
CICS System definition:				
APPLID . . . . .	CICSP1	MVS Image . .	MVS1	VRM . . :
Description . . . . .	CICS system CICSP1 on MVS MVS1			
MCT Suffix . . . . .	U1			
MCT Load Library . . .	'CICS.PROD.MCTLOAD'			
SDFHLOAD Library . . .	'CICS.PROD.SDFHLOAD'			
Dictionary DSN . . . .	'USER.CICSPA.CICSP1.DICT'			
/ Exc	SMF Data Set Name +	UNIT +	SEQ	VOLSER +
- *	'CICSPAOR.CMF1'	CART	1	000010 +
-	'CICSPAOR.CMF2'	3390		
- *	'CICSPAOR.CMF3'			
***** End of list *****				
F1=Help	F3=Exit	F4=Prompt	F5=Rfind	F6=Resize
F7=Backward	F8=Forward	F10=Actions	F11=Right	F12=Cancel

Figure 19. System Definitions: CICS System (with Files)

Scroll **Right** (F11) to switch between Files view and Groups view. Use Files view to specify the files that are used by this CICS system. Use Groups view to specify the groups that the CICS system belongs to.

...	
/ Group +	Description
- CICSPROD	Production CICS
- DB2PROD	Production DB2
***** End of list *****	
...	

Figure 20. System Definitions: CICS System (with Groups)

For each system, CICS PA remembers its last view and returns there next time.

This panel is used to define a CICS system (CICS TS or CICS TG) to CICS PA. The CICS system details are:

#### APPLID

The CICS Transaction Server generic APPLID or CICS Transaction Gateway APPLID. An APPLID is up to eight alphanumeric (A-Z,0-9) or special (@,#,\$) characters, and must be specified. You can also specify a pattern using the % and \* masking characters.

The use of masking characters allows the definition of a generic Dictionary record for use by multiple APPLIDs that match the masked APPLID. All matching APPLIDs plus Image must use the same MCT specified when creating the Dictionary record.

#### Image

The SMF identifier of the MVS system where the CICS system runs. An Image ID is up to 8 alphanumeric (A-Z,0-9) or special (@,#,\$) characters.

The use of masking characters allows the definition of a generic Dictionary record for use by multiple Images that match the masked Image. All matching APPLIDs plus Image must use the same MCT specified when creating the Dictionary record.



**VRM** The VRM value is displayed if it can be determined from the MCT load library or the SDFHLOAD library, otherwise it is blank.

**Description**

Description is free-format text up to 36 characters to describe the system. This is for your reference only, although CICS PA will insert it as a comment in your Report Set JCL.

**MCT Suffix**

The suffix of the CICS Monitoring Control Table (MCT), which should be the same as the MCT= parameter in DFHSIT. The suffix is one or two alphanumeric (A-Z,0-9) or special (@,#,\$) characters. If not specified, CICS PA uses the system default MCT. If specified, the MCT Load Library must also be specified. The MCT is needed to include user fields in your reporting.

**MCT Load Library**

The name of the load library containing the MCT load module. If not specified, CICS PA cannot use the MCT to determine the user fields defined in the MCT.

**SDFHLOAD Library**

The name of the library containing the CICS utility program DFHMNDUP which CICS PA uses to generate a dictionary record. CICS PA uses the dictionary record to interpret the CMF performance data records processed from the SMF files. If not specified, CICS PA cannot determine the CICS VRM or report user fields defined in the MCT.

**Dictionary DSN**

The name of the data set that contains the dictionary record for this CICS system. It can be either the name of a data set with Variable record format (RECFM=V) or the name of a member of a partitioned data set (PDS).

You only need to specify this if you want to report the user fields defined in the MCT. If you are not reporting user fields, then you can let CICS PA use the default dictionary record for your release of CICS.

If you want CICS PA to generate the dictionary record for this CICS system, do the following steps::

1. Specify the Dictionary DSN.
2. Specify the SDFHLOAD Library so that CICS PA can use the DFHMNDUP utility to generate the dictionary record.
3. Select **Dictionary** in the action bar. CICS PA immediately populates the specified data set with the dictionary record for this CICS system. If the data set is not cataloged, CICS PA will allocate it before writing the record. If the data set is cataloged, CICS PA will overwrite its contents with the new dictionary record.

At JCL generation time, CICS PA inserts the Dictionary DSN (if cataloged) in the **CPADICTR DD** statement.

Dictionary records describe the format of CMF performance records and are required for CICS PA reporting. Usually the SMF data set contains a dictionary record to describe the format of its records. If it is missing, CICS PA uses the record in the CPADICTR data set if present, otherwise it uses the default dictionary record for the release of the CICS system being processed.

**Important:**

1. The APPLID/Image ID combination in the created dictionary record must match the CMF records, otherwise the dictionary record will not be used.
2. If Image ID is not specified in the System Definition, the system on which the dictionary record is created (that is, the image on which the CICS PA dialog is executing) will be written in the generated dictionary record. This Image ID will be used to match with the CMF records.

## Primary Commands

### FIND string

This command (or **F**) looks for the specified character string in the SMF Data Set Name and Group columns of the displayed data. The string need only be enclosed in quotes if there are embedded spaces. The search is not case sensitive. The display scrolls to the row where the string is found and positions the cursor on the matching data. To find more occurrences, use **F5** or the **RFIND** command repeatedly.

If there is no match but the search did not begin at the start of the list, the screen does not change and the message \*Bottom of data reached\* is displayed. Use **F5** or **RFIND** to search from the top. If there is no match in the entire list, the screen does not change and the message No CHARS xxx found is displayed.

Also available from **Edit** in the action bar.

### SORT GROUP|DESCRiption

This command sorts the list of Groups by name (the default) or description. The order is retained on exit.

Also available from **Edit** in the action bar.

**Note:** The SORT command is not available for Files since it is important that the data set names are specified in time sequence.

### RESET

This command (or **RES**) removes all outstanding line actions and deletes any blank rows.

Also available from **Edit** in the action bar.

## Files the System uses

See Figure 19 on page 82 for a view of the CICS System panel where you can list all the files that the system uses.

Each listed data set has the following attributes:

**Exc** The data set is marked by an asterisk \* if it is to be Excluded from reporting. Excluded data sets are not eligible for Report Set JCL generation.

Enter the **X** line action to reverse the status (Exclude/Include) of the data set.

### SMF Data Set Name

The name of an SMF data set containing data for

- Report Set processing:
  - CMF performance class, exception class, and transaction resource class data (SMF 110 records)
  - DB2 accounting data (SMF 101 records)

- WebSphere MQ accounting data (SMF 116 records)
- System Logger data (SMF 88 records)
- OMEGAMON XE for CICS (SMF 112 records)
- Statistics reporting:
  - CICS statistics and server statistics data (SMF 110 records)
  - CICS Transaction Gateway statistics data (SMF 111 records)

You can select data set names from a list of available data sets by using **Prompt** (F4) or the **S** line action.

Normal ISPF data set conventions apply. Fully qualified data set names must be enclosed in quotes, except if **PROFILE NOPREFIX** is set.

The data sets, if not Excluded, are processed by CICS PA JCL generation in the order in which they are specified on the panel. For reporting to span more than one data set, specify the data sets in time sequence (earliest first).

If the data set is not cataloged, then specify UNIT, SEQ, or VOLSER.

### UNIT

The generic or esoteric device type of the data set, such as 3390, SYSDA, or CART. This must represent a device type that is defined in the Eligible Device Table of the current processor as either TAPE or DASD. To select one from a list of possible Units, position the cursor on the UNIT field and press **Prompt** (F4).

UNIT can be specified without a VOLSER, in which case CICS PA will use the explicitly specified device type when generating JCL but will not include the UNIT parameter in the generated JCL. In this way the JCL generation process can be made aware of the device type of a data set that is yet to be cataloged, or is cataloged on another system. CICS PA uses the device type to determine tape unit affinity when generating JCL.

### SEQ

The File Sequence Number is only required for uncataloged tape data sets. It identifies the relative position of the data set on a tape volume. Omit, or code 0 or 1 to indicate the first data set on the tape volume.

### VOLSER

The volume serial number of the data set. It is only required for uncataloged data sets. If a VOLSER is specified, then a UNIT must also be specified.

CICS PA appends a + sign to the VOLSER to indicate that the data set spans multiple volumes.

To display the VOLSER List of up to 16 volumes, enter the **V** line action or place the cursor on the VOLSER field and press **Prompt** (F4).

## Line Actions

The valid line actions for the System Files view are:

- /** Display the menu of line actions
- S** Select Files from a list

- I**      Insert a blank row for entry of a related file
- R**      Repeat this row
- C**      Copy this row
- M**      Move this row
- A**      Move/Copy after this row
- B**      Move/Copy before this row
- D**      Delete this row
- U**      Select Unit from a list
- V**      Display the VOLSER List for up to 16 volumes
- X**      Reverse the Exclude indicator (Include/Exclude)

## Select SMF Files

The Select SMF Files panel is displayed when you enter the line action **S** or press **Prompt** (F4) from an SMF Data Set Name field on a system definition panel (CICS System, MVS Image, DB2 Subsystem, MQ Subsystem, System Logger). It displays the list of files not already defined to the system. This list is a subset of the files maintained in the Files view (see Figure 31 on page 94).

Select SMF Files
Row 1 to 6 of 6

Command ==> \_\_\_\_\_
Scroll ==> \_\_\_\_\_

Select one or more Files then press EXIT.

SMF Data Set Name	UNIT	SEQ	VOLSER
. 'CICSPAOR.CMF1'	SYSALLDA	1	000010
. 'CICSPAOR.CMF2'	3390		
. 'CICSPAOR.CMF3'			
. 'CICSPTOR.CMF1'	SYSALLDA	1	00110
. 'CICSPTOR.CMF2'	3390		
. 'CICSPTOR.CMF3'			

\*\*\*\*\* End of list \*\*\*\*\*

Figure 21. System Definitions: Select SMF Files

This is a list of SMF Files that are available for selection.

Enter a **/** or **S** line action to select one or more files from the list.

Press **Exit** (F3) to complete your selection.

## Select a Unit

The Select a Unit panel is displayed when you press **Prompt** (F4) from the UNIT field when specifying a data set:

- For a Personal System Definition
- In the Files view
- On the Data Take-Up panel

It lists the unit device types that are defined as either TAPE or DASD in the Eligible Device Table of the processor CICS PA is running on.

Enter a **/** or **S** line action (or point-and-shoot) to select a unit device type from the list.

## VOLSER list

The list of Volsers is displayed when you press **Prompt** (F4) from the VOLSER field when specifying a data set:

- For a Personal System Definition
- In the Files view
- On the Data Take-Up panel

The VOLSER List is used to specify up to 16 volume serial numbers when the SMF data set spans more than one volume. The VOLSERs are listed in the JCL in the same order as they are specified here.

## Groups the System belongs to

See Figure 20 on page 82 for a view of the CICS System panel where you can list all the groups that the system belongs to.

Each group in the list has the following attributes:

**Group** The name of a Group that this system belongs to. A system can belong to any number of groups. A group name need not be a formal CICS definition, but any name you choose to identify a group of related systems. You can select one or more from a list of available groups by using **Prompt** (F4).

By specifying a Group name, you can group related systems for reporting purposes, such as cross-system reporting for CICS systems that connect via IRC/MRO, ISC/APPC, IPIC, or transaction grouping.

### Description

Description is free-format text up to 36 characters to describe the group.

## Line Actions

The valid line actions for the System Groups view are:

/	Display the menu of line actions
S	Select Groups from a list
I	Insert a row
R	Repeat this row
C	Copy this row
M	Move this row
A	Move/Copy after this row
B	Move/Copy before this row
D	Delete this row

## Select Groups

The Select Groups panel is displayed when you enter the line action **S** or press **Prompt** (F4) from a Group field on a system definition panel (CICS System, MVS Image, DB2 Subsystem, MQ Subsystem, System Logger). It displays the list of groups that the system does not already belong to. This list is a subset of the groups maintained in the Groups view (see “Maintaining Personal Groups” on page 99).

```

----- Select Groups -----
                                Row 1 to 4 of 4
Command ==> _____ Scroll ==> ____

Select one or more Groups then press EXIT.

      Group              Description
.  PRODMR01  Production MRO
.  WEEKLY    Weekly SMF data
.  MONTHLY   Monthly SMF data
.  YEARLY    Yearly SMF data
***** End of list *****

```

Figure 22. System Definitions: Select Groups

This is a list of groups that are available for selection.

Enter a / or S line action to select one or more groups from the list.

Press Exit (F3) to complete your selection.

## MVS Image definition

The MVS Image panel is displayed when:

- You enter line action **S** against an MVS Image listed on the System Definitions panel.
- You enter the **NEW** command with a type of **IMAGE**.

```

File Edit View Options Help
-----
                                MVS Image          Row 1 of 2  More: >
Command ==> _____ Scroll ==> ____

MVS Image definition:
MVS Image . . . . . MVS1_____
Description . . . . MVS system MVS1_____

/ Exc          SMF Data Set Name +          UNIT +  SEQ VOLSER +
-  * 'MVS1.CMF.FILEA' _____
-  * 'MVS1.CMF.FILEB' _____
***** End of list *****

F1=Help      F3=Exit      F4=Prompt      F5=Rfind      F6=Resize
F7=Backward  F8=Forward   F10=Actions   F11=Right    F12=Cancel

```

Figure 23. System Definitions: MVS Image (with Files)

```

File Edit View Options Help
-----
MVS Image                      Row 1 of 2 More: >
Command ==>                    Scroll ==>
MVS Image definition:
MVS Image . . . . . MVS1
Description . . . . . MVS system MVS1
/ Group +                      Description
- PLEXPROD Production CICS
- PRODSHAR Production data sharing
***** End of list *****
F1=Help      F3=Exit      F4=Prompt      F5=Rfind      F6=Resize
F7=Backward  F8=Forward   F10=Actions   F11=Right    F12=Cancel

```

Figure 24. System Definitions: MVS Image (with Groups)

This panel is used to define an MVS Image to CICS PA. The definition includes:

- MVS (SMF) ID of the MVS Image where CICS APPLIDs, DB2 SSIDs, MQ SSIDs, or System Loggers run
- Description of the Image
- Files the Image uses
- Groups the Image belongs to

Scroll **Right** (F11) to switch between Files and Groups. Files is the initial view. However, for each system, CICS PA remembers its last view and returns there next time.

The Image details are:

#### MVS Image

The name of the MVS Image. The Image name must be unique. An Image name is up to eight alphanumeric (A-Z,0-9) or special (@,#,\$) characters.

#### Description

Description is free-format text up to 36 characters to describe the MVS system. This is for your reference only, although CICS PA will insert it as a comment in your Report Set JCL.

The primary commands are the same as on the CICS System panel. See “CICS System (APPLID) definition” on page 81.

The lists of related Files and Groups work the same here as on the CICS System panel. See “Files the System uses” on page 84 for the Files and “Groups the System belongs to” on page 87 for the Groups.

## DB2 Subsystem definition

The DB2 Subsystem panel is displayed when:

- You enter line action **S** against a DB2 Subsystem listed on the System Definitions panel.
- You enter the **NEW** command with a type of **DB2**.

File Edit View Options Help				
DB2 Subsystem			Row 1 of 2	More: >
Command ==>			Scroll ==>	
DB2 Subsystem definition:				
DB2 SSID . . . . .	DB2P	MVS Image . . .	MVS1	
Description . . . . .	DB2 Subsystem DB2P on MVS MVS1			
/ Exc SMF Data Set Name + UNIT + SEQ VOLSER +				
-	'MVS1.DB2.FILEX' _____			
- *	'MVS1.DB2.FILEY' _____			
***** End of list *****				
F1=Help	F3=Exit	F4=Prompt	F5=Rfind	F6=Resize
F7=Backward	F8=Forward	F10=Actions	F11=Right	F12=Cancel

Figure 25. System Definitions: DB2 Subsystem (with Files)

File Edit View Options Help				
DB2 Subsystem			Row 1 of 1	More: >
Command ==>			Scroll ==>	
DB2 Subsystem definition:				
DB2 SSID . . . . .	DB2P	MVS Image . . .	MVS1	
Description . . . . .	DB2 Subsystem DB2P on MVS MVS1			
/ Group + Description				
-	DB2PROD	Production DB2		
***** End of list *****				
F1=Help	F3=Exit	F4=Prompt	F5=Rfind	F6=Resize
F7=Backward	F8=Forward	F10=Actions	F11=Right	F12=Cancel

Figure 26. System Definitions: DB2 Subsystem (with Groups)

This panel is used to define a DB2 Subsystem to CICS PA. The definition includes:

- SSID of the DB2 Subsystem
- MVS Image where the DB2 Subsystem resides
- Description of the Subsystem
- Files used by the DB2 Subsystem
- Groups the DB2 Subsystem belongs to

Scroll **Right** (F11) to switch between Files and Groups. Files is the initial view. However, for each system, CICS PA remembers its last view and returns there next time.

The DB2 Subsystem details are:

#### DB2 SSID

The DB2 Subsystem ID. A DB2 SSID can be up to four alphanumeric (A-Z,0-9) or special (@,#,\$) characters. You can also specify a pattern using the % or \* masking characters.

#### MVS Image

The SMF identifier of the MVS system where the DB2 subsystem runs. An Image ID is up to eight alphanumeric (A-Z,0-9) or special (@,#,\$) characters.



## Description

Description is free-format text up to 36 characters to describe the system. This is for your reference only, although CICS PA will insert it as a comment in your Report Set JCL.

The primary commands are the same as on the CICS System panel, see “CICS System (APPLID) definition” on page 81.

The lists of related Files and Groups work the same here as on the CICS System panel, see “Files the System uses” on page 84 for the Files and “Groups the System belongs to” on page 87 for the Groups.

**Note:** Usually, you only need to specify files for DB2 subsystems when the DB2 Accounting records reside in a different data set to the CICS CMF records.

---

## MQ Subsystem definition

The WebSphere MQ Subsystem panel is displayed when:

- You enter line action **S** against an MQ Subsystem listed on the System Definitions panel.
- You enter the **NEW** command with a type of **MQ**.

```
File Edit View Options Help
-----
MQ Subsystem                               Row 1 of 2 More: >
Command ===>                               Scroll ===> ____

MQ Subsystem definition:
MQ SSID . . . . . MQSP MVS Image . . . MVS1
Description . . .MQ Subsystem MQSP on MVS MVS1

/ Exc          SMF Data Set Name +          UNIT + SEQ VOLSER +
- * 'MVS1.MQS.FILEX'
- * 'MVS1.MQS.FILEY'
***** End of list *****

F1=Help      F3=Exit      F4=Prompt      F5=Rfind      F6=Resize
F7=Backward  F8=Forward   F10=Actions   F11=Right     F12=Cancel
```

Figure 27. System Definitions: MQ Subsystem (with Files)

```
File Edit View Options Help
-----
MQ Subsystem                               Row 1 of 2 More: >
Command ===>                               Scroll ===> ____

MQ Subsystem definition:
MQ SSID . . . . . MQSP MVS Image . . . MVS1
Description . . .MQ Subsystem MQSP on MVS MVS1

Group +          Description
- MQSPROD      Production MQ
***** End of list *****

F1=Help      F3=Exit      F4=Prompt      F5=Rfind      F6=Resize
F7=Backward  F8=Forward   F10=Actions   F11=Right     F12=Cancel
```

Figure 28. System Definitions: MQ Subsystem (with Groups)

This panel is used to define an WebSphere MQ Subsystem to CICS PA. The definition includes:

- SSID of the WebSphere MQ Subsystem

- MVS Image where the WebSphere MQ Subsystem resides
- Description of the Subsystem
- Files used by the WebSphere MQ Subsystem
- Groups the WebSphere MQ Subsystem belongs to

Scroll **Right** (F11) to switch between Files and Groups. Files is the initial view. However, for each system, CICS PA remembers its last view and returns there next time.

The WebSphere MQ Subsystem details are:

#### WebSphere MQ ID

The WebSphere MQ Subsystem ID. A WebSphere MQ SSID can be up to four alphanumeric (A-Z,0-9) or special (@,#,\$) characters. You can also specify a pattern using the % or \* masking characters.

#### MVS Image

The SMF identifier of the MVS system where the WebSphere MQ subsystem runs. An Image ID is up to eight alphanumeric (A-Z,0-9) or special (@,#,\$) characters.

#### Description

Description is free-format text up to 36 characters to describe the system. This is for your reference only, although CICS PA will insert it as a comment in your Report Set JCL.

The primary commands are the same as on the CICS System panel. See “CICS System (APPLID) definition” on page 81.

The lists of related Files and Groups work the same here as on the CICS System panel. See “Files the System uses” on page 84 for the Files and “Groups the System belongs to” on page 87 for the Groups.

## System Logger definition

The System Logger panel is displayed when:

- You enter line action **S** against a System Logger listed on the System Definitions panel.
- You enter the **NEW** command with a type of **LOGGER**.

File Edit View Options Help

-----

System Logger

Row 1 of 1 More: >

Command ==>

Scroll ==>

System Logger definition:

Logger . . . . . CICSPO01

MVS Image . . . MVS1

Description . . . System Logger - CICS system CICSPO01

/ Exc

SMF Data Set Name +

UNIT +

SEQ VOLSER +

-----

\*\*\*\*\* End of list \*\*\*\*\*

F1=Help

F3=Exit

F4=Prompt

F5=Rfind

F6=Resize

F7=Backward

F8=Forward

F10=Actions

F11=Right

F12=Cancel

Figure 29. System Definitions: System Logger (with Files)

```

File Edit View Options Help
-----
                                System Logger                Row 1 of 1 More: >
Command ===> _____ Scroll ===> _____

System Logger definition:
Logger . . . . . CICSPO01  MVS Image . . . MVS1
Description . . . System Logger - CICS system CICSPO01

/  Group +                Description
-  CICSPO01  Production CICS systems
***** End of list *****

F1=Help      F3=Exit      F4=Prompt      F5=Rfind      F6=Resize
F7=Backward  F8=Forward    F10=Actions   F11=Right    F12=Cancel

```

Figure 30. System Definitions: System Logger (with Groups)

This panel is used to define a System Logger to CICS PA. The definition includes:

- ID of the System Logger
- ID of the MVS Image the System Logger services
- Description of the Logger
- Files used by the Logger
- Groups the Logger belongs to

Scroll **Right** (F11) to switch between Files and Groups. Files is the initial view. However, for each system, CICS PA remembers its last view and returns there next time.

The System Logger details are:

#### Logger

The name of the System Logger. This is not a formal MVS or CICS definition but any name you choose to identify the System Logger for your CICS systems. The name contains up to eight alphanumeric (A-Z,0-9) or special (@,#,\$) characters. You can also specify a pattern using the % and \* masking characters.

#### MVS Image

The SMF identifier of the MVS system where the System Logger runs. An Image ID is up to eight alphanumeric (A-Z,0-9) or special (@,#,\$) characters.

#### Description

Description is free-format text up to 36 characters to describe the system. This is for your reference only, although CICS PA will insert it as a comment in your Report Set JCL.

The primary commands are the same as on the CICS System panel. See “CICS System (APPLID) definition” on page 81.

The lists of related Files and Groups work the same here as on the CICS System panel. See “Files the System uses” on page 84 for the Files and “Groups the System belongs to” on page 87 for the Groups.

## Maintaining Personal SMF Files

The SMF Files view is the primary panel for maintaining your file definitions.

To display the SMF Files view:

- From the System Definitions Menu, select option 2 **Maintain SMF Files**
- From the System Definitions list panel, enter the **VIEW FILES** command or select **View->Files** in the action bar

From the list of SMF Files you can perform the following actions:

- Define a new data set using the line action **I**, or copy or repeat a data set along with its associated systems
- Use the line action **S** to update or view the systems that use a data set
- Delete a data set that is no longer required
- Use the **FIND** and **SORT** commands to locate entries in the list
- Use **Filter->Set Filter** in the action bar to display only files that match your specified criteria

```
File Edit Filter View Options Help
-----
Personal SMF Files Row 1 from 6
Command ==> _____ Scroll ==> _____

Select to review the Systems that use the SMF data set.

/ Use          SMF Data Set Name          UNIT + SEQ VOLSER +
- 123 'CICSPAOR.CMF1' _____ SYSALLDA 1_ 000010 +
- 745 'CICSPAOR.CMF2' _____ 3390 _____
- 12  'CICSPAOR.CMF3' _____
- 1   'CICSPTOR.CMF1' _____ SYSALLDA 1_ 00110_
- 0   'CICSPTOR.CMF2' _____ 3390 _____
- 23  'CICSPTOR.CMF3' _____
***** End of list *****

F1=Help      F3=Exit      F4=Prompt    F5=Rfind    F7=Backward F8=Forward
F10=Actions  F12=Cancel
```

Figure 31. System Definitions: Personal SMF Files

This panel is used to maintain SMF data sets that you want to run your Report Sets against. Through the related Systems (and their Groups), CICS PA uses the specified SMF data sets in the generation of Report Set JCL.

Each listed data set has the following attributes:

**Use** The File Use count. This indicates the number of Systems that use this File. The count ignores the Exclude indicator.

### SMF Data Set Name

The name of an SMF data set containing data for

- Report Set processing:
  - CMF performance class, exception class, and transaction resource class data (SMF 110 records)
  - DB2 accounting data (SMF 101 records)
  - WebSphere MQ accounting data (SMF 116 records)
  - System Logger data (SMF 88 records)
  - OMEGAMON XE for CICS (SMF 112 records)

- Statistics reporting:
  - CICS statistics and server statistics data (SMF 110 records)
  - CICS Transaction Gateway statistics data (SMF 111 records)

Normal ISPF data set conventions apply. Fully qualified data set names must be enclosed in quotes, except if **PROFILE NOPREFIX** is set.

If the data set is not cataloged, then specify UNIT, SEQ, or VOLSER.

### UNIT

The generic or esoteric device type of the data set, such as 3390, SYSDA, or CART. This must represent a device type that is defined in the Eligible Device Table of the current processor as either TAPE or DASD. To select one from a list of possible Units, position the cursor on the UNIT field and press **Prompt** (F4).

UNIT can be specified without a VOLSER, in which case CICS PA will use the explicitly specified device type when generating JCL but will not include the UNIT parameter in the generated JCL. In this way the JCL generation process can be made aware of the device type of a data set that is yet to be cataloged, or is cataloged on another system. CICS PA uses the device type to determine tape unit affinity when generating JCL.

### SEQ

The File Sequence Number is only required for uncataloged tape data sets. It identifies the relative position of the data set on a tape volume. Omit, or code 0 or 1 to indicate the first data set on the tape volume.

### VOLSER

The volume serial number of the data set. It is only required for uncataloged data sets. If a VOLSER is specified, then a UNIT must also be specified.

CICS PA appends a + sign to the VOLSER to indicate that the data set spans multiple volumes.

To display the VOLSER List of up to 16 volumes, enter the **V** line action or place the cursor on the VOLSER field and press **Prompt** (F4).

### Line Actions

<b>/</b>	Display the menu of line actions
<b>S</b>	Specify related Systems
<b>I</b>	Insert a blank row after this row to specify a new DSN
<b>R</b>	Repeat this row
<b>C</b>	Copy this row
<b>M</b>	Move this row
<b>A</b>	Move/Copy after this row
<b>B</b>	Move/Copy before this row
<b>D</b>	Delete this row
<b>U</b>	Select Unit from a list
<b>V</b>	Display the VOLSER List for up to 16 volumes

**Note:** A row command on this panel applies to the SMF File specification and all its associated information. For example, copying a row copies all details of the data set (name, unit, file sequence number, up to 16 volume serial numbers) and all its

System relationships. Deleting a row deletes the SMF File specification and its System relationships, but not the Systems themselves.

## Primary Commands

**SAVE** This command saves any changes you have made during this invocation of System Definitions.

Also available from **File** in the action bar.

### **FIND string**

This command (or **F**) looks for the specified character string in all columns or a subset of columns in the displayed data. The string need only be enclosed in quotes if there are embedded spaces. The search is not case sensitive. The display scrolls to the row where the string is found and positions the cursor on the matching data. To find more occurrences, use **F5** or the **RFIND** command repeatedly.

If there is no match but the search did not begin at the start of the list, the screen does not change and the message \*Bottom of data reached\* is displayed. Use **F5** or **RFIND** to search from the top. If there is no match in the entire list, the screen does not change and the message No CHARS xxx found is displayed.

Also available from **Edit** in the action bar.

### **SORT DSN**

This command sorts the list of Files on data set name. The order is retained on exit.

Also available from **Edit** in the action bar.

### **RESET**

This command (or **RES**) removes all outstanding line actions and deletes any blank rows.

Also available from **Edit** in the action bar.

### **VIEW SYSTEMS | GROUPS**

This command takes you to the Systems or Groups view. Updates are saved when you change views.

Also available from **View** in the action bar.

### **MENU**

This command takes you to the System Definitions Menu. Updates are saved.

Also available from **View** in the action bar.

## Set Filter (Files)

The Set Filter panel is displayed when you select **Filter->Set Filter** in the action bar of the SMF Files panel.

```

----- Set Filter -----
Command ==> _____

Specify or revise filtering criteria then press Enter.

SMF File   'CICSP*_____ (Blank or
                                pattern)

```

Figure 32. System Definitions: Set Filter (Files)

This facility allows you to filter the amount of information displayed in the current view.

Specify a name or pattern for **SMF File** then press **Enter** to set the filter on. Masking characters % and \* are allowed.

A file will only be displayed in the filtered view if the data set name and any enclosing quotes match the pattern. For example, 'CMF\*' will display 'CMFPERF.DATA' but not CMFEXCPT.DATA.

Files that are not displayed are not deleted. Exit, Save, or Cancel processing applies to the entire list of files, regardless of whether they are displayed or filtered out.

When filtering is in effect **Filter Mode - More:** is displayed in the top right corner after the panel title. On initial entry to the Files view, no filtering is in effect.

To reset the filter and redisplay all intervals and the row count, select **Filter->Set filter off** in the action bar. The filtering criteria will remain dormant in the Set Filter panel.

## Systems that use this File

To display the panel for maintaining the Systems that use a File, enter the line action **S** against the File listed in the Files view.

```

File Edit Options Help
-----
Systems with this File                                Row 1 to 5 of 5
Command ==> _____ Scroll ==> _____

Data Set Name . . : CICSPAOR.CMF1

/  Exc System + Type Image Description
-  *  CICSP001 CICS MVS1 CICS system CICSP001/MVS1
-  *  CICSD001 CICS MVS1 CICS system CICSD001
-  DB2P DB2 MVS1 DB2 subsystem DB2P/MVS1
-  MVS1 Image MVS system MVS1
S
***** End of list *****

F1=Help      F3=Exit      F4=Prompt      F5=Rfind      F6=Resize
F7=Backward  F8=Forward    F10=Actions   F12=Cancel

```

Figure 33. System Definitions: Systems that use this File

This panel allows you to specify the systems that use the SMF data set. To select one or more from a list of available systems, enter the line action **S** or position the cursor on the System field and press **Prompt** (F4).

**Note:** When a system is specified here, the file is added at the end of the list of files for that system. For example, see Figure 19 on page 82. You might need to adjust the order of the files into the correct time sequence.

Each system in the list has the following attributes:

**Exc** The system is marked by an asterisk \* if the file is to be Excluded from reporting for this system. Excluded data sets are not eligible for Report Set JCL generation.

Enter the line action **X** to reverse the status (Exclude/Include).

### System, Type, Image

A System is identified by the combination of:

- System name which is one of the following depending on the type:
  - CICS generic APPLID
  - MVS (SMF) Image ID
  - DB2 Subsystem ID
  - MQ Subsystem ID
  - MVS System Logger
- Type of System: CICS, Image, DB2, MQ, or Logger
- MVS (SMF) Image ID

You can enter a system name directly. Alternatively, to select one or more from a list, enter the line action **S** or press **Prompt** (F4) from the System field.

### Description

Description is free-format text up to 36 characters to describe the system. This is for your reference only, although CICS PA will insert it as a comment in your Report Set JCL.

### Line Actions

- /** Display the menu of line actions.
- S** Select System(s) from a list.
- I** Insert a blank row after this row to specify a related System. You can only specify known Systems; you cannot define new Systems from this panel.
- R** Repeat this row.
- C** Copy this row.
- M** Move this row.
- A** Move/Copy after this row.
- B** Move/Copy before this row.
- D** Delete this row. Only the relationship is deleted, not the System itself.
- X** Reverse the status (Exclude/Include).

### Primary Commands

#### FIND string

This command (or **F**) looks for the specified character string in all columns or a subset of columns in the displayed data. The string need only be enclosed in quotes if there are embedded spaces. The search is not case sensitive. The display scrolls to the row where the string is found and positions the cursor on the matching data. To find more occurrences, use **F5** or the **RFIND** command repeatedly.

If there is no match but the search did not begin at the start of the list, the screen does not change and the message \*Bottom of data reached\* is



displayed. Use **F5** or **RFIND** to search from the top. If there is no match in the entire list, the screen does not change and the message No CHARS xxx found is displayed.

Also available from **Edit** in the action bar.

### **SORT SYSTEM|TYPE|IMAGE|DESCRiption**

This command sorts the list of Systems on the specified column. The default is SYSTEM (then TYPE and IMAGE). The order is retained only until exit or another SORT command is issued.

Also available from **Edit** in the action bar.

### **RESET**

This command (or **RES**) removes all outstanding line actions and deletes any blank rows.

Also available from **Edit** in the action bar.

## **Select Systems**

The Select Systems panel is displayed when you press **Prompt** (F4) from a System field or enter line action **S** on the Systems with this File panel.

It displays the systems that are not already defined to the File. This list is a subset of the systems maintained in the System Definitions view (see Figure 15 on page 75).

Command ==> \_\_\_\_\_
Systems
Row 1 to 5 of 5

Scroll ==> \_\_\_\_\_

Select one or more Systems then press EXIT.

System	Type	Image	Description
. CICSP001	CICS	MVS1	CICS system CICSP001/MVS1
. CICS001	CICS		CICS system CICS001
. DB2P	DB2	MVS1	DB2 subsystem DB2P/MVS1
. MQSP	MQ	MVS1	MQ subsystem MQSP/MVS1
. MVS1	Logger		MVS system MVS1

\*\*\*\*\* End of List \*\*\*\*\*

Figure 34. System Definitions: Select Systems (for a File)

This panel displays a list of systems that are available for selection.

Enter a **/** or **S** line action to select one or more systems from the list.

Press **Exit** (F3) to complete your selection.

## **Maintaining Personal Groups**

The Groups view is the primary panel for maintaining your group definitions. You use Groups to group systems for reporting purposes.

To display the Groups view:

- From the System Definitions Menu, select option 3 **Maintain Group definitions**
- From the System Definitions list panel, enter the **VIEW GROUPS** command or select **View->Groups** in the action bar

From the list of Groups you can perform the following actions:

- Define a new group, or copy or repeat a group along with its associated systems

- Update or view the systems that belong to a group, or delete a group that is no longer required
- Use the **FIND** and **SORT** commands to locate entries in the list
- Use **Filter->Set Filter** in the action bar to display only groups that match your specified criteria

```

File Edit Filter View Options Help
-----
Personal Groups                               Row 1 from 4
Command ==> _____ Scroll ==> _____

Select to review the Systems in the Group.

/  Use  Group              Description
-   13  PRODMR01  Production MRO
-   34  WEEKLY    Weekly SMF data
-   8   MONTHLY  Monthly SMF data
S   2   YEARLY   Yearly SMF data
***** End of list *****

F1=Help      F3=Exit      F5=Rfind      F7=Backward  F8=Forward  F10=Actions
F12=Cancel

```

Figure 35. System Definitions: Personal Groups

This panel is used to maintain Groups. CICS PA uses the related Systems (and their SMF Files) in the generation of Report Set JCL. The Use count shows the number of Systems that are defined to each Group.

**Note:** The order of the Systems defined to the Group determine the file sequence in the generated JCL. You might need to adjust the order so the files are in the correct time sequence.

Each listed group has the following attributes:

**Use** The Group Use count. This indicates the number of Systems defined to the Group.

**Group** The name of a Group. The name can be up to eight alphanumeric (A-Z,0-9) or special (@,#,\$) characters.

A Group name is an arbitrary name used to identify a group of related Systems for reporting purposes, such as those systems that connect via IRC/MRO, ISC/APPC, IPIC, or transaction grouping.

#### Description

Description is free-format text up to 36 characters to describe the group.

#### Line Actions

```

/      Display the menu of line actions
S      Specify a group and the systems that belong to it
I      Insert a new group
R      Repeat this row
C      Copy this row
M      Move this row
A      Move/Copy after this row
B      Move/Copy before this row
D      Delete this row

```

**Note:** A row command on this panel applies to the Group definition and all its associated information. For example, copying a row copies the Group details and all its System relationships. Deleting a row deletes the Group and its relationships, but not the Systems themselves.

## Primary Commands

### **NEW name**

This command creates a new Group. The group name must be unique.

Also available from **File** in the action bar.

See Figure 37 on page 102.

**SAVE** This command saves any changes you have made during this invocation of System Definitions.

Also available from **File** in the action bar.

### **FIND string**

This command (or **F**) looks for the specified character string in all columns or a subset of columns in the displayed data. The string need only be enclosed in quotes if there are embedded spaces. The search is not case sensitive. The display scrolls to the row where the string is found and positions the cursor on the matching data. To find more occurrences, use **F5** or the **RFIND** command repeatedly.

If there is no match but the search did not begin at the start of the list, the screen does not change and the message \*Bottom of data reached\* is displayed. Use **F5** or **RFIND** to search from the top. If there is no match in the entire list, the screen does not change and the message No CHARS xxx found is displayed.

Also available from **Edit** in the action bar.

### **SORT GROUP|DEScRiption**

This command sorts the list of Groups by name (the default) or description. The order is retained on exit.

Also available from **Edit** in the action bar.

### **RESET**

This command (or **RES**) removes all outstanding line actions.

Also available from **Edit** in the action bar.

### **VIEW SYSTEMS|FILES**

This command takes you to the Systems or Files view. Updates are saved when you change views.

Also available from **View** in the action bar.

### **MENU**

This command takes you to the System Definitions Menu. Updates are saved when you go to the menu.

Also available from **View** in the action bar.

## Set Filter (Groups)

The Set Filter panel is displayed when you select **Filter->Set Filter** in the action bar of the Groups panel.

```

----- Set Filter -----
Command ==> _____

Specify or revise filtering criteria then press Enter.

Group Name . . . _____ (Blank or pattern)

```

Figure 36. System Definitions: Set Filter (Groups)

This facility allows you to filter the amount of information displayed in the current view.

Specify a name or pattern for **Group Name** then press **Enter** to set the filter on. Masking characters % and \* are allowed.

A group will only be displayed in the filtered view if the group name matches the pattern. For example, MRO% will display MRO1 but not MRO nor MRO999. MRO\* will display all three.

Groups not displayed are not deleted. Exit, Save, or Cancel processing applies to the entire list of groups, regardless of whether they are displayed or filtered out.

When filtering is in effect **Filter Mode - More:** is displayed in the top right corner after the panel title. On initial entry to the Groups view, no filtering is in effect.

To reset the filter and redisplay all intervals and the row count, select **Filter->Set filter off** in the action bar. The filtering criteria will remain dormant in the Set Filter panel.

## Systems in this Group

To display the panel for maintaining Systems that belong to a Group, enter the line action **S** (Select an existing Group) or **I** (Insert a new Group) from the Groups view.

```

File Edit Options Help
-----
Systems in this Group                                     Row 1 to 4 of 4
Command ==> _____ Scroll ==> _____

Group . . . . . : PRODMRO1
Description . . . : Production MRO_____

/ System + Type      Image      Description
- CICSPI_ CICS      SYSA      Production AOR System 1_____
- CICSPI_ CICS      SYSA      Production AOR System 2_____
- CICSPI_ CICS      SYSA      Production FOR System_____
- DB2P_   DB2       SYSA      Production DB2 System_____
***** End of list *****

F1=Help      F3=Exit      F4=Prompt    F5=Rfind     F6=Resize
F7=Backward  F8=Forward   F10=Actions  F12=Cancel

```

Figure 37. System Definitions: Systems in this Group

This panel allows you to specify the systems that belong to the Group. To select one or more from a list of available systems, position the cursor on the System field and press **Prompt** (F4) or enter the **S** line action.

A group is identified by its name and description:

## Group

The name of a Group to uniquely identify a group of systems. The name can be up to eight alphanumeric (A-Z,0-9) or special (@,#,\$) characters.

A Group name is an arbitrary name used to identify a group of related CICS systems for reporting purposes, such as those systems that connect via IRC/MRO, ISC/APPC, IPIC, or transaction grouping.

## Description

Description is free-format text up to 36 characters to describe the group.

Each system in the list has the following attributes:

## System, Type, Image

A System is identified by the combination of:

- System name which is one of the following depending on the type:
  - CICS generic APPLID
  - MVS (SMF) Image ID
  - DB2 Subsystem ID
  - WebSphere MQ Subsystem ID
  - MVS System Logger
- Type of System: CICS, Image, DB2, MQ, or Logger
- MVS (SMF) Image ID

You can enter a system name directly. Alternatively, to select one or more from a list, enter the line action **S** or press **Prompt** (F4) from the System field.

## Description

Description is free-format text up to 36 characters to describe the system. This is for your reference only, although CICS PA will insert it as a comment in your Report Set JCL.

## Line Actions

- /** Display the menu of line actions.
- S** Select System(s) from a list.
- I** Insert a blank row after this row to specify a related System.
- R** Repeat this row.
- C** Copy this row.
- M** Move this row.
- A** Move/Copy after this row.
- B** Move/Copy before this row.
- D** Delete this row. Only the relationship is deleted, not the System itself.

**Note:** You can only specify known Systems; you cannot define new Systems from this panel.

## Primary Commands

### FIND string

This command (or **F**) looks for the specified character string in all columns or a subset of columns in the displayed data. The string need only be enclosed in quotes if there are embedded spaces. The search is not case sensitive. The display scrolls to the row where the string is found and positions the cursor on the matching data. To find more occurrences, use **F5** or the **RFIND** command repeatedly.

If there is no match but the search did not begin at the start of the list, the screen does not change and the message *\*Bottom of data reached\** is

displayed. Use **F5** or **RFIND** to search from the top. If there is no match in the entire list, the screen does not change and the message No CHARS xxx found is displayed.

Also available from **Edit** in the action bar.

#### **SORT SYSTEM|TYPE|IMAGE|DESCRiption**

This command sorts the list of Systems on the specified column. The default is SYSTEM (then TYPE and IMAGE). The order is retained on exit.

Also available from **Edit** in the action bar.

#### **RESET**

This command (or **RES**) removes all outstanding line actions and deletes any blank rows.

Also available from **Edit** in the action bar.

### **Select Systems**

The Select Systems panel is displayed when you press **Prompt** (F4) from a System field or enter line action **S** on the Systems in this Group panel.

It displays the systems that are not already defined to the Group. This list is a subset of the systems maintained in the System Definitions view (see Figure 15 on page 75).

Command ==> \_\_\_\_\_
Systems
Row 1 to 4 of 4

Scroll ==> \_\_\_\_\_

Select one or more Systems then press EXIT.

System +	Type	Image	Description
. CICSP001	CICS	MVS1	CICS system CICSP001/MVS1
. CICS001	CICS		CICS system CICS001
. DB2P	DB2	MVS1	DB2 subsystem DB2P/MVS1
. MVS1	Logger		MVS system MVS1

\*\*\*\*\* End of List \*\*\*\*\*

*Figure 38. System Definitions: Select Systems (for a Group)*

This panel displays a list of systems that are available for selection.

Enter a **/** or **S** line action to select one or more systems from the list.

Press **Exit** (F3) to complete your selection.

---

## **Personal Take-Up from SMF File**

The Data Take-up panel is displayed when you select option 4 **Take-Up from SMF File** from the System Definitions Menu. However, if you opted to bypass the menu and go straight to System Definitions, you can redisplay the Menu by selecting **View->Menu** in the action bar or by entering the **MENU** command.

```

File  Options  Help
-----
                        Data Take-Up from SMF
Command ==> _____

Specify the SMF File for data take-up.

Data Set Name . . . 'CICSPA.LOGGER.SMFDATA1' _____

Specify details if data set is not cataloged:
UNIT . . . . . _____ +          VOLSER . . . _____ +
SEQ Number . . ____ (1 to 255)

Execution Mode:
1  1. Submit Batch JCL
_  2. Edit Batch JCL

F1=Help    F3=Exit    F4=Prompt  F6=Resize  F10=Actions
F12=Cancel

```

Figure 39. Personal System Definitions: Take-Up from SMF File

CICS PA can automatically populate your System Definitions with details extracted from SMF Files. This panel allows you to specify details of an SMF File for data take-up.

Specify the data set name and if not cataloged, the unit, sequence number, and up to 16 volume serial numbers.

A batch job is generated to extract the take-up details from the SMF data set. You can choose to submit the job immediately or first edit the JCL. See “Take-Up JCL” on page 106.

The options are:

#### Data Set Name

The name of an SMF data set from which you want CICS PA to extract System details for automatic take-up into your System Definitions.

Normal ISPF data set conventions apply. Fully qualified data set names must be enclosed in quotes, except if **PROFILE NOPREFIX** is set.

If the data set is not cataloged, then specify UNIT, SEQ, or VOLSER

**UNIT** The generic or esoteric device type of the data set, such as 3390, SYSDA, or CART. This must be a device type that is defined as either TAPE or DASD in the Eligible Device Table of the current processor. To select one from a list of possible Units, position the cursor on the UNIT field and press **Prompt** (F4).

**SEQ** The File Sequence Number is only required for uncataloged tape data sets. It identifies the relative position of the data set on a tape volume. Omit, or code 0 or 1 to indicate the first data set on the tape volume.

#### VOLSER

The volume serial number of the data set. It is only required for uncataloged data sets. If a VOLSER is specified, then a UNIT must also be specified.

If the data set spans multiple volumes, only the first one is displayed on this panel. To specify up to 16 volumes, position the cursor on the VOLSER field and press **Prompt** (F4) to display the VOLSER List.

## Execution Mode

Specify **1** to submit the batch job immediately.

Specify **2** to edit the JCL. From the edit panel, then enter the **SUBMIT** (or **SUB**) command to run the job.

Check the results of the batch job. See “Job output.”

When you next invoke System Definitions, you are prompted to update your System Definitions with the results of the batch job. See “Applying Take-Up details” on page 107.

## Take-Up JCL

Figure 40 is an example of the JCL that is generated to extract the take-up details from the SMF file.

```
File Edit Confirm Menu Utilities Compilers Test Help
-----
EDIT          user.SPFTEMP1.CNTL          Columns 00001 00072
Command ==> SUB                               Scroll ==> PAGE
***** Top of Data *****
000001 //CICSPA JOB (ACCOUNT),'NAME',REGION=4M
000002 //* CICS PA V5R2 Take-Up JCL
000003 //CICSPA EXEC PGM=CPASIDTU
000004 //STEPLIB DD DSN=CICSPA.V5R2M0.SCPALINK,
000005 //          DISP=SHR
000006 //CPATABLE DD DSN=user.CICSPA.TABL,
000007 //          DISP=SHR
000008 //SYSPRINT DD SYSOUT=*
000009 //SMFIN001 DD DSN=CICSPA.LOGGER.SMFDATA1,
000010 //          DISP=SHR
***** Bottom of Data *****
```

Figure 40. Personal System Definitions: JCL for data take-up

## Job output

Review the take-up job output to see the systems detected by CICS PA in the SMF file.

```
V5R2M0      17:29:39  1/13/2014      CICS Performance Analyzer      Page 1
                                     Personal Systems Take-up from SMF

CPA2012I Processing started for SMF file SMFIN001
CPA2017I SMF records for System MVS1 start at 1/13/2014 15:41:38.39
CPA2014I CMF record for CICS system found, APPLID=CICPTOR1 Release=6.9.0
CPA2014I CMF record for CICS system found, APPLID=CICPAOR1 Release=6.9.0
CPA2014I CMF record for CICS system found, APPLID=CICPAOR2 Release=6.9.0
CPA2014I CMF record for CICS system found, APPLID=CICPDOR1 Release=6.9.0
CPA2015I DB2 Accounting record found, DB2 SSID=DB2P Release=10.1
CPA2016I MVS System Logger record found, System=MVS1LOGR
CPA2013I Processing ended for SMF file SMFIN001 - 6 system(s) found
CPA2000I Take-up processing has completed, RC=0
```

Figure 41. Personal System Definitions: Take-up job output

When the take-up job has completed, you can then apply the results of the Take-up. Next time you enter System Definitions, you are prompted to apply the results of Take-up.



## Applying Take-Up details

The following panel is displayed on entry to System Definitions when you have not yet processed the results of completed batch take-up jobs.

Command ==> \_\_\_\_\_

Data Take-Up from SMF

\*\*\*\*\*  
\* Take-Up from SMF \*  
\*\*\*\*\*

CICS PA has completed extracting systems from the following  
SMF File:  
  
Data Set . . : 'CICSPA.LOGGER.SMFDATA1'

Instructions:  
Press **ENTER** to continue adding the systems.  
Enter **DEFER** command to defer adding the systems.  
Enter **END** or **CANCEL** command to cancel adding the systems.

Figure 42. Personal System Definitions: Take-up (apply results)

You have three choices:

- Press **Enter** to proceed with the take-up. CICS PA merges the results of the take-up into your System Definitions. Only systems and files not already defined are added.
- Enter the **DEFER** command to defer the take-up but proceed with System Definitions as normal. Next time you invoke System Definitions you will again be prompted to process the results of the take-up.
- Enter **END** (F3) or **CANCEL** (F12) to discard the results of the take-up and continue with System Definitions as normal.

---

## Example: Working with Personal Systems

The System Definitions facility in the CICS PA dialog requires some planning to ensure that you are able to best meet your reporting requirements. CICS PA has some powerful features that will help you to define your System Definitions. This section provides some useful tips on how to use these features.

As you work through this example, if you do not understand some points, please see Chapter 6, “Personal System Definitions,” on page 69 for clarification.

### 1. The System Definitions menu.

From the Primary Option Menu, option 1 **System Definitions** takes you to the System Definitions menu. From this menu, you are able to define your CICS systems, and maintain your SMF Files and Groups.

### 2. Using Take-up to define your CICS systems.

You can explicitly define you CICS systems, but an easier way to define your systems is by using option 4 **Take-up from SMF File**. Take-up populates your System Definitions with systems found in your SMF File.

File	Options	Help
-----		
Data Take-Up from SMF		
Command ==> _____		
Specify the SMF File for data take-up.		
Data Set Name . . . 'MVS1.SMFDATA' _____		
Specify details if data set is not cataloged:		
UNIT . . . . .	_____ +	VOLSER . . . _____ +
SEQ Number . .	_____ (1 to 255)	
Execution Mode:		
1 1. Submit Batch JCL		
2. Edit Batch JCL		

Specify the SMF File that contains records from the systems that you want to define, and then press Enter to submit the Take-up job.

Review the Take-up job output to see the systems detected by CICS PA in the File.

V5R2M0 17:29:39 1/13/2014 CICS Performance Analyzer Page 1  
Take-up from SMF

```
CPA2012I Processing started for SMF file SMFIN001
CPA2017I SMF records for System MVS1 start at 1/13/2014 15:41:38.39
CPA2014I CMF record for CICS system found, APPLID=CICPTOR1 Release=6.9.0
CPA2014I CMF record for CICS system found, APPLID=CICPAOR1 Release=6.9.0
CPA2014I CMF record for CICS system found, APPLID=CICPAOR2 Release=6.9.0
CPA2014I CMF record for CICS system found, APPLID=CICPDOR1 Release=6.9.0
CPA2023I CICS TG record for CICS system found, APPLID=CICSTG01
CPA2015I DB2 Accounting record found, DB2 SSID=DB2P Release=10.1
CPA2016I MVS System Logger record found, System=MVS1LOGR
CPA2013I Processing ended for SMF file SMFIN001 - 8 system(s) found
CPA2000I Take-up processing has completed, RC=0
```

After the take-up job has completed, you can then apply the results of the Take-up. Next time you enter System Definitions, you are prompted to apply the results of Take-up.

Data Take-Up from SMF	
Command ==> _____	
*****	
* Take-Up from SMF *	
*****	
CICS PA	
has completed extracting systems from the following	
SMF File:	
Data Set . . : 'MVS1.SMFDATA'	
Instructions:	
Press <b>ENTER</b> to continue adding the systems.	
Enter <b>DEFER</b> command to defer adding the systems.	
Enter <b>END</b> or <b>CANCEL</b> command to cancel adding the systems.	

Press Enter to complete the Take-up process.

### 3. Updating your System Definitions.

You can now update your System Definitions by using option 1 **Define Systems, SMF Files and Groups**.

```

                                Personal System Definitions
Command ==> _____ Row 1 from 8
                                Scroll ==> PAGE

Select a System to edit its definition, SMF Files and Groups.

/ System Type Image Description SMF Files
- MVS1 Image MVS1 Production MVS Image is MVS1 MVS1
- CICPAOR1 CICS MVS1 Production AOR #1 MVS1
- CICPAOR2 CICS MVS1 Production AOR #2 MVS1
- CICPDOR1 CICS MVS1 Production DOR #1 MVS1
- CICPTOR1 CICS MVS1 Production TOR #1 MVS1
- CICSTG01 CICS MVS1 Production CICS TG #1 MVS1
- DB2P DB2 MVS1 Production DB2 subsystem MVS1
- MVS1LOGR Logger MVS1 System Logger for Image MVS1 MVS1
***** End of list *****

```

You will notice that your CICS (and possibly DB2, MQ, System Logger, and CICS Transaction Gateway) systems are defined. Update the System descriptions for easier identification.

Note the SMF Files indicators. Image MVS1 “owns” the SMF File, MVS1.SMFDATA. All other systems can use Image MVS1’s file because their definitions specify the same Image name of MVS1, that is, these systems run on Image MVS1.

The systems are now ready for immediate reporting, however we will assign the systems to a Group to demonstrate Cross-System style reporting.

#### 4. Defining a Group.

You can group your systems together by defining them to a Group by using option 3 **Maintain Group definitions**. Use the **NEW** command to define a new Group.

```

                                Systems in this Group
Command ==> _____ Row 1 to 1 of 1
                                Scroll ==> PAGE

Group . . . . . PROD
Description . . . Production CICS MRO Group

/ System + Type Image Description
S _____
***** End of list *****

```

Use the **S** line action to select systems for Group PROD.

```

                                Systems
Command ==> _____ Row 1 to 11 of 11
                                Scroll ==> PAGE

Select one or more Systems then press EXIT.

/ System Type Image Description
S CICPAOR1 CICS MVS1 Production AOR #1
S CICPAOR2 CICS MVS1 Production AOR #2
S CICPDOR1 CICS MVS1 Production DOR #1
S CICPTOR1 CICS MVS1 Production TOR #1
S CICSTG01 CICS MVS1 Production CICS TG #1
S DB2P DB2 MVS1 Production DB2 subsystem
S MVS1 Image MVS1 Production MVS Image is MVS1
S MVS1LOGR Logger MVS1 System Logger for Image MVS1
***** End of List *****

```

All CICS systems, the CICS Transaction Gateway system, the DB2 subsystem, and the System Logger are selected. Exit to insert these systems into Group PROD.

```

                                Systems in this Group                                Row 1 to 6
Command ==> _____ Scroll ==> PAGE

Group . . . . . PROD
Description . . . Production CICS MRO Group

/ System + Type      Image      Description
- CICPAOR1 CICS      MVS1      Production AOR #1
- CICPAOR2 CICS      MVS1      Production AOR #2
- CICPDOR1 CICS      MVS1      Production DOR #1
- CICPTOR1 CICS      MVS1      Production TOR #1
- CICSTG01 CICS      MVS1      Production CICS TG #1
- DB2P      DB2       MVS1      Production DB2 subsystem
- MVS1LOGR  Logger    MVS1      System Logger for Image MVS1
***** End of list *****

```

Group PROD is now ready for immediate reporting.

### 5. Running a Report Set.

Select Primary Option Menu option 2 **Report Sets** to invoke the Report Sets facility.

This section will not go into the detail of specifying reports in a Report Set, but rather give examples of how to specify System Selection at run time. Note that you can specify the System(s) to be reported by defining them explicitly in the Report Set, but we will specify them at run time.

```

                                Report Sets                                Row 1 to 4 of 4
Command ==> _____ Scroll ==> PAGE

Report Sets Data Set . . : user.CICSPA.RSET

/ Name      Description      Changed      ID
___ CROSSSYS Cross-System reporting  2012/12/13 16:08 CICSPA
___ DAILY    Daily CICS Performance reports  2012/12/13 16:08 CICSPA
RUN DB2      DB2 reporting      2012/12/13 16:08 CICSPA
___ WEEKLY   Weekly CICS Performance reports  2012/12/13 16:09 CICSPA
***** End of list *****

```

Enter the **RUN** command to run Report Set DB2. This displays the Run Report Set panel from where you are able to specify the Systems to be reported.

### 6. Running a Report Set against an individual System.

To run a Report Set against an individual System, specify the CICS APPLID, DB2 SSID, MQ SSID, or Logger system name. In this example, we will run the DB2 Report Set against CICS APPLID CICPDOR1 that uses DB2 SSID DB2P.

File Systems Options Help			
-----			
Run Report Set DB2			
Command ==> _____			
Specify run Report Set submission options then press Enter to continue submit.			
System Selection:			
CICS APPLID . .	CICPDOR1	+	Image . . MVS1_____ + Group . . _____ +
DB2 SSID . . .	DB2P	+	Image . . MVS1_____ + Group . . _____ +
MQ SSID . . .	_____	+	Image . . _____ + Group . . _____ +
Logger . . .	_____	+	Image . . _____ + Group . . _____ +
_ Override System Selections specified in Report Set			
_ Read SMF File to EOF			
Missing SMF Files Option:		----- Report Interval -----	
2	1. Issue error message	From	YYYY/MM/DD HH:MM:SS.TH 2012/11/08 09:00:00.00
-	2. Leave DSN unresolved in JCL	To	2012/11/08 16:00:00.00
	3. Disregard offending reports		
Enter "/" to select option			
/ Edit JCL before submit			
F1=Help F3=Exit F4=Prompt F7=Backward F8=Forward F10=Actions			
F12=Cancel			

The generated JCL will request the DB2 report to be run against the specified CICS APPLID CICPDOR1 using DB2 SSID DB2P:

```
//JOBNAME JOB (ACCOUNT),'NAME'
//* CICS PA V5R2 Report JCL
//CICSPA EXEC PGM=CPAMAIN
//STEPLIB DD DSN=CPA.V5R2M0.SCPALINK,DISP=SHR
//SYSPRINT DD SYSOUT=*
//* SMF Input Files
//SMFIN001 DD DSN=MVS1.SMFDATA,DISP=SHR

. . .
//* Command Input
//SYSIN DD *
* Report Set =DB2
* Description=DB2 reporting
      CICSPA SMFSTART(2012/11/08,09:00:00.00),
      SMFSTOP(2012/11/08,16:00:00.00)
* Reports for System=CICPDOR1
*      Image =MVS1
*      Description=Production DOR #1
      CICSPA IN(SMFIN001),
      APPLID(CICPDOR1),
      DB2(OUTPUT(DB2R0001),
      SSID(DB2P),
      LONGSUM)
/*
```

Notice that the APPLID and SSID operands specify the CICS generic APPLID and DB2 Subsystem ID that were requested for reporting.

## 7. Running a Report Set against a Group of Systems.

To run a Report Set against a Group, specify the Group name. In this example, we will run the CROSSSYS Report Set against Group PROD.

Run Report Set CROSSSYS

Command ==> \_\_\_\_\_

Specify run Report Set submission options then press Enter to continue submit.

System Selection:

CICS APPLID . . . _____	+ Image . . . _____	+ Group . . . <b>PROD</b> _____
DB2 SSID . . . _____	+ Image . . . _____	+ Group . . . _____
MQ SSID . . . _____	+ Image . . . _____	+ Group . . . _____
Logger . . . . . _____	+ Image . . . _____	+ Group . . . _____

☐ Override System Selections specified in Report Set  
☐ Read SMF File to EOF

Missing SMF Files Option:

2 1. Issue error message

   2. Leave DSN unresolved in JCL

   3. Disregard offending reports

----- Report Interval -----

YYYY/MM/DD HH:MM:SS.TH

From 2012/11/08 09:00:00.00

To 2012/11/08 16:00:00.00

Enter "/" to select option

☐ Edit JCL before submit

F1=Help
F3=Exit
F4=Prompt
F7=Backward
F8=Forward
F10=Actions

F12=Cancel

The generated JCL will request the Cross-System report to be run against the specified Group PROD:

```
//JOBNAME JOB (ACCOUNT),'NAME'
//* CICS PA V5R2 Report JCL
//CICSPA EXEC PGM=CPAMAIN
//STEPLIB DD DSN=CPA.V5R2M0.SCPALINK,DISP=SHR
//SYSPRINT DD SYSOUT=*
//* SMF Input Files
//SMFIN001 DD DSN=MVS1.SMFDATA,DISP=SHR

. . .
//* Command Input
//SYSIN DD *
* Report Set =CROSSSYS
* Description=CICS PA Report Set
      CICSPA SMFSTART(2012/11/08,09:00:00.00),
      SMFSTOP(2012/11/08,16:00:00.00)
* Reports for Group=PROD
*      Description=Production CICS MRO Group
      CICSPA IN(SMFIN001),
      APPLID(CICPAOR1,
      CICPAOR2,
      CICPTOR1,
      CICPDOR1),
      CROSS(OUTPUT(CROS0001),
      EXTERNAL(CPAXW001),
      PRINTMULTIPLE,NOPRINTSINGLE,NOWRITE)
/*
```

Notice that the APPLID operand specifies all CICS generic APPLIDs belonging to group PROD which was the Group requested for reporting.

## 8. Running a Report Set against all Systems on an MVS Image.

To run a Report Set against an Image, specify the Image name. In this example, we will run the DAILY Report Set against Image MVS1.

Run Report Set DAILY

Command ==> \_\_\_\_\_

Specify run Report Set submission options then press Enter to continue submit.

System Selection:

CICS APPLID . . \_\_\_\_\_ + Image . . **MVS1**\_\_\_\_\_ + Group . . \_\_\_\_\_ +

DB2 SSID . . . \_\_\_\_\_ + Image . . \_\_\_\_\_ + Group . . \_\_\_\_\_ +

MQ SSID . . . \_\_\_\_\_ + Image . . \_\_\_\_\_ + Group . . \_\_\_\_\_ +

Logger . . . . \_\_\_\_\_ + Image . . \_\_\_\_\_ + Group . . \_\_\_\_\_ +

\_ Override System Selections specified in Report Set

\_ Read SMF File to EOF

Missing SMF Files Option:

2 1. Issue error message

\_ 2. Leave DSN unresolved in JCL

3. Disregard offending reports

Enter "/" to select option

\_ Edit JCL before submit

F1=Help      F3=Exit      F4=Prompt      F7=Backward      F8=Forward      F10=Actions

F12=Cancel

----- Report Interval -----

YYYY/MM/DD HH:MM:SS.TH

From 2012/11/08 09:00:00.00

To 2012/11/08 16:00:00.00

The generated JCL will request the Performance Summary report to be run against the specified Image MVS1. Note the NOAPPLID operand, which specifies that all CICS systems are reported.

```

//JOBNAME JOB (ACCOUNT),'NAME'
//* CICS PA V5R2 Report JCL
//CICSPA EXEC PGM=CPAMAIN
//STEPLIB DD DSN=CPA.V5R2M0.SCPALINK,DISP=SHR
//SYSPRINT DD SYSOUT=*
//* SMF Input Files
//SMFIN001 DD DSN=MVS1.SMFDATA,DISP=SHR

. . .
//* Command Input
//SYSIN DD *
* Report Set =DAILY
* Description=Daily CICS Performance reports
    CICSPA SMFSTART(2012/11/08,09:00:00.00),
        SMFSTOP(2012/11/08,16:00:00.00)
* Reports for Image=MVS1
*     Description=Production MVS Image is MVS1
    CICSPA IN(SMFIN001),
        NOAPPLID,
        SUMMARY(OUTPUT(SUMM0001),
            INTERVAL(00:15:00),
            FIELDS(STOP(TIMES),
                TRAN,
                TASKCNT,
                RESPONSE(AVE),
                RESPONSE(MAX),
                DISPATCH(TIME(AVE)),
                CPU(TIME(AVE)),
                SUSPEND(TIME(AVE)),
                DISPWAIT(TIME(AVE)),
                FCWAIT(TIME(AVE)),
                FCAMCT(AVE),
                IRWAIT(TIME(AVE)),
                SC24UHW(M(AVE)),
                SC31UHW(M(AVE)),
                TITLE1(
                    'Transaction Summary by Time-of-Day
/*
'))

```



---

## Chapter 7. Shared System Definitions

Shared System Definitions define the CICS and other related systems to be reported via Report Sets or HDB. Shared System Definitions are saved in the Repository, and can be referenced by everyone who shares the same Repository.

---

### Use Shared or Personal?

Shared System Definitions offer an alternative to using Personal System Definitions (see Chapter 6, “Personal System Definitions,” on page 69). The advantages of using Shared System Definitions include:

- All CICS PA users can share the same definitions, avoiding duplication.
- SMF File selection for batch reporting requests is automated.
- One or more Personal System Definitions can be consolidated in to a single Shared System Definition repository by using Take-up.
- Support for SMF data in log streams.

At Report Set or HDB run time, you can choose to use either Personal System Definitions or Shared System Definitions to select the SMF input data sets, or to merge both sets of definitions. Merging Personal and Shared definitions gives great flexibility in combining systems without the need for duplicating definitions.

Use **Systems** in the action bar to switch between using only Personal System Definitions, only Shared System Definitions, or both. If you choose to use both, you can specify which is to take precedence if there are two definitions with the same name. In the following figure, option 5 is selected so the Personal System Definitions would take precedence.

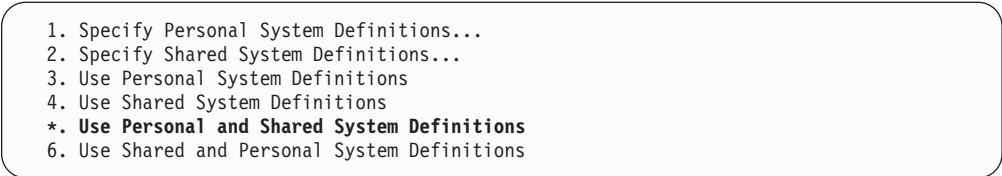
- 
1. Specify Personal System Definitions...
  2. Specify Shared System Definitions...
  3. Use Personal System Definitions
  4. Use Shared System Definitions
  - \*. Use Personal and Shared System Definitions
  6. Use Shared and Personal System Definitions

Figure 43. Systems action bar: Use Personal or Shared System Definitions

---

### Shared SMF File definitions

Shared SMF File definitions provide automatic SMF file selection when you generate Report Set or HDB load JCL. There are three types of SMF File definitions: daily SMF files, cyclic SMF files, and SMF log streams.

#### Daily SMF files

Daily SMF files span a period of time for the current day (today). They are used when you request reporting for today.

Daily SMF files are typically GDGs, one generation created by each SMF dump (IFASMFDP) job. They can only be defined by the **Take-up from SMF File** facility.

A daily SMF file remains available for reporting until you uncatalog or delete its data set. When a daily SMF data set is uncataloged or deleted,

CICS PA marks its SMF file definition as “expired” (no longer available for reporting). To delete expired daily SMF file definitions, run the HDB housekeeping utility.

### **Cyclic SMF files**

There are two types of cyclic SMF file:

#### **Cyclic files with an origin**

These files cover a known period of time, according to the origin, interval, and DISP values that you specify. CICS PA uses these values to determine which data sets to select for a requested reporting period. These cyclic SMF files are typically GDGs. For example, a weekly SMF GDG where the most recent cycle (generation 0) spans the current week, -1 is last week, and so on. CICS PA supports various intervals, including daily, weekly, monthly, yearly and fixed (number of days) cycles.

#### **Cyclic files with no origin**

Cyclic SMF files with an origin value of NONE (no origin) cover an undetermined period of time. Specify an origin of NONE when you want to explicitly select a particular SMF data set for reporting, regardless of the reporting period.

You cannot report on a mix of cyclic SMF files with and without origins. If a system contains definitions for cyclic SMF files with and without origins, then you must either exclude the files with no origin, or exclude all of the others.

You specify one or more cyclic SMF file definitions that match the way you collect and manage long-term SMF data at your installation.

### **SMF log streams**

CICS PA can read SMF log streams directly, giving you access to very recent data without the need for the SMF dump utility to first create an offline file. CICS PA can locate and process the required SMF data quickly, regardless of whether the reporting period spans several months or the last few minutes.

Like data sets, log streams are referenced by name. Wherever a log stream is specified in the product, the name must be prefixed with IFASMF and cannot be enclosed in quotes. Example:

```
IFASMF. FTS1.SMF.MAN1
```

There are two types of log stream: Coupling Facility (CF) and DASD-only. CF log streams are available to all images in the plex and do not require any special processing. DASD-only log streams are created by and can only be accessed by their local MVS Image. DASD-only log streams require the CICS PA job to be run on their local system and therefore require special handling.

It is possible to route different SMF records to separate log streams, so that for example one log stream contains CMF records, while another contains DB2 records, and yet another contains WebSphere MQ records. Since some CICS PA reports combine records from different data sources, CICS PA supports multiple log streams as input into reports.

Log streams have almost unlimited capacity. Therefore, when processing log streams in CICS PA, specification of the reporting time range is mandatory.

The DASDONLY profile option (menu option 0.5) determines the log stream type for all log streams in all system definitions. If selected, this option indicates that all log streams will be treated as DASD-only and will require an Image name to execute. If DASDONLY is not selected, all log streams are treated as CF log streams.

**Note:** Sites that have a mix of CF and DASD-only log streams are limited in their ability to combine the two log stream types. For example, if CICS SMF records are written to a DASD-only log stream and DB2 records are written to a CF log stream in different system images, a System Definition must be defined for every combination of DB2 and Image since the CICS and DB2 Images must be the same to be selected for DASD-only log streams.

## Log stream retention period (RETPD)

SMF log streams have a retention period specified in days (0-65536). Records older than the retention period are considered inactive but might not be deleted immediately. Inactive records that are still stored in the log stream are available for reporting through CICS PA.

You can specify a RETPD value in the system definition. This value is used to calculate a start date for CICS PA reporting. It has no effect on the SMF log stream itself. Specify a value in the following range:

**0** All records in the log stream are eligible for reporting.

**( < the log stream retention period)**

Records older than this are not eligible for reporting.

**( = the log stream retention period)**

Recommended. All active records are eligible for reporting.

**( > the log stream retention period)**

Records within this period are eligible for reporting even if they are inactive.

**65536** The maximum value.

## File selection at run time

When Shared System Definitions are used, all batch requests (that require SMF input) will have their SMF file DD statements generated automatically from either the Daily SMF File or Cyclic SMF File or log stream definitions. Specify the required reporting interval, and CICS PA will automatically select the required SMF files for your job.

If reporting is required for today, then CICS PA will use the Daily SMF Files (if available). Otherwise, CICS PA will use the Cyclic SMF File definitions to satisfy your request. If no SMF file definitions cover the required reporting interval, then CICS PA will honor the “Missing SMF Files Option” on the run panel.

A log stream is only selected if the report interval Start time falls within the span of the log stream and the “Use Log Streams when available” profile option is selected. Otherwise, normal file selection is performed. The log stream retention period (RETPD) in the System Definition is used to determine the start time of the first record in the log stream.

To avoid double accounting of SMF data, JCL generation prevents the use of a log stream with SMF files. However, you can define a log stream and SMF files in the same System Definition and either the log stream or files will be selected based on the specified report interval.

## Shared System Definitions Menu

Shared System Definitions are saved in the Repository.

To maintain Shared System Definitions, select option 1 **Systems** from the Primary Option Menu, and then select option 2 **Shared Systems** from the Systems menu. Alternatively, you can select **Systems** in the action bar of reporting panels (see Figure 43 on page 115). The Shared System Definitions Menu panel is shown in Figure 44.

FileOptionsHelp

Shared System Definitions Menu

Command ==>

Select an option then press Enter

1

1. Define Systems and their SMF Files

2

2. Maintain Group definitions

3

3. Take-up from Personal System Definitions

4

4. Take-up from SMF File

Enter "/" to select option

\_

Always go directly to Systems View

Repository . . . 'CICSPA.XYX.REPOSTRY' +

F1=HelpF3=ExitF4=PromptF6=ResizeF10=ActionsF12=Cancel

Figure 44. Shared System Definitions Menu

## Maintaining Shared System Definitions

Select option 1 **Define Systems and their SMF Files** from the Shared System Definitions Menu.

FileEditFilterViewMass\_UpdateOptionsHelp

Shared System Definitions

Row 1 from 44

Command ==> new dynamic cics Scroll ==> CSR\_

Select a System to edit its definition and SMF Files.

/	System	Type	Image	Description	SMF Files
-	IYK2Z1V2	CICS	MV2CCICS	SELUOW Testing	IYK2Z1V2
-	MV2CCICS	Image		Image inserted by System IYK2Z1V2	
-	A640	CICS	640	CICS TS 3.1 Support testing	A640
-	A@\$2	Image		System added by take-up	A@\$2
-	A@\$2LOGR	Logger	A@\$2	System added by take-up	A@\$2
-	CICS	Image		System added by take-up	CICS
-	SCSCPJA6	CICS	SC66	System added by take-up	SCSCPJA6
-	CICS53A1	CICS	P390	copy from previous one	CICS53A1
-	CICS53T1	CICS	P390	System added by take-up	P390
-	CICSTG1	CICS	640	CICS TG system added by take-up	CICS

Figure 45. Shared System Definitions: List of systems

The Shared System Definitions list is similar to the Personal System Definitions list. Shared systems differ slightly from personal systems because the file definitions are different.

Enter the **NEW** command or press **F6** to define a new system, or enter line action **S** to select a system from the list.

CICS PA supports the following types of system definitions:

- CICS (APPLID)
- MVS Image
- DB2
- MQ
- System Logger

## CICS System (APPLID) definition

The CICS System details are presented across three views:

1. System Definition attributes
2. Cyclic SMF Files
3. Daily SMF Files

Press **Next** (F11) or **Prev** (F10) to move between the views.

### View 1. System Definition attributes

The first view displays all the System Definition attributes.

File Dictionary Options Help

-----

EDIT CICS System More: < >

Command ==> \_\_\_\_\_

CICS System definition:

APPLID . . . . . DYNAMIC\_ MVS Image . . . \_\_\_\_\_ VRM . . :

Description . . . . . \*\* New CICS system \*\* \_\_\_\_\_

System View:

1 1. Attributes 2. Cyclic SMF Files 3. Daily SMF Files

Specify System Attributes:

MCT Suffix . . . . . \_\_\_\_\_

MCT Load Library . . \_\_\_\_\_

SDFHLOAD Library . . \_\_\_\_\_

Dictionary DSN . . . \_\_\_\_\_

SMF Log Stream . . . \_\_\_\_\_ RETPD \_\_\_\_\_

F1=Help F3=Exit F7=Backward F8=Forward F10=Prev F11=Next

F12=Cancel

Figure 46. Shared CICS System attributes

For detailed information about specifying the fields on the **Attributes** view, see “CICS System (APPLID) definition” on page 81.

### View 2. Cyclic SMF Files

The second view displays Cyclic SMF File definitions.

Cyclic SMF files are the definitions of SMF Files that cover a continuously recurring period of time, and consistently contain data for this system.

Cyclic SMF files are typically GDGs. For example, a weekly SMF GDG where the most recent cycle (generation 0) spans the current week, -1 is last week, and so on.

You specify one or more Cyclic SMF file definitions that match the way you collect and manage long-term SMF data at your installation. CICS PA supports the many ways you can setup your SMF environment, including daily, weekly, monthly, yearly and fixed (number of days) cycles.

The Cyclic SMF File definitions are used at report request time. Cyclic SMF Files are automatically inserted into your Report request JCL when you request reporting for a time period that is spanned by an active generation of a cycle, and Shared System Definitions are active (not Personal. Refer to **Systems** in the action bar when submitting a Report request).

For systems that share SMF Files, it is recommended that Cyclic SMF Files be defined to the associated MVS Image (rather than each System repetitively). CICS PA will detect this and use the SMF Files defined to the Image.

```

File Edit Options Help
-----
EDIT                                     CICS System                      Row 1 of 1 More: < >
Command ==> _____ Scroll ==> PAGE

CICS System definition:
APPLID . . . . . DYNAMIC_ MVS Image . . . _____ VRM . :
Description . . . . . ** New CICS system ** _____

System View:
_ 1. Attributes    2. Cyclic SMF Files    3. Daily SMF Files

/ Exc Cyclic SMF File GDG Base or Data Set Name      Origin      Interval DISP
-----
***** Bottom of data *****

F1=Help      F3=Exit      F5=Rfind      F7=Backward  F8=Forward  F10=Prev
F11=Next     F12=Cancel

```

Figure 47. Shared CICS System Cyclic SMF Files

The Cyclic File details are:

#### Cyclic SMF File GDG Base or Data Set Name

The SMF File GDG Base name, or the SMF File data set name. For example:

```
'SMF.MVS1.DAILY'
'CICSPROD.SMF.WEEKLY'
```

You can use the following symbolic variables in an SMF File data set name:

```
&YYYY      4-digit year
&YY        2-digit year (20yy)
&MM        Month (01–12)
&DD        Day of the month (01–31)
&DDD       Day of the year (001–366)
```

For example:

```
'CICSPROD.SMF.D&YY&MM&DD'
'CICSPROD.SMF.D&YY.&MM.&DD'
```

You can optionally terminate a variable name with a period. This period will not appear in the resolved data set name, so these examples resolve to the same name. If you want a period to appear after a variable value in the resolved name, insert a second period:

```
'CICSPROD.SMF.Y&YYYY..D&DDD'
```

If you use symbolic variables:

- In the Origin field, use asterisks to represent the digits of the origin date that are determined by symbolic variables.
- The origin date and the interval must be compatible with the symbolic variables. For example, if you use the variable &DDD, then the origin date must be in Julian format.

## Origin

The starting point of each new interval, defining the point in time when the SMF file was created. Origin can be:

**Day** A new cycle starts every day, defining a daily cycle.

### Day of the week

A new cycle starts on the specified day, defining the start of a weekly cycle. Allowed values are the seven days of the week: MONDAY, TUESDAY, WEDNESDAY, THURSDAY, FRIDAY, SATURDAY, SUNDAY.

**Date** The first cycle starts on the specified date, and continues cycling forwards from that point in time. Cycles that commence on a date are monthly, yearly or fixed number of days cycles.

If the SMF data set name does not include symbolic variables, then the allowed values are:

```
yyyy-mm-dd
****-mm-dd
yyyy-ddd
****-ddd
```

where \*\*\*\* specifies the current year, indicating that the cycle restarts from this point every year.

If the SMF data set name includes symbolic variables, then there are many more allowed values: you use asterisks in the origin value to match the symbolic variables in the data set name. For some examples, see “How CICS PA selects cyclic SMF files for reporting” on page 123.

## CDATE

A new cycle starts on the file creation date. The SMF file contains data starting from the date the file was created.

**Note:** If you specify CDATE, CDATE+*nnn*, or CDATE-*nnn*, and the value resolves to a date earlier than 2000/01/01 (January 1, 2000), then the date is treated as if you had specified 2000/01/01.

### CDATE+*nnn*

A new cycle starts *nnn* number of days after the file creation date. That is, the SMF file contains data starting *nnn* number of days after the file was created. For example, CDATE+1 specifies a file that is created before midnight to contain tomorrow's data.



**CDATE-*nnn***

A new cycle starts *nnn* number of days before the file creation date. That is, the SMF file contains data starting *nnn* number of days before the file was created. For example, CDATE-5 specifies a file that is created and then filled with data starting from five days ago.

**NONE**

No origin. Specify NONE when you want to explicitly select a particular SMF file for ad-hoc reporting, rather than CICS PA selecting appropriate SMF files for a requested reporting period. You cannot report on a mix of files with and without origins. If a system contains cyclic SMF file definitions with an origin of NONE and cyclic SMF file definitions with other origin values, then you must either exclude the files with an origin of NONE, or exclude all of the others.

**Interval**

The time duration of one cycle of data. Interval can be a number of days (0 indicating an indefinite interval) or DAY, WEEK, MONTH, YEAR.

The allowed interval values depend on the Origin specification:

**Origin Interval**

**DAY** 1 (day)

**Day of the week**

WEEK

**Date** All allowed values

**DISP** Specifies whether the SMF file accumulates (DISP=MOD) data or does not accumulate (DISP=OLD) data over the interval.

**DISP=MOD**

New cycles commence at the start of an interval, and continuously append new data to the SMF file until the end of the interval. For example, a daily SMF file is created at the start of the day and is continuously updated during the day by the SMF dump process. The most recent generation of the SMF file contains data for the current interval (today). DISP=MOD cycles cover the current interval (up until today).

**DISP=OLD**

New cycles are created at the end of the interval. For example, a weekly SMF file that is created at the end of the week from the daily SMF files for that week. The most recent generation contains data for the previous interval (last week), not the current interval (this week). Note that a weekly SMF file could also be defined as DISP=MOD if it is being built on a daily basis. DISP=OLD cycles do not cover the current interval. Other cyclic (or Daily) SMF Files are required in this case.

**Line Actions:** The valid line actions for the Cyclic SMF Files view are:

- /** Display the selection list of line actions
- I** Insert a blank row for entry of a related file
- R** Repeat this row
- C** Copy this row
- M** Move this row
- A** Move/Copy after this row
- B** Move/Copy before this row



- D Delete this row
- X Reverse Exclude Status (CICS PA omits excluded files from report requests)
- S Show a list of the data sets that belong to the GDG base or that match the data set name for this SMF file

## Methods of managing SMF data sets

Cyclic file definitions support several methods of managing SMF data sets. Select one (or more) of the following methods that best suits your environment:

### GDG SMF files

Generation Data Group data sets span a regular interval: for example, daily, weekly, monthly, yearly, and fixed (number of days) cycles. Define GDG cyclic files by specifying the GDG base name. CICS PA will use this definition when one or more of the generations cover the required reporting period.

### SMF files with symbolic date variables

SMF files with symbolic date variables have data set names that change according to the date they were created. For example, `CICSPROD.D&YY&MM&DD..SMF` defines an SMF file that is created daily to contain today's SMF data. In this case, `CICSPROD.D060331.SMF` contains data for March 31, 2006.

### SMF files with fixed data set names

SMF files with fixed data set names cover a period of time determined by the interval that you specify. For example, `CICSPROD.JULY.SMF` contains SMF data for the month of July.

### Ad hoc SMF files

Ad hoc SMF files have fixed data set names, cover an undetermined period of time (an origin value of NONE), and are used for every report request regardless of the requested reporting period. For example, `CICSPROD.SMF` has SMF data that covers a recent time period that you want to use for every report request. Ad hoc SMF files are selected in the same way as SMF files defined in personal system definitions; that is, they are always selected if not excluded. Ad hoc SMF files cannot be specified with other cyclic SMF file types as they are incompatible.

## How CICS PA selects cyclic SMF files for reporting

You cannot report on a mix of cyclic SMF files with and without origins. If a system contains some cyclic SMF file definitions with origins and some without, then you must either exclude the files with no origin, or exclude all of the others. CICS PA does not select excluded files for reporting.

If you exclude the files with origin values, then CICS PA selects all of the files with no origin, regardless of the requested reporting period.

Otherwise, CICS PA calculates a "from" date and a "to" date for each file, indicating the date range of its SMF records. If this range overlaps or falls entirely within the requested reporting period, then CICS PA might use this file, depending on whether other files also meet this requirement. If a sequence of several files covers the same required date range, without gaps, as a single file, then CICS PA uses the sequence of files instead of the single file. CICS PA selects the combination of files that result in the least gap in data, without any overlaps. This ensures that, while a report can contain gaps, it will never contain duplicate data.

CICS PA calculates “from” and “to” dates based on the origin, interval, and DISP values for each cyclic SMF file. The following table shows the allowed combinations of origin, interval, and DISP, and the resulting “from” and “to” dates.

**Tip:** To view the “from” and “to” date for a cyclic SMF file, enter line action S next to the file definition. To view the “from” and “to” dates for all cyclic SMF files for the system, enter SHOW on the command line.

Table 2. Allowed combinations of origin, interval, and DISP for cyclic SMF files

Origin	Interval	DISP	From date	To date
DAY	1	MOD	Today	
		OLD	Yesterday	
<i>day of week</i>	WEEK	MOD	If <i>day of week</i> is today, then the “from” date is today.  Otherwise, the “from” date is the previous occurrence of that day of the week.	“From” date + (interval - 1 day)  For example, for an interval of WEEK:  “From” date + 6 days
		OLD	As for MOD, but one week prior.  For example, if <i>day of week</i> is Friday, and today is Monday, then the “from” date is not the Friday just passed, but the Friday before that.	
<i>yyyy-mm-dd</i> <i>yyyy-ddd</i>	DAY WEEK MONTH YEAR <i>number of days</i>	MOD	If the range of dates from the origin to “origin + interval” includes today, then the “from” date is the origin.  Otherwise, step the date range forwards one interval at a time until the date range includes today. The “from” date is the start of that date range.	
		OLD	As for MOD, but one interval prior.	
	0	Not applicable	Origin	
<i>****-mm-dd</i> <i>****-ddd</i>  See “Origin values for data set names with symbolic variables” on page 125 for other allowed values.	Any	MOD	Origin (with current year in place of ****)	“From” date + (interval - 1 day)
		OLD	One interval before the origin	
CDATE CDATE+nnn CDATE-nnn	DAY WEEK MONTH YEAR <i>number of days</i>	Not applicable	File creation date (plus or minus <i>nnn</i> days)	“From” date + (interval - 1 day)  For a GDG, only the “to” date of the latest generation is calculated in this way. For earlier generations, the “to” date is determined by the “from” date of the next generation.
NONE	Not applicable			

## Origin values for data set names with symbolic variables

Table 2 on page 124 shows the origin values with asterisks that are allowed if you do not use symbolic variables to specify the data set name of the SMF file. If you use symbolic variables, then there are many more allowed combinations of origin values with asterisks: you use asterisks in the origin value to match the symbolic variables in the data set name. For example (this is not a comprehensive list of the combinations):

*Table 3. Example SMF data set names with symbolic variables, and their allowed origin values*

Data set name	Origin
SMF.DAILY.D&YY.&MM.&DD..SAVE	20**-*_*_**
SMF.DAILY.D&MM&DD	****_*_*_**
SMF.DAILY.J&DDD	****_***
SMF.DAILY.D&DD	****_*_*_**
SMF.MONTHLY.M&YY&MM	20**-*_*-dd
SMF.MONTHLY.M&MM	****_*_*-dd
SMF.A&YYYY	****-ddd
SMF.A&YY	****-mm-dd
SMF.D&YYYY&DDD	****_***

## Verifying that you have correctly defined your cyclic SMF files

CICS PA uses cyclic SMF file definitions to determine which SMF data sets to use for a report request. Except for SMF files with no origin, CICS PA uses the origin, interval, and DISP values in these definitions to calculate the “from” and “to” date range for each SMF file, and uses this range to determine whether to use the file for a particular reporting period.

To verify that you have correctly defined a cyclic SMF file, so that its data sets covers the expected date range, enter line action S next to the file definition.

To show the date ranges for all SMF files for the system, enter SHOW on the command line.

For details on how CICS PA determines these dates, see “How CICS PA selects cyclic SMF files for reporting” on page 123.

```

VIEW          JCH.SPFTEMP1.CNTL                      Columns 00001 00072
Command ==>                                         Scroll ==> PAGE
***** ***** Top of Data *****
000001 /*
000002 /* APPLID . . . . . DYNAMIC
000003 /* MVS Image . . . . .
000004 /* Description . . . . . ** New CICS system **
000005 /*
000006 /* 1. DSN=CPPX.SMF1.DAILY
000007 //SMFIN001 DD DSN=CPPX.SMF1.DAILY(-11),
000008 //          DISP=SHR From: 2006/03/25          To: 2006/03/25
000009 //SMFIN002 DD DSN=CPPX.SMF1.DAILY(-10),
000010 //          DISP=SHR From: 2006/03/26          To: 2006/03/26
000011 //SMFIN003 DD DSN=CPPX.SMF1.DAILY(-9),
000012 //          DISP=SHR From: 2006/03/27          To: 2006/03/27
000013 //SMFIN004 DD DSN=CPPX.SMF1.DAILY(-8),
000014 //          DISP=SHR From: 2006/03/28          To: 2006/03/28
000015 //SMFIN005 DD DSN=CPPX.SMF1.DAILY(-7),
000016 //          DISP=SHR From: 2006/03/29          To: 2006/03/29
000017 //SMFIN006 DD DSN=CPPX.SMF1.DAILY(-6),

```

Figure 48. Showing the available cyclic SMF data sets, and their from and to dates

## Cyclic GDG examples

Here are some examples of Cyclic SMF File GDGs.

### One day cycle for each day of the week

SMF.DAILY(0) contains data for today, SMF.DAILY(-1) contains data for yesterday, and so on.

GDG Base: SMF.DAILY      Origin: DAY      Interval: DAY      DISP: MOD

### Weekly cycle

Each cycle contains data for a whole week, from Monday to Sunday inclusive. SMF.WEEKLY(0) contains data for previous week starting on Monday, SMF.WEEKLY(-1) contains data for two weeks ago, and so on. Data for this week (starting on Sunday) can only be obtained from the SMF.DAILY cycle.

GDG Base: SMF.WEEKLY      Origin: MONDAY      Interval: WEEK      DISP: OLD

### Monthly cycle

Each cycle contains data for a whole calendar month, from the first of the month to the end. SMF.MONTH(0) contains data for previous calendar month, SMF.MONTH(-1) contains data for two months ago, and so on.

GDG Base: SMF.MONTH      Origin: \*\*\*\*-001      Interval: MONTH      DISP: OLD

### Fixed number of Days cycle

Each cycle contains data for a 28 day period. The oldest cycle starts on 2004-03-07.

GDG Base: SMF.DAYS28      Origin: 2004-03-07      Interval: 28      DISP: OLD

### Yearly cycle

Each cycle contains data for a whole calendar year, from January to December inclusive. SMF.YEAR (0) contains data for last year, SMF.YEAR(-1) contains data for two years ago, and so on..

GDG Base: SMF.YEAR      Origin: \*\*\*\*-001      Interval: YEAR      DISP: OLD

## Cyclic SMF File Data Set Name examples

Here are some examples of Cyclic SMF File data set names.

**Today** SMF.TODAY contains data for the current day (today).

DSN: SMF.TODAY      Origin: DAY      Interval: DAY      DISP: MOD

### Current week

SMF.WEEK contains data for this week, starting on Monday.

DSN: SMF.WEEK                      Origin: MONDAY              Interval: WEEK              DISP: MOD

### Monthly cycle

Each data set contains data the specified calendar month. If the current month is June, then SMF.JUN contains data for this month, SMF.MAY for the previous month, SMF.JUL for last July for example.

DSN: SMF.JAN                      Origin: \*\*\*\*-01-01      Interval: MONTH      DISP: MOD

DSN: SMF.FEB                      Origin: \*\*\*\*-02-01      Interval: MONTH      DISP: MOD

. . .

DSN: SMF.DEC                      Origin: \*\*\*\*-12-01      Interval: MONTH      DISP: MOD

## View 3. Daily SMF Files

Daily SMF Files are the definitions of SMF Files created today that contain data for this system.

File Options Help

-----

EDIT    CICS System                      Row 1 of 67 More: >  
Command ==>    Scroll ==> PAGE

CICS System definition:  
APPLID . . . . . DYNAMIC\_ MVS Image . . .                      VRM . . :  
Description . . . . . \*\* New CICS system \*\*

System View:  
3 1. Attributes    2. Cyclic SMF Files    3. Daily SMF Files

/ Daily SMF File Data Set Name                      ----- Start ----- - Stop -  
CICPRO.SMF.G1499V00                      2012-11-17 20.10.05 00.00.00  
CICPRO.SMF.G1496V00                      2012-11-17 16.09.57 \*EXPIRED  
CICPRO.SMF.G1494V00                      2012-11-17 12.06.36 \*EXPIRED  
CICPRO.SMF.G1493V00                      2012-11-17 10.28.31 \*EXPIRED  
CICPRO.SMF.G1491V00                      2012-11-17 08.05.42 \*EXPIRED  
CICPRO.SMF.G1489V00                      2012-11-17 04.11.35 \*EXPIRED  
CICPRO.SMF.G1487V00                      2012-11-17 00.15.28 \*EXPIRED  
CICPRO.SMF.G1485V00                      2012-11-16 20.03.20 \*EXPIRED  
CICPRO.SMF.G1483V00                      2012-11-16 16.09.13 \*EXPIRED  
CICPRO.SMF.G1481V00                      2012-11-16 14.13.09 \*EXPIRED  
CICPRO.SMF.G1479V00                      2012-11-16 11.01.03 \*EXPIRED  
CICPRO.SMF.G1478V00                      2012-11-16 08.10.58 \*EXPIRED  
CICPRO.SMF.G1476V00                      2012-11-16 04.06.50 \*EXPIRED  
F1=Help              F3=Exit              F5=Rfind              F7=Backward    F8=Forward    F10=Prev  
F11=Next              F12=Cancel

Figure 49. Shared CICS System Daily SMF Files

The **Take-up from SMF File** process manages the list of SMF Files automatically. Manual updating of Daily SMF File definitions is not required.

JCL to run Take-up is generated from option 4 from the Shared System Definitions Menu. Take-up typically runs as a second step to the SMF Dump process, to keep track of data sets (usually GDGs) created during the day. Refer to SCPASAMP(CPAHDB) for an example of how to run take-up in conjunction with the SMF Dump process.

The Daily SMF File definitions are used at report request time. Daily SMF Files are automatically inserted into your Report request JCL when you request reporting for a time period spanning today and Shared System Definitions are active (not Personal. Refer to **Systems** in the action bar when submitting a Report request).

Either run **HDB Housekeeping** to remove expired Daily SMF File definitions or enter line action **D** to delete unwanted Daily SMF File definitions from the list.

---

## Image definition

Like CICS System details, Image details are presented across three views:

1. System Definition attributes
2. Cyclic SMF Files
3. Daily SMF Files

The first view displays the System Definition attributes. Press **Next** (F11) or **Prev** (F10) to move between the views.

```
File  Options  Help
-----
EDIT                               MVS Image
Command ==>> _____

MVS Image System definition:
MVS Image . . . . MVS2_____
Description . . . . . ** New Image system ** _____

System View:
 1 1. Attributes   2. Cyclic SMF Files   3. Daily SMF Files

Specify System Attributes:
SMF Log Stream . . . _____ RETPD _____
```

*Figure 50. Shared Image attributes*

Cyclic and Daily SMF File views for an Image are the same as for a CICS System. See “View 2. Cyclic SMF Files” on page 119 and “View 3. Daily SMF Files” on page 127.

---

## DB2 System definition

Like CICS System details, DB2 System details are presented across three views:

1. System Definition attributes
2. Cyclic SMF Files
3. Daily SMF Files

The first view displays the System Definition attributes. Press **Next** (F11) or **Prev** (F10) to move between the views.

```
File  Options  Help
-----
EDIT                               DB2 Subsystem
Command ==>> _____

DB2 System definition:
DB2 SSID . . . . . DB2_  MVS Image . . . _____
Description . . . . . ** New DB2 system ** _____

System View:
 1 1. Attributes   2. Cyclic SMF Files   3. Daily SMF Files

Specify System Attributes:
SMF Log Stream . . . _____ RETPD _____
```

*Figure 51. Shared DB2 Subsystem attributes*

Cyclic and Daily SMF File views for a DB2 System are the same as for a CICS System. See “View 2. Cyclic SMF Files” on page 119 and “View 3. Daily SMF Files” on page 127.

## MQ System definition

Like CICS System details, MQ System details are presented across three views:

1. System Definition attributes
2. Cyclic SMF Files
3. Daily SMF Files

The first view displays the System Definition attributes. Press **Next** (F11) or **Prev** (F10) to move between the views.

```

File  Options  Help
-----
EDIT                               MQ Subsystem
Command ==>> _____

MQ System definition:
MQ SSID . . . . . MQ2_   MVS Image . . . _____
Description . . . . . ** New MQ system ** _____

System View:
 1 1. Attributes   2. Cyclic SMF Files   3. Daily SMF Files

Specify System Attributes:
SMF Log Stream . . . _____ RETPD _____

```

Figure 52. Shared MQ Subsystem attributes

Cyclic and Daily SMF File views for an MQ System are the same as for a CICS System. See “View 2. Cyclic SMF Files” on page 119 and “View 3. Daily SMF Files” on page 127.

## Logger System definition

Like CICS System details, Logger details are presented across three views:

1. System Definition attributes
2. Cyclic SMF Files
3. Daily SMF Files

The first view displays the System Definition attributes. Press **Next** (F11) or **Prev** (F10) to move between the views.

```

File  Options  Help
-----
EDIT                               System Logger
Command ==>> _____

System Logger definition:
Logger . . . . . MVSLOG2_ Image . . . _____
Description . . . . . ** New LOGGER system ** _____

System View:
 1 1. Attributes   2. Cyclic SMF Files   3. Daily SMF Files

Specify System Attributes:
SMF Log Stream . . . _____ RETPD _____

```

Figure 53. Shared System Logger attributes

Cyclic and Daily SMF File views for a Logger System are the same as for a CICS System. See “View 2. Cyclic SMF Files” on page 119 and “View 3. Daily SMF Files” on page 127.

---

## Maintaining Shared Group Definitions

Select option 2 **Maintain Group definitions** from the Shared System Definitions Menu. This facility allows you to define groups of systems for reporting purposes.

```
File Edit View Options Help
-----
                                Shared Groups                                Row 1 from 4
Command ==> _____ Scroll ==> _____

Select to review the Systems in the Group.

/  Use Group      Description
-  13 PRODMR01    Production MRO
-  34 WEEKLY      Weekly SMF data
-   8 MONTHLY     Monthly SMF data
S   2 YEARLY      Yearly SMF data
***** End of list *****

F1=Help    F3=Exit    F5=Rfind    F6=New    F7=Backward  F8=Forward
F10=Actions F12=Cancel
```

Figure 54. Shared Group Definitions

Shared Group Definitions operate in a similar way to personal Group Definitions. For more information, see “Maintaining Personal Groups” on page 99.

---

## Mass Updating Shared CICS System Definitions

Suppose that, some time ago, you created CICS System Definitions in CICS PA using version-specific data set names for the MCT and SDFHLOAD libraries. Now you want to upgrade your CICS System Definitions in CICS PA to match this change in your system environment. Rather than selecting and then editing each system definition individually, you can upgrade several (or all of them) together.

For details, see “Mass Update of Personal CICS System Definitions” on page 80.

---

## Take-up from Personal System Definitions

Select option 3 **Take-up from Personal System Definitions** from the Shared System Definitions Menu.

Before proceeding with loading your personal systems into the shared definition repository, a confirmation pop-up is displayed.



```

Take-Up from Personal System Definitions
Command ==> _____

Select the types of definition that you want to copy from
your personal profile library to the Repository. This does
not replace definitions that already exist in the
Repository.

Required Definitions:
- Systems and Groups
- Files

Instructions:
Press ENTER to continue.
Enter END or CANCEL to cancel Take-Up.

```

Figure 55. Shared System Definitions: Take-up from personal definitions

This take-up copies the personal system definitions from your personal profile library to the shared system definitions in a repository. This makes the definitions available to all users of the repository.

You can select the types of definition to copy:

**Systems and groups, but not files**

If a group in your personal system definitions already exists in the repository, then take-up adds the systems to the group in the repository.

**Files, but not systems or groups**

Only copies files belonging to systems that already exist in the repository.

**Systems, groups, and files**

All definitions.

Before performing take-up, delete any personal system definitions that you do not want copied to the repository. Consider making a backup copy of your personal profile library and the repository.

Take-up does not replace definitions with the same name in the repository. If a file with the same data set name exists in both your personal system definitions and the repository, then take-up does not affect the file definition in the repository.

Take-up copies files to the repository as cyclic files with an Origin value of NONE. If the file has an origin, then, after take-up, edit the file definition in the repository.

---

## Take-up from SMF File

Option 4 **Take-up from SMF File** from the Shared System Definitions Menu provides the facility to take-up system and file information from one SMF File.

Data Take-up from SMF File is a two-step process. First the system details are extracted from the file, then they are used to automatically update your Shared System Definitions. Successful completion of the first step generates a Recap report that provides information about all the systems contained on the SMF Files.

Take-up of Shared Systems from an SMF File optionally performs the following functions:

1. Defines new shared systems, including CICS, DB2, MQ, Logger, and Images
2. Defines Daily SMF Files, and associates them to either Systems with data on the file or its MVS Image

Because log streams can contain very large amounts of data, you can specify a time interval to limit the number of SMF records that must be processed. SMF Interval is mandatory for log streams but optional for data sets. To further improve the performance of take-up processing, the panel also includes options to specify Image and System types.

If system definition take-up finds CICS TS and CICS TG systems with the same APPLID, it creates a single CICS system definition. System definitions taken up from SMF 111 records have a blank VRM field value (this field is for CICS TS versions, not CICS TG versions). To help distinguish CICS TS systems from CICS TG systems, definitions taken up from SMF 111 records have the description “CICS TG system added by Take-up”.

```

File Options Help
-----
                        System Definitions Take-Up
Command ==> _____

Specify the DSN or Log stream for system take-up.

Data Set Name . . 'CICSPA.LOGGER.SMFDATA1' _____
Log Stream . . . _____ RETPD _____

Required Definitions:          Connect files to:
/ Systems                     2 1. System
/ Files                       2 2. Image

System Selection:             _____ SMF Interval _____
Image . . _____ +       YYYY/MM/DD HH:MM:SS.TH
Group . . _____ +       From _____
Type . . _____ CICS _____ DB2      To _____
      _ MQ          _ Logger

Recap Report:                 Enter "/" to select option
DDname . . . SDTU0001        / Edit JCL before submit

F1=Help   F3=Exit   F6=Resize F12=Cancel

```

Figure 56. Shared System Definitions: Take-Up from SMF File

## Take-up options

The take-up options are:

### Data Set Name

The name of an SMF data set from which you want to extract System details for automatic take-up into your System Definitions. Normal ISPF data set conventions apply. Data Set Name and Log Stream are mutually exclusive. This option generates the IN keyword.

### Log Stream

The name of an SMF log stream from which you want to extract System details for automatic take-up into your System Definitions. The first qualifier must be IFASMF. The log stream name must not be enclosed in quotes. Data Set Name and Log Stream are mutually exclusive. This option generates the IN keyword.

### RETPD

The log stream retention period, specified in days (0-65536). This value is used to calculate a start date for determining what records are candidates for take-up processing.

### Required Definitions

The following options apply to both SMF files and log streams.

## Systems

Select Systems to take-up all the CICS systems and related subsystems with data on the SMF File are defined to shared system definitions. Existing system definitions are not replaced. This option generates the SYSTEMS keyword.

**Files** Select Files to take-up the specified SMF File. The specified SMF File is registered as a Daily SMF File and connected to the systems that have SMF records on the file.

The **Connect files to** setting is only applicable when the Files option is selected. This setting specifies the type of systems the Daily SMF File is to be connected to:

### 1. System

Connects the Daily SMF file to all systems with SMF records on the file, including CICS, DB2, MQ, and Logger, as well as the MVS Image that owns the file.

The System option generates the FILESYSTEM keyword. This option ensures that, while the daily SMF file is defined to multiple systems, only SMF files that actually contain data for this system are connected to this system.

### 2. Image

Connects the Daily SMF file only to the MVS Image that owns the file. CICS and other subsystems that belong to the Image can request the selection of their SMF files from the Image if they do not have their own Daily SMF Files.

The Image option generates the FILEIMAGE keyword. This option ensures that the SMF File is only defined once, and is shared by all systems that belong to the Image.

For more information, see “Example: choosing between System and Image” on page 134.

## System Selection

System Selection is used to filter the records processed by take-up in order to minimize the processing time. These options apply to both log streams and data sets.

**Image** Use to specify the image (MVSID) for which SMF records will be processed by take-up. Records for all other images will be ignored. Only one image name can be specified. Wildcard characters are not supported. Mutually exclusive with Group.

**Group** Specifies a group containing one or more image definitions. Used when records for more than one image are required for take-up. Mutually exclusive with Image. Only systems whose Type=Image in the group are used. Other types are ignored. Group is not allowed when the DASDONLY profile option is selected.

**Types** System types to be taken up. This option is used to generate a list of SMF record codes.

## SMF Interval

The interval of SMF records to process from the log stream or data set. SMF Interval is mandatory for log streams but optional for data sets.

These fields generate the SMFSTART and SMFSTOP operands.

## Example: choosing between System and Image

Consider the following example to help you choose between the System option (FILESYSTEM) and the Image option (FILEIMAGE).

Take-up is run against two daily SMF files for Image MVS1:

1. DAILY.SMF(0) contains data for CICS systems CICS1 and CICS2
2. DAILY.SMF(-1) contains data for CICS systems CICS2 and CICS3

The **SYSTEMS** option will define the three CICS systems: CICS1, CICS2 and CICS3, and one image MVS1.

**FILEIMAGE** defines both SMF files to image MVS1. All three CICS systems are eligible to use both files because each system belongs to image MVS1. The drawback is that CICS3 has no data on generation 0, and CICS1 has no data on generation -1. But at report submission time, CICS PA has no way of knowing which image file has data for the selected system, so both files are selected. For example, reporting against CICS1 will select both files, even though generation -1 contains no relevant data.

**FILESYSTEM** defines the SMF file to image MVS1, and also defines it to each CICS system that has data on the file. CICS1 has one daily SMF file definition only, generation 0. Now at report submission time, CICS PA will select only generation 0. The drawback is that the file is defined to multiple systems. But this is not really a problem because daily SMF file maintenance is handled automatically by HDB housekeeping which deletes expired daily SMF file definitions, and the dialog itself which ignores expired daily SMF files.

## TAKEUP command syntax

The take-up command is:

```
CICSPA SMFSTART(YYYY/MM/DD,hh:mm:ss.nn),
      SMFSTOP(YYYY/MM/DD,hh:mm:ss.nn)
CICSPA IN(ddname|logstream),
      [MVSID(mvsids),]
      TAKEUP(SHARED,           analyze SMF file contents
      [SYSTEMS,]              load systems
      [FILEIMAGE|FILESYSTEM,] load files, connect to either image or system
      [TYPE(CICS,|DB2,|MQ,|LOGGER),]
      [RETPD(0-65536),]
      [OUTPUT(ddname)])      DDname for Recap report output
```

## Take-up JCL

Take-up JCL can be generated from the dialog. It is recommended that the take-up JCL is incorporated into your SMF Dump process. Sample job CPAHDB in library SCPASAMP provides an example of how to do this. Refer also to "Example: Working with Shared Systems" on page 136.

```

//CPAHDB JOB ,CLASS=A,NOTIFY=&SYSUID
/* SMF Dump
//SMFDUMP EXEC PGM=IFASMFDP
//INDD DD DSN=SYS1.MAN1,DISP=SHR
//OUTDD1 DD DISP=(NEW,CATLG),DSN=CICSPROD.SMFDAILY(+1)
//SYSPRINT DD SYSOUT=A
//SYSIN DD *
        INDD(INDD,OPTIONS(ALL))
        OUTDD(OUTDD1,TYPE(110))
/*
/*
/* CICS PA Take-up, HDB Load, and selected reports
//CICSPA EXEC PGM=CPAMAIN,REGION=4M,PARM=NOSTAE
//STEPLIB DD DSN=CPA.V5R2M0.SCPALINK,DISP=SHR
//SYSPRINT DD SYSOUT=*
/* SMF Input Files
//SMFIN001 DD DISP=(SHR,KEEP),DSN=CICSPROD.SMFDAILY(+1)
/* Repository
//CPAHDBRG DD DISP=SHR,DSN=<CPA.HDB.REPOSTRY>
/*
/* CICS PA command requests
//SYSIN DD *
        CICSPA IN(SMFIN001),
                APPLID(*),

* Take-up from SMF into Shared System Definitions
TAKEUP(SHARED,SYSTEMS,FILESYS,OUTPUT(SDTU0001))

* HDB Load requests
HDB(LOAD(WEEKLY),OUTPUT(WEEKLY)),
HDB(LOAD(DAILY),OUTPUT(DAILY)),
HDB(LOAD(STATS),OUTPUT(STATS)),

* CMF Performance report requests
SUMMARY(FIELDS(TRAN),OUTPUT(SUMM0001)),
WAITANAL(BY(TRAN),OUTPUT(WAIT0001))
/*

```

*Figure 57. Sample JCL CPAHDB - SMF Dump, Take-up, HDB Load, then reports*

Step 1 is the SMF Dump process that reads online SMF MANx data sets (or other SMF data) and creates an extract data set of SMF records to be used for reporting purposes.

Step 2 is the CICS PA batch process that can perform the following tasks in parallel:

1. Take-up to define the systems and SMF file to shared System Definitions.
2. HDB Load requests to load performance data into Historical Databases.
3. CICS PA Performance reporting to produce one of more reports for performance analysis.

Note that by combining take-up, HDB load and reporting into a single job step, all CICS PA functions can be performed by a single pass of the SMF data.

## Take-up Recap report

The following example shows part of the Recap report that is generated at the end of file processing.

The Recap report provides a list of all the Systems with data on the SMF file together with a count of all SMF 110 records on the file. With this information you can elect to take-up Systems or Files or both, and specify whether to connect the Files to the System or the Image.

Note that the Recap report is showing what is available for take-up from the SMF files, it is *not* showing the results of take-up. Review the Shared System Definitions in the dialog to see the results of take-up.

V5R2M0		CICS Performance Analyzer System Take-up Recap Report By Data Set									
SDTU0001 Printed at 12:03:45 11/12/2013		Data from		12:35:00 10/12/2012		to 12:56:00 10/15/2012				Page	1
				-----Start-----		-----Stop-----		-----System-----		Record	
DDname	Data Set Name or Log Stream Name	Date	Time	Date	Time	Name	Type	Imag		Count	
SMFIN001	CICPRO.SMF.G1443V00	2012-10-13	20.30.00	2012-10-14	12.00.00	SCL0G	Logger	FTS2		64	
						FTS2	Image			64	
	CICPRO.SMF.G1442V00	2012-10-14	11.10.38	2012-10-14	12.00.11	CCVT22T	CICS	FTS1		3030	
						FTS1	Image			29390	
						CCVT31M	CICS	FTS1		68	
						CCVT22C	CICS	FTS1		12122	
						CCVT31T	CICS	FTS1		122	
						CCVT31C	CICS	FTS1		323	
						CCVT23C	CICS	FTS1		6426	
						CCVT41C	CICS	FTS1		432	
						CCVT23T	CICS	FTS1		3747	
						CCVT31CX	CICS	FTS1		51	
						CCVT23CX	CICS	FTS1		72	
						CCVT41CX	CICS	FTS1		72	
						CCVT22CX	CICS	FTS1		228	
						CCVT22M	CICS	FTS1		201	
						CCVT41M	CICS	FTS1		72	
						SCL0G	Logger	FTS1		102	
	CICPRO.SMF.G1441V00	2012-10-14	10.02.16	2012-10-14	11.10.13	CCVT22T	CICS	FTS1		8470	
						FTS1	Image			34229	
						CCVT31M	CICS	FTS1		272	
						CCVT22C	CICS	FTS1		4655	
						CCVT31T	CICS	FTS1		375	
						CCVT31C	CICS	FTS1		374	
						CCVT23C	CICS	FTS1		12852	
						CCVT41C	CICS	FTS1		360	
						CCVT23T	CICS	FTS1		3600	

V5R2M0		CICS Performance Analyzer System Take-up Recap Report By System									
SDTU0001 Printed at 12:03:45 11/12/2013		Data from		12:35:00 10/12/2012		to 12:56:00 10/15/2012				Page	3
				-----Start-----		-----Stop-----				Record	
Name	Type	Imag	DDname	Data Set Name or Log Stream Name	Date	Time	Date	Time		Count	
SCL0G	Logger	FTS2	SMFIN001	CICPRO.SMF.G1443V00	2012-10-13	20.30.00	2012-10-14	12.00.00		64	
				CICPRO.SMF.G1437V00	2012-10-13	16.30.00	2012-10-13	20.00.00		16	
FTS2	Image		SMFIN001	CICPRO.SMF.G1443V00	2012-10-13	20.30.00	2012-10-14	12.00.00		64	
				CICPRO.SMF.G1437V00	2012-10-13	16.30.00	2012-10-13	20.00.00		16	
CCVT22T	CICS	FTS1		CICPRO.SMF.G1442V00	2012-10-14	11.10.38	2012-10-14	11.53.40		3030	
				CICPRO.SMF.G1441V00	2012-10-14	10.02.51	2012-10-14	11.09.00		8470	
				CICPRO.SMF.G1440V00	2012-10-14	08.21.37	2012-10-14	09.57.37		12685	
				CICPRO.SMF.G1439V00	2012-10-14	06.25.38	2012-10-14	08.16.59		8544	
				CICPRO.SMF.G1438V00	2012-10-13	20.09.11	2012-10-14	00.00.00		266	
FTS1	Image			CICPRO.SMF.G1442V00	2012-10-14	11.10.38	2012-10-14	12.00.11		29390	
				CICPRO.SMF.G1441V00	2012-10-14	10.02.16	2012-10-14	11.10.13		34229	
				CICPRO.SMF.G1440V00	2012-10-14	08.19.31	2012-10-14	10.02.14		50835	
				CICPRO.SMF.G1439V00	2012-10-14	06.25.38	2012-10-14	08.18.08		39768	
				CICPRO.SMF.G1438V00	2012-10-13	20.00.51	2012-10-14	00.00.00		8720	

Figure 58. Shared System Take-up Recap report

## Example: Working with Shared Systems

Consider an MVS Image MVS1 that runs our production CICS regions. We will implement Daily and Cyclic SMF File definitions to help us run our report requests against the SMF data collected for this system.

The first (optional) step is to implement Take-up for Daily SMF Files.

Daily SMF files are recommended when your SMFDUMP process creates extract GDG data sets whenever SMF is switched throughout the day. Daily files allow you to run report requests against today's SMF data without having to explicitly specify the data set names.

**Tip:** Append the take-up step to the end of your SMFDUMP job so that daily data sets are defined automatically. See “Take-up from SMF File” on page 131 for more information.

```
//SMFDUMP JOB ,CLASS=A,NOTIFY=&SYSUID
/* SMF Dump for MVS Image MVS1
//SMFDUMP EXEC PGM=IFASMFDP
//INDD DD DSN=SYS1.MAN1,DISP=SHR
//OUTDD1 DD DISP=(NEW,CATLG),DSN=MVS1.SMF(+1)
//SYSPRINT DD SYSOUT=A
//SYSIN DD *
INDD(INDD,OPTIONS(ALL))
OUTDD(OUTDD1,TYPE(110))
/*
/* CICS PA Shared System Definitions Take-up
//CICSPA EXEC PGM=CPAMAIN,REGION=4M
//STEPLIB DD DSN=CPA.V5R2M0.SCPALINK,DISP=SHR
//SYSPRINT DD SYSOUT=*
//SMFIN001 DD DISP=(SHR,KEEP),DSN=MVS1.SMF(+1)
.
.
.
//SYSIN DD *
CICSPA IN(SMFIN001),
TAKEUP(SHARED,SYSTEMS,FILESYSTEM,OUTPUT(SDTU0001))
/*
```

Figure 59. SMFDUMP job

CICS PA Take-up will define Image MVS1 if it is not already defined, and attach the new daily SMF file MVS1.SMF(+1) to the system.

The result when you view the daily SMF files for system MVS1 (System View 3) is the list of daily data sets definitions created by take-up, and the time interval they span.

File Edit Options Help
Row 1 of 8 More: >

EDIT MVS Image  
 Command ==> \_\_\_\_\_ Scroll ==> CSR\_

MVS Image System definition:  
 MVS Image . . . . MVS1\_\_\_\_  
 Description . . . Image MVS1 that runs CICS Production

System View:  
 3 1. Definition 2. Cyclic SMF Files 3. Daily SMF Files

SMF Data Set Name	----- Start -----	- Stop -
MVS1.SMF.G1493V00	2012-07-17 10.38.02	11.57.03
MVS1.SMF.G1491V00	2012-07-17 08.00.44	10.20.25
MVS1.SMF.G1489V00	2012-07-17 04.01.04	07.56.54
MVS1.SMF.G1487V00	2012-07-17 00.01.33	03.57.04
MVS1.SMF.G1485V00	2012-07-16 20.03.12	00.00.00
MVS1.SMF.G1483V00	2012-07-16 15.52.42	*EXPIRED
MVS1.SMF.G1481V00	2012-07-16 14.09.02	*EXPIRED
MVS1.SMF.G1479V00	2012-07-16 10.52.18	*EXPIRED

\*\*\*\*\* Bottom of data \*\*\*\*\*

Figure 60. Shared MQ Subsystem Daily SMF Files

Now when you report against system MVS1 or any of its CICS systems, the daily files are used when required.

Scroll Left (F10) to view the Cyclic SMF file definitions (System View 2).

Figure 61 shows a typical SMF configuration:

1. Weekly SMF file GDG where one generation contains data for one week, is built at end of the day from the daily SMF files (defined previously), and is rolled over every Sunday.
2. Monthly SMF file GDG where one generation contains data for one calendar month, and is rolled over on the first day of each month.

```

File Edit Options Help
-----
EDIT                               MVS Image                               Row 1 of 2 More: >
Command ==> _____ Scroll ==> CSR_

MVS Image System definition:
MVS Image . . . MVS1_____
Description . . . Image MVS1 that runs CICS Production

System View:
 2 1. Definition  2. Cyclic SMF Files  3. Daily SMF Files

/ SMF Data Set Name (or GDG Base)      Origin      Interval DISP
- 'MVS1.SMF.WEEKLY'_____            SUNDAY      WEEK      MOD
- 'MVS1.SMF.MONTHLY'_____          ****-01-01  MONTH      MOD
***** Bottom of data *****

```

Figure 61. Shared MQ Subsystem Cyclic SMF Files

To use shared System Definitions in preference to personal System Definitions, you need to change your personal profile. The **Systems** action bar is available on all run-time panels, for example Run Report Set. Select option 4 **Use Shared System Definitions**. With this setting you can now use the shared system definitions and their SMF Files.

Shared SMF File selection is controlled by the Report Interval you specify at run time.

## File Selection example 1

In this example, we specify a relative date of 0 (zero) to signify today, say July 17, 2012 (2012-07-17).



File Systems Options Help			
-----			
Run Report Set MYREPS			
Command ==> _____			
Specify run options then press Enter to continue submit.			
System Selection:			
CICS APPLID . .	CICSP1__	+	Image . . MVS1_____ +
DB2 SSID . . .	_____	+	Image . . _____ +
MQ SSID . . . .	_____	+	Image . . _____ +
Logger . . . .	_____	+	Image . . _____ +
/ Override System Selections specified in Report Set			
_ Read SMF File to EOF			
Missing SMF Files Option:		----- Report Interval -----	
1 1. Issue error message		YYYY/MM/DD HH:MM:SS.TH	
2 2. Leave DSN unresolved in JCL		From 0 _____ 06:00:00.00	
3 3. Disregard offending reports		To 0 _____ 09:00:00.00	
Enter "/" to select option			
/ Edit JCL before submit			

Figure 62. Run Report Set: specify relative dates

CICS PA will automatically generate the JCL that includes the daily SMF files that cover this period.

```

/* SMF Files for Image=MVS1
//SMFIN001 DD DSN=MVS1.SMF.G1489V00,DISP=SHR      2012-07-17 04.01.04 07.56.54
//SMFIN002 DD DSN=MVS1.SMF.G1491V00,DISP=SHR      2012-07-17 08.00.44 10.20.25

```

Figure 63. File selection

## File Selection example 2

In this example, we specify a date range covering one working week from Monday July 16 to Friday July 20, 2012.

File Systems Options Help			
-----			
Run Report Set MYREPS			
Command ==> _____			
Specify run options then press Enter to continue submit.			
System Selection:			
CICS APPLID . .	CICSP1__	+	Image . . MVS1_____ +
DB2 SSID . . .	_____	+	Image . . _____ +
MQ SSID . . . .	_____	+	Image . . _____ +
Logger . . . .	_____	+	Image . . _____ +
/ Override System Selections specified in Report Set			
_ Read SMF File to EOF			
Missing SMF Files Option:		----- Report Interval -----	
1 1. Issue error message		YYYY/MM/DD HH:MM:SS.TH	
2 2. Leave DSN unresolved in JCL		From 2012/07/16 _____	
3 3. Disregard offending reports		To 2012/07/20 _____	
Enter "/" to select option			
/ Edit JCL before submit			

Figure 64. Run Report Set: specify relative dates

CICS PA will automatically generate the JCL that includes the cyclic SMF files that cover the specified reporting interval.

```
//* SMF Files for Image=MVS1  
//SMFIN001 DD DSN=MVS1.SMF.WEEKLY(-1)
```

*Figure 65. File selection*

CICS PA always chooses the smallest cyclic SMF file that covers the entire reporting period. This explains why, in the previous example, the weekly SMF GDG was chosen ahead of the monthly GDG.

CICS PA also knows the number of generations (GDG LIMIT) for each cycle. Therefore if only four generations of the weekly file are available, a reporting request for 5 weeks ago would be satisfied by the monthly GDG cycle, MVS1.SMF.MONTHLY(-1).

---

## Part 3. Requesting reports using the dialog

These topics tell you how to use the CICS PA dialog to request reports and extracts and submit them for batch processing.



---

## Chapter 8. Report Sets

A Report Set is used to request a set of reports and extracts. Reporting options and record selection criteria can be specified at the global-level to apply to all the reports and extracts in the Report Set, or at the report-level to apply to the individual report or extract. Report-level specifications take precedence unless at run time you choose to override them.

When you run a Report Set, CICS PA first prompts you to specify run-time options. Then CICS PA generates a one-step JCL deck with a command stream including active reports and extracts in active report categories.

The topic on 'Defining a Report Set for daily monitoring' in the CICS Performance Analyzer for z/OS *Getting Started Guide* provides a guided tour or worked example of how to define a report set.

---

### Report Set tree

Reports are displayed using a tree structure. The report tree structure is a hierarchical representation of report categories and reports; similar to the way some PC tools display folders and their contents. Report categories act as folders that can expand (to show) and collapse (to hide) the reports contained within them. The + or - character to the left of each report category shows its current display status, expanded (-) or collapsed (+). This allows you to view only the reports that you are currently interested in. Use your mouse or line action **S** against a report category to toggle the expand/collapse status of the category.

You can also enter line action **S** at the top of the Reports tree. This will expand all categories that are not already expanded. If all categories are expanded, then it will collapse all categories.

The following example shows the Performance Reports category expanded and all other categories collapsed.

```

File Systems Confirm Options Help
-----
EDIT                               Report Set - MYREPS
Command ==> _____ Scroll ==> PAGE

Description . . . CICS PA Report Set _____

Enter "/" to select action.

---      ** Reports **                      Active
+ ---    Options                          Yes
+ ---    Selection Criteria                No
- ---    Performance Reports              Yes
        --- List                          No
        --- List Extended                  No
        --- Summary                       Yes
        --- Totals                        No
        --- Wait Analysis                  No
        --- Transaction Profiling          No
        --- Cross-System Work              No
        --- Transaction Group              No
        --- BTS                           No
        --- Workload Activity              No
        --- Transaction Tracking List      No
        --- Transaction Tracking Summary  No
+ ---    Exception Reports                 No
+ ---    Transaction Resource Usage Reports No
+ ---    Statistics Reports                No
+ ---    Subsystem Reports                 Yes
+ ---    System Reports                   Yes
+ ---    Extracts                         No
        ** End of Reports **

```

Figure 66. Report Set tree

If your terminal emulation software permits, it is recommended that you configure your Mouse Options to activate the Lightpen function. Then you can flip the display status of Report Categories by (left button) clicking the + (to expand) and - (to collapse) characters with your mouse. Use of your mouse as a lightpen might vary depending on your terminal emulation software.

## Activating reports

Each category and report has an **Active** status indicator, displayed to the right of the report tree. Change the Active status to Yes to ensure the report is run.

When the Active status indicator for a category is set to Yes, reports in the category with an Active status of Yes will run. When set to No, no reports in the category will run, regardless of their Active status. Note that the Report Options have their Active status set to Yes automatically if there are active reports. This is because the options must always be used. You cannot deactivate them. CICS PA will deactivate them only when all reports are deactivated.

You can use line action **A** to activate a report or a report category and you can use line action **D** to deactivate.

You can use line action **AA** against a report category to activate all reports in the report category and the category itself. Line action **DD** will similarly deactivate all. These line actions entered at the top of the Reports tree will activate or deactivate *all* reports and options in the Report Set.

## Running Report Sets

The **RUN** command is used to run (submit) Report Sets. It oversees the specification of run-time options and the generation of JCL. The **SUBmit** and **JCL** commands are still available and considered to be specialized RUN requests to either submit JCL immediately or edit JCL before submit.

**RUN** can also be entered as a line action at the report category and individual report level. The RUN line action temporarily overrides the Active status. When used in this way, the selected categories and reports are run regardless of the Active status.

Figure 67 shows how to use the **RUN** line action to request the Summary, Totals and Wait Analysis Performance reports, as well as all active reports in the Subsystem Reports category, in this case the DB2 report.

```
File Systems Confirm Options Help
-----
EDIT                               Report Set - MYREPS
Command ==>                        Scroll ==> PAGE

Description . . . CICS PA Report Set

Enter "/" to select action.

---  ** Reports **                      Active
+ --- Options                          Yes
+ --- Selection Criteria                No
- --- Performance Reports              Yes
    --- List                           No
    --- List Extended                   No
    RUN Summary                        Yes
    RUN Totals                         No
    RUN Wait Analysis                   No
    --- Transaction Profiling           No
    --- Cross-System Work               No
    --- Transaction Group               No
    --- BTS                            No
    --- Workload Activity               No
    --- Transaction Tracking List       No
    --- Transaction Tracking Summary    No
+ --- Exception Reports                 No
+ --- Transaction Resource Usage Reports No
+ --- Statistics Reports                 No
- RUN Subsystem Reports                 Yes
    --- DB2                            Yes
    --- WebSphere MQ                   No
    --- OMEGAMON                       No
- --- System Reports                   Yes
    --- System Logger                  Yes
+ --- Extracts                         No
    ** End of Reports **

F1=Help    F3=Exit    F7=Backward F8=Forward F10=Actions F12=Cancel
```

Figure 67. RUN line action

You can also use RUN line actions in conjunction with the RUN primary command (from the command line). This generates JCL command input for all active reports in all active categories, as well as for categories and reports selected via the RUN line actions.

For more information on running Report Sets, see "Running Report Sets" on page 277.

## Maintaining Report Sets

To display the list of Report Sets in the current Report Sets data set, select option 3 **Report Sets** from the CICS PA Primary Option Menu. From this panel you can review, update, or submit a selected Report Set for batch processing or create new one.

**Tip:** To set or change the current Report Sets data set, use the **Options** menu on the action bar or enter **CDS** from the command line.

```

File Systems Confirm Options Help
-----
                                Report Sets                                Row 1 to 6 of 6
Command ==> _____ Scroll ==> PAGE

Report Sets Data Set . . : xxxx.CICSPA.RSET

/      Name                      Description                      Changed                      ID
___ BTS1      BTS Report          2005/01/01 00:00 CICSPA
___ DAILY     Daily CMF Reports    2005/01/01 00:00 CICSPA
___ EXCEPT1 Exception Reports    2005/01/01 00:00 CICSPA
___ PERF1     Performance Reports    2005/01/01 00:00 CICSPA
___ TRANGP1   Transaction Group Report  2005/01/01 00:00 CICSPA
___ WEEKLY    Weekly CMF Reports        2005/01/01 00:00 CICSPA

***** End of list *****

```

Figure 68. Report Sets

The Report Sets are listed with the following user-defined attributes:

**Name** 1-8 character name in ISPF member name format, used to uniquely identify the Report Set within the Report Sets data set. By default, the panel is sorted on the Name field.

### Description

Free format text up to 32 characters that describes the contents and purpose of the Report Set.

**Line Actions:** The following line actions can be performed against a Report Set:

- /** Display the menu of line actions.
- E** Edit the Report Set.
- S** Select the Report Set (same as Edit).
- V** View the Report Set. This looks like the Edit panel but has no 'hold' on the data and has no Save capability, however SaveAs is available.
- RUN** Run the Report Set. Only active reports and extracts within active categories are selected. The Run Report Set panel is displayed for you to enter required run-time options before submission. See "Running Report Sets" on page 277 for more information. Alternative RUN commands are:
  - SUB** After your run-time options are validated, JCL is submitted directly for batch processing.
  - JCL** After your run-time options are validated, JCL is presented in an Edit session. You can alter the JCL before submission or save it in your JCL library.
- D** Delete the Report Set.
- R** Rename the Report Set.



**Primary Commands:** The following primary commands are available:

**NEW name [MODEL dsn(modelname)]**

This command creates a new Report Set. If all required parameters are specified, the Edit panel for the new Report Set is displayed. Otherwise, the New Report Set window is displayed to allow you to specify the name of the new Report Set and optionally the name of an existing Report Set to be used as a model. If the model is in the current Report Sets data set, specify just the name of the Report Set. If it is in another data set, specify both the name of the data set and the Report Set in the format **datasetname(modelname)**.

Also available from **File** in the action bar.

See “Creating new Report Sets” for information on how to proceed.

**SELECT name**

This command (or **S**) selects the specified Report Set for editing. If the Report Set does not exist, it is created as if the **NEW** command was used.

Also available from **File** in the action bar.

**SORT Name | Description | Changed | Id**

This command sorts the list of Report Sets on one or two columns. The default sort field is **Name**. The sort disregards upper and lower case. The sort sequence is ascending for all except the Changed column which is descending. The sort order is retained only until Exit or another SORT command is issued.

**LOCATE string**

This command (or **L** or **LOC**) is used to locate an entry in the list based on the primary sort field. By default, LOCATE operates on the **Name** field. The string should be no longer than the primary sort field and not enclosed in quotes. The display will scroll to the entry which matches the string, or the entry preceding it if an exact match is not found.

**CONFIRM ON|OFF**

**CONFIRM ON** (or **CONFIRM**) instructs CICS PA to prompt for confirmation when you request to Delete a Report Set.

With **CONFIRM OFF**, Delete requests are actioned immediately. Deleted Report Sets cannot be reinstated.

This command changes the setting only for the current invocation of the Report Sets panel. On exit, it reverts to the default set by **Delete Confirmation** in CICS PA Settings.

Also available from **Confirm** in the action bar.

---

## Creating new Report Sets

To create a new Report Set, do either of the following steps:

- In the command line, enter **NEW** followed by the name of the new Report Set and an optional model Report Set using the following syntax:

```
➤➤NEWnewname-----➤➤
      |
      |MODELmodelname-----
      |      |
      |      |datasetname(modelname)-----
```

- Select **File** from the action bar, then choose **New**. A pop-up dialog window is displayed as shown in Figure 69 on page 148.

New Report Set

Command ==> \_\_\_\_\_

Specify the name of the new Report Set and optional model.

Name . . . TRANGP2\_

Model . . TRANGP1\_

*Figure 69. Specifying a New Report Set*

This panel allows you to create a new Report Set. You must give the new Report Set a name. Optionally, you can model it on an existing Report Set, otherwise it is created empty with no reports or extracts defined.

You can bypass this panel by specifying all required details on the **NEW** command.

**Name** The name of the new Report Set. A 1-8 character name in ISPF member name format. The name must be unique within the Report Sets data set.

**Model** You can specify the name of an existing Report Set as a model so that your new Report Set is initialized with the same contents as the model. If the model is in the current Report Sets data set, specify just the member name. If it is in another data set, specify both the data set name and the Report Set name in the format **datasetname(modelname)**.

When you have specified the required details, press Enter to create the Report Set.

---

## Specifying Report Set contents

The Report Set Edit panel is displayed when you do either of the following actions from the Report Sets panel:

- Create a new Report Set.  
Use the **NEW** command or select **File->New** in the action bar.
- Select an existing Report Set.  
Enter line action **E** or **S** against a Report Set or use the **SELECT** command

The Report Set panel describes the Report Set and lists all the reports and extracts that can be requested.

The Report Set description can be modified. Specify up to 32 characters of text to describe the purpose of the Report Set. The description is shown on the Report Sets panel to help you distinguish between the Report Sets displayed. It also appears as a comment in the JCL. The description is initially set to **CICS PA Report Set**.

The reports and extracts are grouped to indicate the type of output (**report** or **extract**) and the type of SMF data they process, either CMF data (**performance**, **exception**, **transaction resource**, or **statistics** class data), subsystem data (**DB2**, **WebSphere MQ**, **OMEGAMON**), or MVS system data (**System Logger**). Also listed are three specifications which apply globally to all reports and extracts in the Report Set:

- **Global Options** apply to all reports and extracts. They specify the global system selection (CICS System, DB2 Subsystem, MVS System Logger, WebSphere MQ ID) and report formatting options (lines per page, time zone, date/time delimiters).
- **Performance Selection Criteria** apply to all performance reports and extracts. They provide filtering of CMF performance records based on field values.
- **Exception Selection Criteria** apply to all exception reports. They provide filtering of CMF exception records based on field values.

**Note:** You can override some of the global options by specifying them for individual reports or extracts. System Selection (System, Image, Group) and Selection Criteria are primary examples of this feature. Report-level specifications take precedence.

The reports, extracts, and global selection criteria can be activated (**Active=Yes**) or deactivated (**Active=No**). They are automatically activated when created, and can be explicitly deactivated or activated at any time. The global options are automatically activated if at least one report or extract is active, but they cannot be explicitly activated or deactivated.

Each Report Category can be activated or deactivated. Only active reports in active report categories are included in the Report Set at submit time. A Report Set can be submitted for processing if there is at least one active report in an active report category.

However, there is a convenient exception. You can use the **RUN** line action to temporarily override the active status of a report or report category.

## Line Actions

### *Line Actions (\*\* Reports \*\*):*

The line actions that are valid for **\*\* Reports \*\*** at the top of the Report Set tree are:

- /** Display the menu of line actions.
- S** Expand/Collapse all categories.
- A** Activate all categories.
- AA** Activate all categories and reports.
- D** Deactivate all categories.
- DD** Deactivate all categories and reports.
- RUN** Run the Report Set. Only active reports within active categories are selected, together with any categories or reports selected by the **RUN** line action.

### *Line Actions (Global Options Category):*

- /** Display the menu of line actions.
- S** Expand/Collapse category.

### *Line Actions (Global Options):*

- /** Display the menu of line actions.
- S** Select (edit) the global options.

*Line Actions (Selection Criteria Category):*

- / Display the menu of line actions.
- S Expand/Collapse category.
- A Activate category.
- AA Activate category and all selection criteria.
- D Deactivate category.
- DD Deactivate category and all selection criteria.

*Line Actions (Performance and Exception Selection Criteria):*

- / Display the menu of line actions.
- S Select for edit or review.
- A Activate the Selection Criteria.
- D Deactivate the Selection Criteria.

*Line Actions (Report and Extract Categories):*

- / Display the menu of line actions.
- S Expand/Collapse the category.
- A Activate the category.
- AA Activate the category and all its reports and extracts.
- D Deactivate the category.
- DD Deactivate the category and all its reports and extracts.
- RUN Run the active reports and extracts in the category, plus any selected by the **RUN** line action.

*Line Actions (Reports and Extracts):*

- S Select for edit or review.
- A Activate the report or extract.
- D Deactivate the report or extract.
- RUN Run the report or extract, ignoring the active status.

## **Primary Commands**

**SAVE** This command is only available from Edit mode and saves any changes you have made. To save any changes made in View mode, use **SAVEAS**.  
Also available from **File** in the action bar.

**SAVEAS rsetname | datasetname(rsetname)**

This command is available from both Edit and View mode to save the contents of this Report Set under another name, either in the current data set (assumed if no data set name is provided) or in another data set (if the name of a valid PDS is provided). If you then Cancel from this panel, the contents of the current Report Set remain unchanged.

Also available from **File** in the action bar.

**RUN** Run the Report Set. Only active reports and extracts within active categories are selected. The Run Report Set panel is displayed for you to

enter required run-time options before submission. See “Running Report Sets” on page 277 for more information. Alternative RUN commands are:

**SUB** After your run-time options are validated, JCL is submitted directly for batch processing.

**JCL** After your run-time options are validated, JCL is presented in an Edit session. You can alter the JCL before submission or save it in your JCL library.

Also available from **File** in the action bar.

#### CONFIRM ON|OFF

**CONFIRM ON** (or **CONFIRM**) instructs CICS PA to prompt for confirmation when you request to Cancel from the Report Set panel when there have been updates.

With **CONFIRM OFF**, Cancel requests are actioned immediately, discarding any changes.

This command changes the setting only for the current Edit/View session. On exit, it reverts to the value set by **Cancel Confirmation** in CICS PA Settings

Also available from **Confirm** in the action bar.

**Note:** The **SAVE** and **SAVEAS** commands are only available on the Report Set panel, being at the top of the panel hierarchy. Changes made on the associated panels (global options, selection criteria, reports, extracts) are only saved when the Report Set is saved.

---

## Global Options

To display the Global Options panel, enter line action **S** to select **Global** in the **Options** category on the Report Set panel.

```
File Systems Options Help
-----
SAMPLE - Global Options
Command ==> _____

System Selection:
CICS APPLID . . _____ + Image . . _____ + Group . . _____ +
DB2 SSID . . . . . _____ + Image . . _____ + Group . . _____ +
MQ SSID . . . . . _____ + Image . . _____ + Group . . _____ +
Logger . . . . . _____ + Image . . _____ + Group . . _____ +

Report Formatting Options:
Print Lines per Page . . 60_ (1-255)
Time Zone . . . . . _____ (Blank for system default or -12 to +12 hours)
Date Delimiter . . . . . /
Time Delimiter . . . . . :
Precision . . . . . 6 (4-6)

F1=Help F3=Exit F4=Prompt F7=Backward F8=Forward F10=Actions
F12=Cancel
```

Figure 70. Global Options

The Global Options define general control information applying to all reports and extracts in the Report Set. They specify the global System Selection (CICS System, DB2 Subsystem, MQ Subsystem, MVS System Logger) and report formatting options (lines per page, time zone, date/time delimiters). You can accept the default formatting options or change them to suit your requirements.

System Selection can remain blank, provided the systems are specified at the report-level, or when the Report Set is submitted.

The Global Options are:

#### System Selection:

At Report Set run-time, CICS PA needs to determine which systems the reports will analyze. System Selection identifies these systems. The systems must be defined in your System Definitions. You can type in the system names, or select from a list of defined systems using **Prompt** (F4).

If the required system is not defined to CICS PA, you can link directly to System Definitions to define it by selecting **Systems** in the action bar or entering the **SYSDEFS** command.

You can specify System Selection in three places:

1. Locally for each report within the Report Set. The local selection applies only to this single report.
2. In the Report Set Global Options. The global selection will only apply to reports that do not specify their own local selection.
3. At run time. If specified, this selection overrides the Report Set Global Options. In addition, if the **Override System Selections** option is requested, then the run-time selection also overrides the local report selections.

Each point of selection is optional, but at least one must be specified before CICS PA can proceed with JCL generation. You could choose not to specify any System Selections in your Report Set. Then at run time, you are prompted to specify the systems you want to report against.

You can specify four types of systems:

1. **CICS APPLID:** The CICS Generic APPLIDs you want reported. Specify either:
  - A unique APPLID.
  - An APPLID for a particular MVS Image. This identifies a particular CICS system when there are multiple CICS systems with the same APPLID.
  - An MVS Image. CICS PA will report on all APPLIDs running on this Image using the SMF files defined for the Image.
  - An APPLID and Image combination plus a Group. This is useful for uniquely identifying CICS systems when there are duplicate IDs defined in System Definitions.
  - A Group alone. CICS PA will report on all APPLID and Image combinations in the Group to produce a single consolidated report. For example, for transaction grouping, or for systems that connect via IRC/MRO, ISC/APPC, or IPIC.

CICS PA generates the APPLID(applid1,applid2,applid3,...) and Input(SMFIN001,SMFIN002,SMFIN003,...) operands, and corresponding //SMFINnnn DD statements.

2. **DB2 SSID:** The DB2 Subsystem IDs. This is only used by the DB2 Report and Record Selection Extract. If the CICS APPLID Group contains the DB2 SSIDs, then it can be omitted.

CICS PA generates the SSID(ssid1,ssid2,ssid3,...) operands for the DB2 or RECSEL commands and the DD statements for the associated files.

3. **MQ SSID:** The MQ Subsystem IDs. This is only used by the WebSphere MQ Report and Record Selection Extract. If the CICS APPLID Group contains the MQ SSIDs, then it can be omitted.

CICS PA generates the operand `SSID(ssid1,ssid2,ssid3,...)` operands for the MQ or RECSEL commands and the DD statements for the associated files.

4. **Logger:** The MVS System Logger. This is only used by the System Logger Report, System Logger Extract, and Record Selection Extract. If the CICS APPLID Group contains the System Loggers, then it can be omitted.

CICS PA generates the DD statements for the associated files.

#### **Print Lines per Page**

The maximum number of lines, including headings, to print on each page of the report. Valid values are from 1 to 255. The default is **60**.

The global value applies to all reports. (It is not applicable to extracts.) If a value is specified on the report panel, the report value takes precedence over the global for that report only.

CICS PA JCL generation translates this field to:

`LINECount(nnn)`

#### **Time Zone**

This provides a way to override your local CPU time zone setting and convert CMF, DB2, MQ, and System Logger clock fields to a different time zone. It is only useful if the data you are reporting was generated by a system running with a different time zone.

CMF, DB2, MQ, and Logger records have clock fields in STCK format based on Greenwich Mean Time (GMT). Every CMF record includes time zone conversion factors `SMFMNLSO` (Leap Second Offset) and `SMFMNDTO` (Date/Time Offset). CICS PA uses these to convert the time stamps to reflect the local time of the SMF data.

DB2, MQ, and System Logger records, however, do not have time zone conversion factors. CICS PA uses the reporting system's time zone obtained from the conversion factors `CVTLISO` (Leap Second Offset) and `CVTLDTO` (Date/Time Offset) in the CVT. When you run the DB2, MQ, or Logger report on a system with a different time zone setting to that of the SMF data, then you must specify the time zone option to match that of the SMF data. The time zone specification is used to convert the CMF, DB2, MQ, and Logger time stamps to reflect the local time of the SMF data.

Specify the time zone as an integer from **-12** to **+12** to represent the number of hours that local time is west or east of GMT. For example, specify **-5** for New York, **10** for Sydney. CICS PA will then convert GMT STCK values to the required local time for all record types.

The default is blank (not specified).

CICS PA JCL generation translates this field to:

`ZONE(time-zone)`

#### **Date Delimiter**

The separator character for the dates in reports and extracts. Any character or a space can be specified. The default is a slash (/).

CICS PA JCL generation translates this option to:

`FORMAT(time-delimiter,date-delimiter)`



### Time Delimiter

The separator character for the time-of-day in reports and extracts. Any character or a space can be specified. The default is a colon (:).

CICS PA JCL generation translates this option to:

FORMAT(time-delimiter,date-delimiter)

### Precision

The precision of numeric fields, and of time stamp fields that specify the TIMEP format. Numeric fields can be formatted to either 4, 5, or 6 decimal places. The default is 4.

- 4 decimal places is 0.0001 precision
- 5 decimal places is 0.00001 precision
- 6 decimal places is 0.000001 (microsecond) precision

For details on the TIMEP format, see “Suboperands for Time Stamp fields” on page 393.

This option generates the PRECISION(n) global operand.

---

## Selection Criteria

Some reports allow you to specify selection criteria to filter records based on their field values before they are passed on to report processing. This enables you to tailor your reports to include only the information that you are interested in. For example, you can specify selection criteria to restrict reports to:

- A particular date/time range
- A group of related Transaction IDs
- Transaction response times that exceed your thresholds

There are several types of Selection Criteria, to support the various types of record processed by CICS PA:

*Table 4. Selection Criteria, the record types they apply to, and the reports they affect*

Type of Selection Criteria	Filters these types of record...	For these reports...	Global?
Performance	CMF performance (SMF 110)	All Performance Reports, Transaction Resource Usage Reports  Some Extracts: Cross-System Work, Record Selection	Yes
	DB2 accounting (SMF 101)	DB2 reports (in the Subsystem Reports category)	Yes
	WebSphere MQ accounting (SMF 116)	WebSphere MQ reports (in the Subsystem Reports category)	Yes
	OMEGAMON XE for CICS (SMF 112)	OMEGAMON reports (in the Subsystem Reports category)  Record Selection extract (in the Extracts category)	Yes
Transaction Resource Usage	CMF performance (SMF 110, class 5)	Transaction Resource Usage Reports	Yes
Exception	CMF exception (SMF 110)	All Exception Reports  Record Selection extract (in the Extracts category)	Yes
Logger	System logger (SMF 88)	Logger report (in the System Reports category)  Logger extract and Report Selection (in the Extracts category)	No



You can specify Performance, Transaction Resource Usage, and Exception Selection Criteria in your Report Set in two places:

- Global Selection Criteria, which apply to all reports in the Report Set, except those that have their own Selection Criteria. Global Selection Criteria are accessed from the Report Set panel.
- Report Selection Criteria, which apply only to a specific report. When Report Selection Criteria are defined, they take precedence over the Global Selection Criteria. Report Selection Criteria are specified on the individual Report panels.

You specify Logger Selection Criteria individually for each System Report/Extract in your Report Set.

You can also specify Performance Selection Criteria in a Report Form. If Selection Criteria are specified in both the Report and the Report Form it uses, records must satisfy both criteria to be selected for the report. For details, see “Selection Criteria in Report Forms” on page 167.

Statistics reports have particular filtering requirements for which the standard Selection Criteria mechanism is not optimal. Instead, the Selection Criteria fields in the Statistics List Report definition use *statistics alerts* to implement both record selection and alerting. For details, see “Statistics selection criteria” on page 167.

Selection Criteria consist of one or more Select Statements. Select Statements in turn consist of one or more INCLUDE/EXCLUDE conditions. You specify these conditions to instruct CICS PA to check field values against the values you specify. For example, you might want to:

- INCLUDE only transactions that ran between 10am and 12pm, and
- INCLUDE only Transaction IDs whose names match the pattern ST\*, and
- INCLUDE only transactions with a response time greater than 100 milliseconds.

For each record, the Select Statements are checked one at a time until the record is either included in or excluded from report processing.

Specifying multiple Select Statements provides you with a powerful facility to enhance your reporting capability. For example, suppose that you have two application systems, FINANCE and STOCK. Each system has its own performance thresholds that must be met. FINANCE transactions, prefixed by FI, must have a response time less than or equal to 100 milliseconds during peak period. STOCK transactions, prefixed by ST, must have a response time less than or equal to 200 milliseconds during peak period.

In this case, you would specify two Select Statements, one for each application:

*Table 5. Select Statements Example*

Selection Criteria	Select Statement	Conditions
Global or Report	FINANCE	TRAN=FI* RESPONSE time from 0 to 100 Active during 09:00 to 16:00
	STOCK	TRAN=ST* RESPONSE time from 0 to 200 Active during 09:00 to 16:00

Each CMF Performance record is checked against the Select Statements. The first Select Statement for the FINANCE system is checked first. If its conditions are met,

then the record is passed to report processing with no further checking. Otherwise, the second Select Statement for the STOCK system is checked next. If its conditions are met, then the record is passed to report processing with no further checking. CMF records failing both Select Statements bypass report processing.

For a detailed discussion and examples, see “Using SELECT statements” on page 525.

When you select Selection Criteria for the first time, you are taken directly to specify a Select Statement. When you have specified at least one, a list is displayed. You can then select (edit), delete, or include/exclude any Statements in the list, or add new ones.

Thus the panel flow is:

1. Edit/View Report Set
2. Selection Criteria (List of Select Statements)
3. Select Statement

## Specifying Selection Criteria

To specify Global Performance or Exception Selection Criteria that will apply to all reports in the Report Set, scroll to the **Selection Criteria** category on the Report Set panel, and then enter line action **S** to select **Performance** or **Exception**.

To specify Selection Criteria for an individual report, select the report on the Report Set panel, and then enter line action **S** next to the **Selection Criteria** field on that Report panel.

If Select Statements have already been specified for this type of Selection Criteria, the Performance Selection Criteria panel is displayed. Otherwise, the Select Statement panel is displayed for you to define your first statement; see “Specifying Select Statements” on page 157.

File Filter Edit Options Help

SAMPLE - Performance Selection Criteria
Row 1 from 2

Command ==> \_\_\_\_\_
Scroll ==> PAGE

/ Exc Description

**S**
ACTIVE from 2005/01/15 to 2005/01/20;RESPONSE 3;CPU COUNT 50-1000

-

RSYSID RMTE;Exc1 TRAN XYZ;

\*\*\*\*\* End of list \*\*\*\*\*

Figure 71. Performance Selection Criteria

This panel lists the Select Statements which together make up the Selection Criteria that you have chosen to specify. One or more Select Statements make up the Selection Criteria against which CICS PA compares each input record to determine whether to include or exclude it in the report. You can select (edit), delete, or include/exclude any statement, insert new ones, or rearrange them (move/copy). The order of the rows is important to the report processor as the final decision on whether to include or exclude a record in the report can depend on the order of the Select Statements against which it is compared.

Each description is translated by CICS PA JCL generation into a `SELECT(PERFORMANCE(...))`, `SELECT(EXCEPTION(...))`, or `SELECT(LOGGER(...))` operand, depending on the type of Selection Criteria.

The options are:

**Exc** Exclude Indicator. An asterisk \* in this field indicates that this Select Statement is excluded from report processing and will not be used to filter records.

To reverse the Exclude indicator, enter line action **X**.

#### Description

This is a summary of the Select Statement, truncated to fit the panel width. EXCLUDE is abbreviated to Excl and INCLUDE is omitted.

To display and edit the full specification, enter line action **S**.

**Line Actions:** Valid line actions are:

<b>/</b>	Display the menu of line actions.
<b>S</b>	Select this row for review or modification
<b>I</b>	Insert a row
<b>R</b>	Repeat this row
<b>C</b>	Copy this row
<b>M</b>	Move this row
<b>A</b>	Move/Copy after this row
<b>B</b>	Move/Copy before this row
<b>D</b>	Delete this row
<b>X</b>	Reverse the Exclude indicator (Include/Exclude)

## Specifying Select Statements

The Select Statement panel is where you specify the details of the Select Statements to filter records. A Select Statement consists of one or more clauses that include or exclude Report Intervals (Performance, and Exception Selection Criteria only) or Field Values (all Selection Criteria).

CICS PA JCL generation translates the Report Intervals into operands with the format:

```
SELECT(PERFORMANCE|EXCEPTION(INCLUDE|EXCLUDE(  
ACTIVE|START|STOP(FROM(date,time),TO(date,time))),...))
```

The Field Values translate to:

```
SELECT(PERFORMANCE|EXCEPTION|LOGGER(INCLUDE|EXCLUDE(  
field(values)),...))
```

To display the Select Statement panel for Global Selection Criteria, enter line action **S** next to **Performance** or **Exception** in the Selection Criteria category on the Report Set panel. For individual Report Selection Criteria, select the report on the Report Set panel, and then enter line action **S** next to the Selection Criteria field. If the Selection Criteria panel is displayed, enter line action **S** against a particular Select Statement listed there.

The Select Statement panels are similar for Performance, Exception, and Logger Selection Criteria. The differences are:

- Performance and Exception Selection Criteria allow you to specify date/time ranges ("report intervals") based on transaction start, stop, or active times. Logger Selection Criteria allow you to specify report intervals based on SMF recording interval end time only.
- The Performance Select Statement panel has two views. To display the second view (showing field lengths and dictionary definitions), press **F11**.

File Edit Lists Options Help

SAMPLE - Performance Select Statement
Row 1 of 2 More: >

Command ==>
Scroll ==> PAGE

	Active	Report Interval			
Inc	Start	From		To	
Exc	Stop	DD/MM/YYYY	HH:MM:SS.TH	DD/MM/YYYY	HH:MM:SS.TH
INC	ACTIVE	15/01/2005		20/01/2005	

Inc	Field	Value or Range			
/ Exc	Name +	Type	Value/From	To	List +
INC	RESPONSE		>=3		Milliseconds
INC	CPU	COUNT	50	1000	

\*\*\*\*\* End of list \*\*\*\*\*

F1=Help F3=Exit F4=Prompt F7=Backward F8=Forward F10=Actions  
F11=Right F12=Cancel

File Edit Lists Options Help

SAMPLE - Performance Select Statement
Row 1 of 2 More: >

Command ==>
Scroll ==> PAGE

	Active	Report Interval			
Inc	Start	From		To	
Exc	Stop	DD/MM/YYYY	HH:MM:SS.TH	DD/MM/YYYY	HH:MM:SS.TH
INC	ACTIVE	15/01/2005		20/01/2005	

Inc	Field	Length	Dictionary Definition	Offset	Length
/ Exc	Name +				
INC	RESPONSE	8	RESP CICSPA D901		
INC	CPU	8	USRCPUT DFHTASK S008		

\*\*\*\*\* End of list \*\*\*\*\*

F1=Help F3=Exit F4=Prompt F7=Backward F8=Forward F10=Actions  
F11=Right F12=Cancel

Figure 72. Performance Select Statement panel - default view and second view

The options for the **Report Intervals** are:

#### Inc/Exc

Specify **INC** to include data records in the report or extract if their transaction Start/Stop time is within the specified time range.

Specify **EXC** if data records whose transaction Start/Stop time is within the specified time range are to be excluded from the report or extract.

#### Active/Start/Stop

**START** refers to when the transaction was attached or when processing continued from a conversational transaction.

**STOP** refers to when the transaction was detached or a conversational transaction waited for terminal input.

**ACTIVE** refers to the entire time span between when the transaction started and stopped. Any part of the transaction active time that occurs between the specified report interval is considered a match. It can be used to make sure long-running transactions are included when their Start or Stop times fall out of the selection range.

For OMEGAMON records, Report Interval selection is limited to the START time; the STOP and ACTIVE options are ignored.

For System Logger records, Report Interval selection is limited to the STOP time.

### Report Interval

This is used to specify a *date/time range* or a *time slot* (times only).

**From** and **To** together specify the report interval. **Date** is either a calendar date in your preferred format or a relative date. **Time** is a time-of-day. (The same edit rules apply as for Report Set Start/Stop.)

Relative dates are specified as 0, -1, -2,... to signify a date relative to the current date. 0 represents today, -1 yesterday, -2 two days ago, and so on. If both From and To dates are specified, they must be in the same format.

For a *date/time range*:

- Either From or To can be omitted to indicate that the range is open-ended.
  - If From is omitted, it defaults to the first input record.
  - If To is omitted, it defaults to the end of file.
- If From date is specified with no time, the start of day is assumed.
  - If To date is specified with no time, the end of day is assumed.

For a *time slot*, both times must be present with no dates to signify the same time slot every day. The times can span midnight.

### More +

CICS PA allows up to 14 report intervals in a Select Statement. You can specify the first report interval on this panel. Enter line action **S** against the first report interval to display the window where you can specify multiple report intervals (see Figure 73 on page 162).

**More +** is displayed at the end of the first report interval to indicate that more than one report interval has been specified.

The options for the **Field Values** are:

### Inc/Exc

Specify **INC** if a data record is to be included in the report or extract when it matches the field and value specification.

Specify **EXC** if the data record is to be excluded from the report or extract if it matches the field and value specification.

### Field Name

The CICS PA name of the data field against which the record is compared. To select one from a list of available names, press **Prompt** (F4) from Field Name (see “Select a field” on page 163 or enter line action **S** (see “Field selection” on page 162).

For the Transaction Resource Usage reports you can specify FILENAME, TSQNAME, or DPLNAME to filter the CMF transaction resource class data

on File name, Temporary Storage Queue name, or distributed program link (DPL) name. FILENAME, TSQNAME, and DPLNAME are ignored for CMF performance class data.

**Type** Some fields require you to specify a type. For example, clock fields require either **COUNT** or **TIME**.

**Value or Range**

Enter the Field Value or Range against which the data records are compared.

- For **Character** fields, specify the Field Value. The value must not exceed the maximum field length. If the value is shorter than the field, it is padded to the right with blanks. Scroll **Right** (F11) to view the field length. The length of character type fields is commonly 8 bytes or less. However, UOWID is 6 bytes hexadecimal requiring an entry of 12 hexadecimal characters (0-F). TSQNAME can be up to 16 characters. Masking characters % (exactly one character) and \* (any number of characters) are allowed. For example, specify TR\* to match all values starting with TR.

To specify a null value, specify two single quotes ' ' or ''.

If you need to specify a list of values, use an Object List.

- For Numeric (**Count** and **Time**) fields, specify a Range. The range can be specified as a From and To value. For example, from 1 to 100. If the To value is not specified then the From value is assumed.

Alternatively you can precede the From value with a comparison operator. For example, specify >=1 for a comparison of greater than or equal to 1. Allowed operators are:

= > >= < <=

Specify time values in seconds (using a decimal point) or milliseconds. For example, we can request RESPONSE in the range 1.12 to 1.25 seconds or the equivalent 1120 to 1250 milliseconds. CICS PA displays **Seconds** or **Milliseconds** accordingly.

**List** The name of an Object List in the current Object Lists data set. You can type in the name directly or to select one from a list of available Object Lists, place the cursor where you want the name inserted and press **Prompt** (F4). See Figure 77 on page 165 for an example of the Object List selection panel. The values in the Object List must be the same type (character or numeric) as the field for which the Object List is specified.

When Report Set JCL is generated, the values in the Object List are listed in the **SELECT** statements along with the explicitly specified values. The order in which the values are listed in the SELECT statement is the same order as they are specified in the Selection Criteria and Object List panel(s), however this order is of no consequence to CICS PA report processing.

**Length**

The length of the field.

**Dictionary Definition (Performance Selection Criteria only)**

The description of the CMF data field in the format:

informalname owner xnnn

where:

- *informalname* is the CMF field name
- *owner* is the CICS component that 'owns' the field

- *x* indicates the data type:
  - A** - 32- or 64-bit count
  - C** - character string
  - D** - CICS PA derived time
  - P** - packed decimal number
  - S** - clock (time-count)
  - T** - STCK time stamp
  - X** - CICS PA calculated count
- *nnn* is the field identifier

Some special fields, such as APPLID and RESPONSE, are not defined in the CMF Dictionary and are given an owner of 'CICSPA'. They are either derived from the fixed section of the CMF record (for example, APPLID), or calculated from two or more other CMF fields (for example, RESPONSE).

User fields can be specified in Select Statements. However, you must specify in Global Options a CICS System that has user fields defined in its MCT. CICS PA recognizes the APPLID associated with the Select Statement, and when a row is selected (**S** line action), the list of field names will include the user fields at the bottom of the list.

#### User Field Offset and Length (Performance Selection Criteria only)

For character user fields when only part of the field is to be checked.

**Offset** is the starting character position and **Length** is the number of characters from this position to be checked. For example, if the user field contains the value ABCDEFG, then specifying offset 3 and length 5 gives CDEFG. Both values are required for character user fields and default to the entire field (offset 1 and maximum length).

CICS PA JCL generation translates these values to:

```
FIELDS(Character(SUBSTR(offset,length)),...)
```

**Line Actions (field rows):** The valid line actions for the **Field Value** rows are:

- |          |  |
|----------|--|
| <b>/</b> | Display the menu of line actions.                                    |
| <b>S</b> | Select a field name from a list (see "Field selection" on page 162). |
| <b>I</b> | Insert a field.  |
| <b>R</b> | Repeat this row.   |
| <b>C</b> | Copy this row.   |
| <b>M</b> | Move this row.   |
| <b>A</b> | Move/Copy after this row.  |
| <b>B</b> | Move/Copy before this row.   |
| <b>D</b> | Delete this row.   |

#### Specifying more than one report interval

To specify more than one **Report Interval**, enter line action **S** against the first Report Interval at the top of the Select Statement panel. **More +** is displayed at the end of the first Report Interval to indicate that more than one report interval has been specified.

File Edit Options Help					
SAMPLE - Report Intervals					Row 1 to 2 of 2
Command ==> _____					Scroll ==> PAGE
	Active	Report Interval			
	Start	From		To	
/	Exc	Stop	DD/MM/YYYY HH:MM:SS.TH	DD/MM/YYYY	HH:MM:SS.TH
_	INC	ACTIVE	15/01/2005	20/01/2005	
***** End of list *****					

Figure 73. Performance Report Intervals

This panel is used to specify multiple report intervals for CMF performance record selection.

**Line Actions:** The valid line actions on this panel are:

- /** Display the menu of line actions.
- I** Insert a row.
- R** Repeat this row.
- C** Copy this row.
- M** Move this row.
- A** Move/Copy after this row.
- B** Move/Copy before this row.
- D** Delete this row.

### Field selection

Field Selection allows you to view expanded field descriptions and select a field name for insertion into your Selection Criteria. To display the Field Selection panel, enter line action **S** against a field or blank row on the Select Statement panel where you want to insert the selected field name.

File Help	
Field Selection	
Row 1 of 11 More: >	
Command ==> _____	Scroll ==> CSR_
Name . . . . TASKNO__ +	
CMF ID . . . : TRANNUM DFHTASK P031	
Description . : Transaction identification number	
Transaction identification number.	
<p>Note: The transaction number field is normally a 4-byte packed decimal number. However, some CICS system tasks are identified by special character 'transaction numbers', as follows:</p> <p>' III' for system initialization task</p> <p>' TCP' for terminal control.</p> <p>These special identifiers are placed in bytes 2 through 4. Byte 1 is a blank (X'40') before the terminal control TCP identifier, and a null value (X'00') before the others.</p>	
F1=Help	F3=Exit
F8=Forward	F10=Prev
F4=Prompt	F11=Next
F6=Resize	F12=Cancel
F7=Backward	

Figure 74. Performance field selection

The panel cycles through all the CMF performance class fields and transaction resource class fields available for selection. Each field is displayed in turn with its



expanded description like that in “Performance field help” on page 164. Details are only available for CICS-defined fields, not user fields.

To cycle through the list of fields, press **F11** or **F10** to move Forward or Backward through the list. You can restart anywhere in the cycle by entering a valid field name then move Forward or Backward from that point.

You can press **Prompt** (F4) from the Name field to display a selection list of fields (see Figure 75).

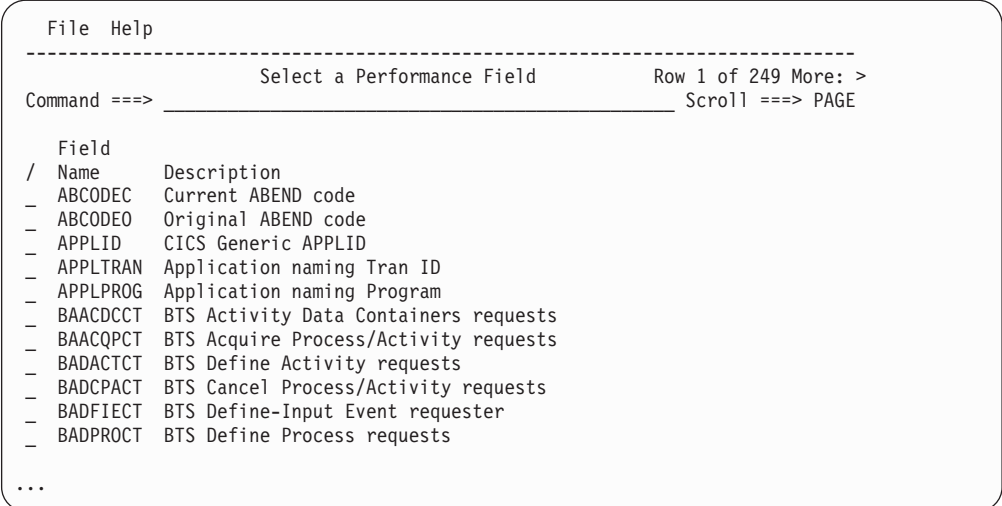
When the required field is displayed in the Name field, press **Exit** (F3) to select it.

### Select a field

Field selection allows you to select a field name for insertion into your Select Statement. The panel lists all CMF performance class and transaction resource class fields available for selection.

To display the selection list, press **Prompt** (F4) from the Name field of the Select Statement.

Performance Selection Criteria, Exception Selection Criteria, and Logger Selection Criteria each present a different list of fields, matching the different record types to which they apply.



```
File Help
-----
Select a Performance Field          Row 1 of 249 More: >
Command ==> _____ Scroll ==> PAGE

Field
/ Name      Description
- ABCODEC   Current ABEND code
- ABCODEO   Original ABEND code
- APPLID    CICS Generic APPLID
- APPLTRAN  Application naming Tran ID
- APPLPROG  Application naming Program
- BAACDCCT  BTS Activity Data Containers requests
- BAACQPCT  BTS Acquire Process/Activity requests
- BADACTION BTS Define Activity requests
- BADCPACT  BTS Cancel Process/Activity requests
- BADFIECT  BTS Define-Input Event requester
- BADPROCT  BTS Define Process requests
...

```

Figure 75. Select a performance field

Scroll **Right** (F11) to see all columns of information about the fields.

```
File Help
-----
                                Select a Performance Field                                Row 1 of 249 More: >
Command ==> _____ Scroll ==> PAGE

Field
/ Name Dictionary Definition
- ABCODEC ABCODEC DFHPROG C114
- ABCODEO ABCODEO DFHPROG C113
- APPLID APPLID CICS PA C903
- APPLTRAN APPLNAME DFHAPPL C001
- APPLPROG APPLNAME DFHAPPL C001
- BAACDCCT BAACDCCT DFHCBTS A217
- BAACQPCT BAACQPCT DFHCBTS A214
- BADACTCT BADACTCT DFHCBTS A209
- BADCPACT BADCPACT DFHCBTS A213
- BADFIECT BADFIECT DFHCBTS A220
- BADPROCT BADPROCT DFHCBTS A208
...

```

To help locate a particular field, you can use the **FIND** and **RFIND** commands, which search in all the displayed fields for a specified string.

To leave without selecting, use Exit or Cancel.

The columns are:

#### Field Name

The CICS PA name for the CMF data field. User fields are listed if an APPLID has been specified in Global Options and its MCT has user fields defined. User fields display at the bottom of the selection list.

Enter line action **S** to select a field. It is inserted into the Select Statement in the row where the cursor is positioned.

#### Description

This is a short description of the field. Enter line action **H** (Help) for a more detailed description. See Figure 76 on page 165 for an example of the help details displayed in a pop-up window.

#### Dictionary Definition

The description of the CMF data field in terms of the CMF informal name, CICS owner, data type, and field identifier. See page “Dictionary Definition (Performance Selection Criteria only)” on page 160 for further information.

#### Performance field help

On the Select a Performance Field panel, if you enter the line action **H** against a field, a pop-up window will display a more detailed explanation of the field.

```

File Help
-----
Command ==> IRWAIT Explanation Row 1 to 5 of 5
                                           Scroll ==> PAGE

Name . . . . : IRWAIT
CMF ID . . . : IRIOWTT DFHTERM S100
Description . : MRO link wait time

Elapsed time for which the user task waited for control at this end of
an MRO link.

Note: This field is a component of the task suspend time, SUSPTIME
(014), field.
***** End of list *****
F1=Help F3=Exit F6=Resize F10=Actions F12=Cancel

```

Figure 76. Performance field help

This panel provides a more detailed description of the field. It is only available for CICS-defined fields, not user-defined fields. The details are:

**Name** The name of the field as it is known to CICS PA.

#### CMF ID

The description of the CMF data field in terms of the CMF informal name, CICS owner, data type, and field identifier. See page “Dictionary Definition (Performance Selection Criteria only)” on page 160 for further information.

#### Description

A short description of the field followed by the expanded description.

### Select an Object List

To display the Object Lists selection list, position the cursor in the **Object List** field of the Select Statement and press **Prompt** (F4).

```

File Help
-----
Command ==> Object Lists Row 1 to 3 of 3
                                           Scroll ==> PAGE

Select an Object List then press Enter.

Name      Description
.  HRTRANS  HR application transactions
.  USERNETW Userids of Network Team
S  ODDNUMS  Odd Numbers
***** End of list *****

```

Figure 77. Select an Object List

This panel displays the Object Lists defined in the current Object Lists data set.

Enter line action **S** (or point-and-shoot) to select an Object List name to insert into your Select Statement.

## Fields checked by Performance Selection Criteria

The field selection list for Performance Selection Criteria displays fields from several record types (described in Table 4 on page 154), even when you are specifying Selection Criteria for a report that processes only one of those record types. If you specify conditions for fields that do not belong to the record type for

the report, those conditions are ignored for that report. The following topics list the Performance Selection Criteria fields that are checked for each record type.

### Selecting DB2 accounting records

The only Performance Selection Criteria fields checked against DB2 accounting records are:

- START
- STOP
- ACTIVE
- UOWID

All other fields are ignored.

DB2 accounting record selection applies to the DB2 report (see Figure 127 on page 233) and the Record Selection extract (see Figure 143 on page 264). Time-based selection depends on whether the DB2 thread Begin-End times are within the specified report intervals.

### Selecting MQ accounting records

The only Performance Selection Criteria fields checked against MQ accounting records are:

- START
- STOP
- ACTIVE
- TASKNO
- TRAN

All other fields are ignored.

MQ accounting record selection applies to the WebSphere MQ report (see Figure 130 on page 238) and the Record Selection extract (see Figure 143 on page 264). Time-based selection depends on whether the MQ thread Begin-End times are within the specified report intervals.

### Selecting OMEGAMON records

CICS PA checks only the following Performance Selection Criteria fields when filtering OMEGAMON records:

#### APPLID

CICS APPLID

#### FILENAME

Database (or file) name

#### NETUOWPX

Originating System VTAM network name

#### START

Task start time.

**Note:** Report Interval-based selection for OMEGAMON XE for CICS records is limited to the Attach (START) time; the STOP and ACTIVE options are ignored.

#### TASKNO

Transaction identification number

**TRAN** CICS transaction ID

## UOWID

Unit of work ID

All other fields are ignored.

OMEGAMON record selection applies to the OMEGAMON reports (see “OMEGAMON reports” on page 241).

## Selecting Transaction Resource Class records

The Transaction Resource Usage Summary reports process both transaction resource class and performance class data. The Transaction Resource Usage List report processes only transaction resource class data. These reports use Performance Selection Criteria to filter both classes of data. For more information, see “Performance Selection Criteria” on page 221.

## Selection Criteria in Report Forms

In addition to specifying Selection Criteria in Report Sets, Selection Criteria can be used in Report Forms (and also in the History Database; see “Performance Selection Criteria” on page 646). For example, the Sample Report Form BADFILE reports the top 20 Worst File Request transactions. It specifies Selection Criteria (FCTOTAL>0) to ensure only transactions that use File Control services are considered for reporting.

Report Form Selection Criteria specification has two benefits:

1. Only transactions that use File Control Services (the focus of this Report Form) are selected.
2. CICS PA only processes (sorts) selected records, significantly reducing the time and overhead of generating the report.

Report Set and Report Form Selection Criteria can be used together:

- **Report Form Selection Criteria** typically focuses on the type of data being reported. For example, if your Form is targeting File Control activity then its Selection Criteria can specify FCTOTAL>0 to include only transactions that used File Control services.

Report Set Selection Criteria generates batch commands using the SELECT operand.

- **Report Set Selection Criteria** typically focuses on the application targeted by the Form. For example, if the Report is targeting MY application then its Selection Criteria can specify TRAN = MY\* to include only transactions in MY application.

Report Form Selection Criteria generates batch commands using the SELECT2 operand.

The resultant report will include data for transactions matching MY\* that use File Control services. For example:

```
CICSPA  SELECT(PERF(INCL(TRAN(MY*)))),  
        SELECT2(PERF(INCL(FCTOTAL(>0))))...
```

Both SELECT and SELECT2 must match for the record to be processed.

---

## Statistics selection criteria

Statistics alerts provide the ability to filter records to include in Statistics batch reports. Statistics alerts allow you to select records based on any field, including statistical, identification, or state fields and support formulae.

A very large volume of CICS statistics can be produced in environments with many CICS systems. To manage this volume of data and to tailor reports to include only the information that you are interested in, CICS PA includes a standard Selection Criteria mechanism for use with many reports.

Statistics reports have particular filtering requirements for which the standard Selection Criteria mechanism is not optimal. Instead, the Selection Criteria fields in the Statistics List Report definition use statistics alerts to implement both record selection and alerting:

- If an alert definition is specified in the report's Selection Criteria options, it and an additional severity level option are used to select records for inclusion in the report.
- The **Include Severity column** option inserts a Sev column in the report to show the severity level that triggered the selection:

**Severity=Critical, Warning, or Info**

The record triggered an alert at the specified severity or higher.

**Severity=Eligible**

The record matched the resource criteria of an alert entry, but might have or might not have triggered an alert.

**Severity=ALL**

All records are selected for reporting. The alert definition acts only as a severity indicator.

In a statistics alert definition, selection criteria can be defined in terms of statistical values and also in terms of character and flag or indicator values. All field types are eligible for inclusion in a condition. The Res (resource) field can be used to specify non-threshold values. Non-statistics fields will be ignored by alert processing.

To specify a resource value to restrict which records the selection criteria are applied to, define two alerts, one for the selection criteria value and another with the Resource value. If either is not included the record is ignored and therefore only records that match both will be included.

**Important:** The resource selection will affect *all* selection criteria for that record (STID). This means that you cannot establish different selection criteria for different resource values for the same record.

### Statistics selection criteria rules

1. Only one field type can be specified in each condition within an alert definition.
2. All fields in a single condition must belong to the same STID (statistics type).
3. Multiple conditions can be defined for a single STID.
4. Each condition is evaluated independently of all other conditions.
5. The first **Exclude** result will terminate record processing. That is, all **Include** conditions must be met.
6. If a Severity level is selected in a report, only conditions at that level or higher are evaluated and reported. For example, if the report specified Severity=Warning, Warning and Critical thresholds are evaluated but Info thresholds are ignored.

## Example: Selection criteria for both alerting and reporting

You can specify which records are to be included or excluded from the report by specifying the fields and value to evaluate against the current record. For example, to include only TCB Pools that currently have Current Max TCB Waits greater than 1 second, define a condition nominating field DSGCURNW and value >1.

```
File Edit Lists Options Help
EDIT Statistics Alert Definition - SALRTSLX Row 1 of 3 More: >
Command ==> Scroll ==> PAGE
Description . . .
Specify the Conditions for this Alert Definition.

- Alert Peak tasks (% of maximum tasks)
  Formula XMGPAT / XMGMXT * 100
  Critical >=90 Warning >=60 Info
  Res DFH* List
  APPLID IYK*

- Alert Java TCB Mode
  Formula DSGTCBNM
  Critical Warning Info
  Res J* List
  APPLID

- Alert TCB Mode not activated
  Formula DSGTCBMD
  Critical Warning Info
  Res UNKNOWN List
  APPLID
```

This example shows an alert definition that can be used for both alerting and report selection criteria.

- For alerting, only the first condition is processed. The second and third condition are ignored.
- For report selection criteria, all three conditions are used.

The first condition will include all Transaction Manager records that have peak task percentage that exceed the nominated threshold level for the specified resource and APPLID. The second and third conditions will select the Dispatcher TCB Modes records with Java™ TCB Modes (DSGTCBNM = J\*) and the value of UNKNOWN in the TCB Mode Open (DSGTCBMD) field.

**Note:** You could not define a fourth condition that specifies a different value such as K\* for field DSGTCBNM. Both conditions could never be true for the same record, so whichever condition is not true will terminate record processing as stated in the selection criteria rules.

## Requesting reports and extracts

In a Report Set, you can request any number of reports and extracts, and any number of instances of them with different reporting options specified. For example, you might request three variations of the Performance List report, one Performance Summary report, and two different Cross-System Work extracts.

When you select a report or extract from the Report Set panel:

- If there is at least one of this type already defined, a list is displayed. You can then select (edit), delete, or include/exclude any in the list, define new ones, or rearrange them (move/copy).
- The list is bypassed if none of this type of report or extract is defined yet, and the Report or Extract definition panel is displayed directly.

Thus the panel flow is:

1. List of Report Sets
2. Edit/View Report Set
3. List of Reports/Extracts
4. Define Report/Extract

For Report Set JCL generation, you must specify the systems that you want to analyze. The systems and files must be defined in System Definitions. You can link directly there by selecting **Systems** in the action bar.

It is recommended that you specify your System Selection at run time, not within the Report Set. This will allow you to run your Report Sets against any of your defined systems.

---

## Performance reports

The Performance Reports process CMF performance class data to produce tabular-style reports.

### Performance List report

The Performance List report provides a detailed list of the CMF performance class records.

To request the report, enter line action **S** against the **List** Performance Report on the Report Set panel. If reports of this type have been previously specified, the list of Performance List Reports is displayed. Otherwise, the Performance List Report panel is displayed for you to define your first report of this type.

File Filter Edit Systems Options Help							
-----							
SAMPLE - Performance List Reports						Row 1 from 4	
Command ==> _____						Scroll ==> _____	
-----							
---- System Selection ----							
/	Exc	APPLID +	Image +	Group +	Output	Form +	Alert + Selection
S		CICSP001	_____	_____	LIST0001	TRANLIST	_____ YES
-		DEVT	MVS1	_____	LIST0002	RESPLIST	_____ NO
-		CICST001	_____	_____	LIST0003	TRANLIST	_____ YES
-	*	_____	_____	RSYSGRP1	LIST0004	_____	_____ NO
***** End of list *****							

Figure 78. Performance List Reports

This panel displays the list of Performance List Reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options are:



**Exc** An asterisk \* in this field indicates that the report or extract is excluded from report processing.

Use line action **X** to reverse the Exclude indicator.

### System Selection

Identifies the CICS APPLIDs whose data you want to select for processing.

You can specify any combination of APPLID, Image, or Group, but these must be defined in your System Definitions. If you do not specify System Selection here or in the Global Options, then you are prompted at run time to specify the System Selection. This will apply globally to all reports and extracts without their own System Selection. This is recommended as it allows you to run your Report Sets against any of your defined Systems. Press the Prompt key (F4) to select from a list of defined Systems, Images, or Groups. To modify your System Definitions, select Systems in the action bar.

Specify one of the following:

- A CICS APPLID. An APPLID that matches a defined System's name pattern is also allowed. For example, CICSP1 can be specified if CICSP\* is a defined system.
- An APPLID and an MVS Image. This identifies the MVS Image where your CICS system runs.
- An MVS Image. All CICS systems executing on this MVS Image is selected.
- An APPLID and Image combination plus a Group. This is useful for uniquely identifying a CICS system when there are multiple CICS systems with the same name defined.
- A Group alone. CICS PA will select all CICS APPLIDs defined to the Group. For example, for transaction grouping, or for systems that connect via IRC/MRO, ISC/APPC, or IPIC.

CICS PA uses the System Selection in JCL generation to build the APPLID(applid1,applid2,applid3,...) and INput(SMFIN001,SMFIN002,SMFIN003,...) operands, and corresponding //SMFINnnn DD statements.

System Selection can also be specified either:

- In Global Options. The report-level specification takes precedence over the global.
- At run time. The run-time System Selection overrides the Global Options and optionally the report-level specification.

### Output

The DDname for the report output which CICS PA uses when generating the JCL to run the Report Set.

This option generates the OUTPUT(ddname) operand.

**Form** The name of a Report Form to be used to tailor the format and content of the report. The report must use a Report Form of a compatible type, that is LIST or LISTX. If not specified, CICS PA uses the default Form. See Figure 161 on page 305 for the default LIST Report Form.

CICS PA JCL generation translates the Report Form specification into the FIELDS operand.

**Alert** The name of a Performance Alert Definition to be used to report performance non-compliance.

## Selection Criteria

This indicator is generated by CICS PA.

**YES** indicates that Selection Criteria are activated for this report or extract.

**NO** indicates that Selection Criteria are not activated for this report or extract. This can mean that no Selection Criteria have been specified, all Select Statements are Excluded, or the Selection Criteria have been deactivated.

**Line Actions:** The valid line actions on the list of reports panel are:

<b>/</b>	Display the menu of line actions
<b>S</b>	Select this row for review or modification
<b>I</b>	Insert a row
<b>R</b>	Repeat this row
<b>C</b>	Copy this row
<b>M</b>	Move this row.
<b>A</b>	Move/Copy after this row
<b>B</b>	Move/Copy before this row
<b>D</b>	Delete this row
<b>X</b>	Reverse the Exclude indicator (Include/Exclude)

**Primary Commands:** The following primary commands are valid for this panel:

### SHOW

This command shows all items in the list, both Included and Excluded. This is the default on entry to the panel.

Also available from **Filter** in the action bar.

**HIDE** This command hides all Excluded items which have \* in the **Exc** column. Only the Included items, where **Exc** is blank, are displayed. If all items are Excluded, a blank row is inserted to accept entry of a new data set specification. Row n from m after the panel title indicates the total number of items in the list. HIDE is only in effect until exit from this panel, or until the next SHOW command is issued.

Also available from **Filter** in the action bar.

### EXCLUDE

This command Excludes all items by displaying \* in their **Exc** column.

Also available from **Edit** in the action bar.

### INCLUDE

This command Includes all Excluded items by removing the \* from their **Exc** column.

Also available from **Edit** in the action bar.

### RESET

This command (or **RES**) removes all outstanding line actions and deletes any blank rows.

Also available from **Edit** in the action bar.

### SYSDEFS

This command opens the Personal System Definitions dialog.

Also available from **Systems** in the action bar.

To display the Performance List Report panel, enter line action **S** against the **List** Performance Report on the Report Set panel, then if the list of previously specified

reports is displayed, enter line action **S** against a particular report in the list.

```

File Systems Options Help
-----
                        SAMPLE - Performance List Report
Command ==> _____

System Selection:
APPLID . . CICSP001 +
Image . . _____ +
Group . . _____ +

Report Output:
DDname . . . . . LIST0001
Print Lines per Page . . ____ (1-255)

Report Focus:
Form . . . TRANLIST +
Alert . . _____ +
Severity _____ +

Report Options:
Title . . _____
_____

Selection Criteria:
_ Performance *

Repository . . :
F1=Help      F3=Exit      F4=Prompt      F7=Backward  F8=Forward  F10=Actions
F12=Cancel

```

*Figure 79. Performance List Report*

Use this panel to specify report options, report format, and record selection criteria for the Performance List report. The only mandatory option is the DDname for the report output. You can let the other options default.

The precision of numerical fields in the report is specified in Global Options (see Figure 70 on page 151).

The options are:

### System Selection

Identifies the CICS APPLIDs whose data you want to select for processing.

You can specify any combination of APPLID, Image, or Group, but these must be defined in your System Definitions. If you do not specify System Selection here or in the Global Options, then you are prompted at run time to specify the System Selection. This will apply globally to all reports and extracts without their own System Selection. This is recommended as it allows you to run your Report Sets against any of your defined Systems. Press the Prompt key (F4) to select from a list of defined Systems, Images, or Groups. To modify your System Definitions, select Systems in the action bar.

Specify one of the following:

- A CICS APPLID. An APPLID that matches a defined System's name pattern is also allowed. For example, CICSP1 can be specified if CICSP\* is a defined system.
- An APPLID and an MVS Image. This identifies the MVS Image where your CICS system runs.
- An MVS Image. All CICS systems executing on this MVS Image is selected.

- An APPLID and Image combination plus a Group. This is useful for uniquely identifying a CICS system when there are multiple CICS systems with the same name defined.
- A Group alone. CICS PA will select all CICS APPLIDs defined to the Group. For example, for transaction grouping, or for systems that connect via IRC/MRO, ISC/APPC, or IPIC.

CICS PA uses the System Selection in JCL generation to build the APPLID(applid1,applid2,applid3,...) and INput(SMFIN001,SMFIN002,SMFIN003,...) operands, and corresponding //SMFINnnn DD statements.

System Selection can also be specified either:

- In Global Options. The report-level specification takes precedence over the global.
- At run time. The run-time System Selection overrides the Global Options and optionally the report-level specification.

### Report Output DDname

The DDname for the report output. Specify 1-8 alphanumeric characters starting with an alphabetic character. The DDname is mandatory and should be unique to separate the output of multiple reports. Multiple reports of the same type can use the same DDname without consequence, however a mix of reports using the same DDname might interleave the print lines.

CICS PA assigns a default DDname **LISTnnnn** where nnnn is a sequential number **0001-9999** to ensure each report has a unique DDname.

This option generates the OUTPUT(ddname) operand.

### Print Lines per Page

The maximum number of lines, including headings, to print on each page of the report. Valid values are from 1 to 255. The default is **60**.

A global value can be specified to apply to all reports. If a value is also specified here on the report panel, it takes precedence over the global for this report only.

CICS PA JCL generation translates this field to the LINECount operand.

### Report Form

The name of a LIST Report Form to be used to tailor the format and content of the report.

To select the name from a list of compatible Report Forms, position the cursor on the Form field and press **Prompt** (F4).

CICS PA JCL generation translates the Report Form specification into the FIELDS operand.

If a Report Form is not specified, CICS PA uses the default Form. See Figure 161 on page 305 for the default Report Form for the LIST report.

### Alert

The name of a Performance Alert Definition.

To select from a list of predefined names, position the cursor on the Alert field and press **Prompt** (F4).

CICS PA JCL generation translates the Alert specification into the ALERTDEF operand.

## Severity

When an Alert name is specified, this suboption allows you to specify the minimum severity level to be reported and type of transactions reported.

The minimum severity level selected for reporting is used to report transactions that have at least that level of reporting in *any* of the severity fields. This could result in transactions being reported with severity lower than the specified severity when the transaction also has one or more severity fields that meets the specified severity criteria. For example, if you specify SEVERITY(CRITICAL) for the report, only transactions with Critical severity are reported, however, if a transaction also exceeds Warning or Info thresholds, the lower severity will be also reported.

Press **Prompt** (F4) to select from the list of available options which are:

### CRITICAL

Only Critical transactions are reported.

### WARNING

Only Critical and Warning transactions are reported.

**INFO** All alerts are reported: Critical, Warning and Informational transactions.

### ELIGIBLE

Only eligible transactions are processed and reported. Eligible transactions are those that have resource values that match resource values specified in the alert definition. The resulting report will include eligible only transactions with and without alerts.

This option provides the means to filter out transactions that would never generate an alert because their resource values do not match resource values specified in the alert definition.

### ALL or blank

All transactions are reported regardless of whether they are eligible or whether they generate an alert. This is the default.

CICS PA JCL generation translates the Severity specification into the SEVERITY(CRITICAL|WARNING|INFO|ELIGIBLE|ALL) operand.

**Title** Title of the report. Specify up to 128 characters of text to describe the report. CICS PA concatenates the two lines of 64 exactly as entered to make one line which prints at the top of each page of the report below the heading. The default is blank (no title).

If the report uses a Report Form, and a title is specified on both, the title on this report panel takes precedence.

This option generates the TITLE1('left-half') and TITLE2('right-half') operands.

## Performance Selection Criteria

You can specify Selection Criteria to filter the CMF records on time period and field values to restrict reporting to the data that is of interest to you.

CICS PA JCL generation translates Selection Criteria to the SELECT(PERFORMANCE operand.

If you specify a Report Form that also has Selection Criteria specified, CICS PA JCL generation translates the Form's Selection Criteria to the

SELECT2(PERFORMANCE operand. If both the report and the Form specify Selection Criteria, then a record must pass selection by both specifications to be included in the report.

**Line Actions:**

- / Display the menu of line actions.
- S Display the subpanel where Selection Criteria can be specified for this report. For details, see “Specifying Selection Criteria” on page 156.
- A Activate the Selection Criteria so they are generated for this report when the Report Set is submitted. Selection Criteria can only be activated if one or more Select Statements are specified and not all are excluded. An asterisk \* indicates they are active.
- D Deactivate the Selection Criteria. Any you have specified here will not be used.

**Repository**

The data set name of the Repository that contains the Performance Alert Definitions.

**Select a System (CICS APPLID)**

To report on a particular system, you can select one from a list of available systems by pressing **Prompt** (F4) from the **CICS APPLID** field in System Selection. Only the systems of that type are displayed. See Figure 80 for an example showing a list of CICS APPLIDs.

Enter line action **S** (or point-and-shoot) to select a system from the list to insert in your System Selection.

Systems
Row 1 to 3 of 3

Command ==> \_\_\_\_\_ Scroll ==> PAGE

Select a System then press Enter.

System	Image	Files	Description
. CICSPO01	MVS1	Yes	CICS system CICSPO01/MVS1
. CICSDO01		Yes	CICS system CICSDO01
. CICSST001		No	CICS testing

\*\*\*\*\* End of list \*\*\*\*\*

Figure 80. Select a System (CICS APPLID)

**Select an MVS Image**

To report on all systems belonging to a particular MVS Image, select an Image by pressing **Prompt** (F4) from an **Image** field in System Selection. All Images defined in System Definitions are listed. See the example in Figure 81 on page 177.

```

File  Help
-----
                                Images                                Row 1 to 1 of 1
Command ==> _____ Scroll ==> PAGE

Select an Image then press Enter.

   Image  Files  Description
.   MVS1    Yes   MVS System MVS1
***** End of list *****

```

Figure 81. Select an Image

This panel displays the Images defined in System Definitions.

Each row gives the Image name and description and shows whether it has files defined and eligible for JCL generation.

Enter line action **S** (or point-and-shoot) to select an Image to insert in System Selection.

### Select a Group

To report on a particular group of systems, select a Group by pressing **Prompt** (F4) from a **Group** field in System Selection. All Groups defined in System Definitions are listed. See the example in Figure 82.

```

File  Help
-----
                                Groups                                Row 1 to 4 of 4
Command ==> _____ Scroll ==> PAGE

Select a Group then press Enter.

   Group    Files  Description
.  PRODMR01   Yes   Production MRO
.  WEEKLY     Yes   Weekly SMF data
.  MONTHLY    Yes   Monthly SMF data
.  YEARLY     No    Yearly SMF data
***** End of list *****

```

Figure 82. Select a Group

This panel displays the Groups defined in System Definitions.

Each row gives the Group name and description and shows whether it has files defined and eligible for JCL generation.

Enter line action **S** (or point-and-shoot) to select a Group to insert in System Selection.

### Select a Report Form

To tailor the format of the report or extract, select a Report Form. Position the cursor on the **Form** field on the Report or Extract panel, then press **Prompt** (F4). Only Forms of compatible type are listed. See Figure 83 on page 178 for an example of Report Forms for the Performance List Report.

```

File  Help
-----
Report Forms          Row 1 to 3 of 3
Command ==>          Scroll ==> PAGE

Select a Report Form then press Enter.

Name      Type      Description
. LISTFRM1 LIST      List Report Form
. RESPLIST LIST      List Report Form
S TRANLIST LIST      List Report Form
***** End of list *****

```

Figure 83. Select a Report Form (LIST Example)

This panel displays the Report Forms defined in the current Report Forms data set.

Enter line action **S** (or point-and-shoot) to select a Report Form to tailor your report.

## Performance List Extended report

The Performance List Extended report provides a detailed list of the CMF performance class records. It differs from the Performance List report in that you can specify the sorting criteria for the performance class records.

To request the report, enter line action **S** against the **List Extended** Performance Report on the Report Set panel. If reports of this type have been previously specified, the list of Performance List Extended Reports is displayed. Otherwise, the Performance List Extended Report panel is displayed for you to define your first report of this type.

```

File  Filter  Edit  Systems  Options  Help
-----
SAMPLE - Performance List Extended Reports          Row 1 from 4
Command ==>          Scroll ==> _____

---- System Selection ----
/ Exc  APPLID + Image + Group + Output  Form + Selection
S      CICSP001          LSTX0001  LISTX1_ YES
      DEVT  MVS1          LSTX0002  LISTX2_ NO
      CICST001          LSTX0003  LISTX1_ YES
      *          RSYSGRP1  LSTX0004          NO
***** End of list *****

```

Figure 84. Performance List Extended Reports

This panel displays the list of Performance List Extended Reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options and line actions are the same as those for the Performance List Reports panel. See "Performance List report" on page 170.

To display the Performance List Extended Report panel, enter line action **S** against the **List Extended** Performance Report on the Report Set panel, then if the list of previously specified reports is displayed, enter line action **S** against a particular report in the list.



File Systems Options Help	
-----	
SAMPLE - Performance List Extended Report	
Command ==> _____	
System Selection:	Report Output:
APPLID . . CICS0001 +	DDname . . . . . LSTX0001
Image . . _____ +	Print Lines per Page . . ____ (1-255)
Group . . _____ +	
Report Format:	
Form . . . LISTX1_ +	
Title . . _____	
-----	
Selection Criteria:	
_ Performance *	
F1=Help F3=Exit F4=Prompt F7=Backward F8=Forward F10=Actions	
F12=Cancel	

Figure 85. Performance List Extended Report

Use this panel to specify report options, report format, and record selection criteria for the Performance List Extended report. The only mandatory option is the DDname for the report output. You can let the other options default.

The report options are the same as those for the Performance List Report. See “Performance List report” on page 170.

CICS PA provides a default **Report Output DDname** in the format **LSTXnnnn** where nnnn is **0001-9999**.

To select **Form** from a list of predefined LISTX Report Forms, use **Prompt** (F4). If a Form is not specified, CICS PA uses the default Form. See Figure 163 on page 313 for the default LISTX Report Form.

The precision of numerical fields in the report is specified in Global Options (see Figure 70 on page 151).

## Performance Summary report

The Performance Summary report is a summary of the CMF performance class records.

To request the report, enter line action **S** against the **Summary** Performance Report on the Report Set panel. If reports of this type have been previously specified, the list of Performance Summary Reports is displayed. Otherwise, the Performance Summary Report panel is displayed for you to define your first report of this type.

File Filter Edit Systems Options Help							
SAMPLE - Performance Summary Reports						Row 1 from 4	
Command ==>				Scroll ==>			
----- System Selection -----							
/	Exc	APPLID +	Image +	Group +	Output	Form +	Alert + Selection Criteria
S		CICSP001			SUMM0001	SUMMARY1	YES
-		DEVT	MVS1		SUMM0002	SUMMARY2	NO
-		CICST001			SUMM0003	SUMMARY1	YES
-	*			RSYSGRP1	SUMM0004		NO
***** End of list *****							

Figure 86. Performance Summary Reports

This panel displays the list of Performance Summary Reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options and line actions are the same as those for the Performance List Reports panel. See “Performance List report” on page 170.

To display the Performance Summary Report panel, enter line action **S** against the **Summary** Performance Report on the Report Set panel, then if the list of previously specified reports is displayed, enter line action **S** against a particular report in the list.

File Systems Options Help	
SAMPLE - Performance Summary Report	
Command ==>	
System Selection:	Report Output:
APPLID . . <b>CICSP001</b> +	DDname . . . . . <b>SUMM0001</b>
Image . . _____ +	Print Lines per Page . . ____ (1-255)
Group . . _____ +	
Report Focus:	Report by time interval:
Form . . . TDSUM _____ +	Interval . . . <b>00:01:00</b> (hh:mm:ss)
Alert . . _____ +	Override Form _____ +
_ Eligible transactions only	Timestamp . . . _____ +
Reporting Options:	
Totals Level . . <b>8</b>	(blank or 0-8)
Title . . _____	
Selection Criteria:	Execution Option:
_ Performance *	/ Use External Sort
Repository . . : CICSPA.XYX.REPOSTRY	
F1=Help F3=Exit F4=Prompt F7=Backward F8=Forward F10=Actions	
F12=Cancel	

Figure 87. Performance Summary Report

Use this panel to specify report options, report focus, and record selection criteria for the Performance Summary report. The only mandatory option is the DDname for the report output. You can let the other options default.

The precision of numerical fields in the report is specified in Global Options (see Figure 70 on page 151).

The report options are the same as those for the Performance List Report (see “Performance List report” on page 170) but with the following additional options:

**Alert** Specifies the Performance Alert Definition name.

**Eligible transactions only**

Indicates that the report should only process transactions that are eligible for alert processing. That is, their resource values match those specified in the alert definition. This option results in only alert eligible transactions being summarized in the report regardless of whether they generate an alert. This option effectively makes it an alert specific report. This option is ignored if no Performance Alert Definition name is specified.

**Report by time interval**

Provide flexibility when reporting by time interval. You can override the Form key fields by prefixing, appending, or replacing it with one of the timestamp fields. This gives you an easy means of using a common Summary Form to generate various interval-based reports without creating individual Forms for each report. This is achieved by allowing you to manipulate the Form key through the use of these options to create the required reports.

**Interval**

The time interval applies when you want to summarize transaction activity over time. It is used when you specify a SUMMARY Report Form which has any of the key fields **OSTART**, **START**, or **STOP** included. When reporting, CICS PA accumulates the data for each interval in the report period and writes a report line for each.

Specify a value in the range **00:00:01** (1 second) to **24:00:00** (24 hours). The default is **00:01:00** (1 minute).

A time interval of less than one hour must fit evenly into the hour. CICS PA will round it down to the nearest interval that aligns to the hour. For example, 1.35 is reduced to 00:01:30 minutes which will produce 40 interval report lines for each hour of data.

A time interval of more than one hour must fit evenly into the day. CICS PA will round it down to the nearest interval that aligns to the day. For example, 10.30.23 is reduced to 08:00:00 hours which will produce 3 interval report lines for each day of data.

Minutes take precedence for an abbreviated entry. For example:

- 1** becomes 00:01:00
- 1.1** becomes 00:01:00 (rounded down from 00:01:01)
- 1.1.1** becomes 01:00:00 (rounded down from 01:01:01)

This option generates the **INTERVAL(hh:mm:ss)** operand.

**Override Form**

Specifies whether to **PREFIX**, **APPEND** or **REPLACE** the key fields specified in the Form. Based on the action in this option, JCL generation will generate the required Form key using the override option and field specified in Timestamp. Ensure that the resulting key conforms to the Summary key rules. No action will be taken if this field is blank. The Form itself is not affected, only the generated **FIELDS** key fields.

This option is ignored if no Form is specified.

**Timestamp**

Specifies the field name to override the Form key fields. Valid timestamp fields are **START**, **STOP**, and **OSTART**.

### Totals Level

This option applies only to the Summary report. Leave blank if you do not want to include total lines in the report. This generates the NOTOTALS operand.

Specify a number between 1 and 8 to accumulate subtotals for up to 8 sort fields, print the subtotals when the sort field changes, and print a grand total at the end of the report. This generates the TOTALS(n) operand where n is a value between 1 and 8. Default: 8

Specify 0 for no subtotals, but print only the grand total. This generates the TOTALS(0) operand.

### Use External Sort

Select / to use an external sort utility to process summary records. This is the default. It generates the **EXTERNAL(ddname)** operand. This provides the DDname of the work data set used by the external sort utility. CICS PA assigns an External Work File from a pool of External Work Files with default DDnames in the format **CPAXWnnn** where nnn is a sequential number **001-999** to uniquely identify the work file.

An external sort should be used when processing large volumes of data. Note that the volume of data is not determined by the number of input records. It depends on the number of unique values that have to be tracked for the SUMMARY report sort key.

For example:

- **FIELDS(TRAN)** will generate a report line for each Transaction ID and can usually be handled by an internal sort.
- **FIELDS(USERID,TRAN)** will generate a report line for every combination of Userid and Transaction ID. In this case, consider using an External Sort.

If this option is not selected, an internal sort is used. That is, CICS PA sorts the records in virtual storage.

### Repository

The data set name of the Repository that contains the Performance Alert Definitions.

CICS PA provides a default **Report Output DDname** in the format **SUMMnnnn** where nnnn is **0001-9999**.

To select a **Form** from a list of predefined SUMMARY Report Forms, use **Prompt** (F4). If a Form is not specified, CICS PA uses the default Form. See Figure 165 on page 318 for the default SUMMARY Report Form.

## Performance Totals report

The Performance Totals report provides detailed statistics of all fields in the CMF performance class records. The statistics are accumulated during input file processing, and printed at the End of File.

To request the report, enter line action **S** against the **Totals** Performance Report on the Report Set panel. If reports of this type have been previously specified, the list of Performance Totals Reports is displayed. Otherwise, the Performance Totals Report panel is displayed for you to define your first report of this type.

```

File  Filter  Edit  Systems  Options  Help
-----
                        SAMPLE - Performance Totals Reports                Row 1 from 4
Command ==> _____ Scroll ==> _____

      ---- System Selection ----
/  Exc  APPLID + Image + Group + Output      Selection
S      CICSP001          _____ TOTL0001  Criteria
-      DEVT _____ MVS1 _____ TOTL0002  NO
-      CICST001          _____ TOTL0003  YES
-      * _____ _____ RSYSGRP1 TOTL0004  NO
***** End of list *****

```

Figure 88. Performance Totals Reports

This panel displays the list of Performance Totals Reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options and line actions are the same as those for the Performance List Reports panel, except there is no Report Form. See “Performance List report” on page 170.

To display the Performance Totals Report panel, enter line action **S** against the **Totals** Performance Report on the Report Set panel, then if the list of previously specified reports is displayed, enter line action **S** against a particular report in the list.

```

File  Systems  Options  Help
-----
                        SAMPLE - Performance Totals Report
Command ==> _____

System Selection:
APPLID . . CICSP001  +
Image   . . _____ +
Group   . . _____ +

Report Output:
DDname . . . . . TOTL0001
Print Lines per Page . . ____ (1-255)

Report Format:
Title   . . _____

Selection Criteria:
_ Performance *

F1=Help      F3=Exit      F4=Prompt      F7=Backward  F8=Forward  F10=Actions
F12=Cancel

```

Figure 89. Performance Totals Report

Use this panel to specify report options and record selection criteria for the Performance Totals report. The report format is fixed. The only mandatory option is the DDname for the report output. You can let the other options default.

The report options are the same as those for the Performance List report (see “Performance List report” on page 170), except there is no Report Form.

CICS PA provides a default **Report Output DDname** in the format **TOTLnnnn** where nnnn is **0001-9999**.

## Wait Analysis report

The Wait Analysis report provides a breakdown of wait activity by Transaction ID (or other ordering fields). You can see at a glance which CICS resources are

causing your transactions to be suspended. This report can help you to quickly identify the possible source of a performance response time problem.

To request the report, enter line action **S** against the **Wait Analysis** Performance Report on the Report Set panel. If reports of this type have been previously specified, the list of Wait Analysis Reports is displayed. Otherwise, the Wait Analysis Report panel is displayed for you to define your first report of this type.

```

File  Filter  Edit  Systems  Options  Help
-----
                        SAMPLE - Wait Analysis Reports                        Row 1 from 4
Command ==> _____ Scroll ==> _____

      ---- System Selection ----
/  Exc  APPLID + Image + Group + Output      Selection
S      CICSP001          WAIT0001      YES
-      DEVT          MVS1          WAIT0002      NO
-      CICST001          WAIT0003      YES
-      *          RSYSGRP1          WAIT0004      NO
***** End of list *****

```

Figure 90. Wait Analysis Reports

This panel displays the list of Wait Analysis Reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options and line actions are the same as those for the Performance List Reports panel, except there is no Report Form. See “Performance List report” on page 170.

To display the Wait Analysis Report panel, enter line action **S** against the **Wait Analysis** Performance Report on the Report Set panel, then if the list of previously specified reports is displayed, enter line action **S** against a particular report in the list.

```

File  Systems  Options  Help
-----
                        SAMPLE - Wait Analysis Report
Command ==> _____

System Selection:                                Report Output:
APPLID . . CICSP001  +                          DDname . . . . . WAIT0001
Image . .           +                          Print Lines per Page . . (1-255)
Group . .           +

Order by:
1 . .           + 2 . .           + 3 . .           +

Processing Options:
Time Interval . . . 00:01:00 (hh:mm:ss)

Report Format:
Title . . _____

Selection Criteria:
_ Performance *

F1=Help      F3=Exit      F4=Prompt      F7=Backward  F8=Forward  F10=Actions
F12=Cancel

```

Figure 91. Wait Analysis Report

Use this panel to specify report options and record selection criteria for the Wait Analysis report. The report format is fixed. The only mandatory option is the DDname for the report output. You can let the other options default.

The report options are the same as those for the Performance List Report (see “Performance List report” on page 170), except there is no Report Form and there are additional ordering and processing options:

#### Order by

Specify the Field names that the Wait Analysis report is to be ordered by. If not specified, the report is ordered by Transaction ID. You can use **Prompt** (F4) to select from a list of allowed fields: TRAN, START, STOP, APPLID, PROGRAM, TERM, USERID, APPLPROG, APPLTRAN, FCTY, LUNAME, RLUNAME, RPTCLASS, SRVCLASS, TCLASSNM, TCPSRVCE, TERMCNNM, ISIPICNM, WBATMSNM, WBPIPLNM, WBPROGNM, WBSVCENM, WBSVOPNM, WBURIMNM.

#### Time Interval

The time interval applies when you want to summarize wait activity over time, and is only applicable when one of the Ordering fields is a time stamp (START or STOP). For example, specify 00:15:00 if you want to summarize activity over 15 minute intervals.

Specify a value in the range **00:00:01** (1 second) to **24:00:00** (24 hours). The default is **00:01:00** (1 minute).

A time interval of less than one hour must fit evenly into the hour. CICS PA will round it down to the nearest interval that aligns to the hour. For example, 1.35 is reduced to 00:01:30 minutes which will produce 40 interval report lines for each hour of data.

A time interval of more than one hour must fit evenly into the day. CICS PA will round it down to the nearest interval that aligns to the day. For example, 10.30.23 is reduced to 08:00:00 hours which will produce 3 interval report lines for each day of data.

Minutes take precedence for an abbreviated entry. For example:

- 1** becomes 00:01:00
- 1.1** becomes 00:01:00 (rounded down from 00:01:01)
- 1.1.1** becomes 01:00:00 (rounded down from 01:01:01)

This option generates the INTERVAL(hh:mm:ss) operand.

CICS PA provides a default **Report Output DDname** in the format **WAITnnnn** where nnnn is **0001-9999**.

## Transaction Profiling report

The Transaction Profiling report compares two sets of CMF performance class data. For example, the performance data for a particular CICS application in two different time periods, or the performance data for all applications on two systems. The two sets of data to be compared are known as the report data and the baseline data. The Transaction Profiling report can show differences between the report data and baseline data as a “delta” (report data values minus their equivalent baseline data values) or as a percentage change.

To understand how the Transaction Profiling report compares the two sets of data, it is useful to think of the Transaction Profiling report as a consolidated view of two Performance Summary reports: one for the report data and one for the baseline data. CICS PA summarizes the two sets of data separately, then

consolidates them by finding a row in the summarized baseline data whose key fields match a row in the summarized report data. CICS PA then compares the values of the non-key fields in the two matched rows. For more information about Performance Summary reports, see “Performance Summary report” on page 179.

You can request the Transaction Profiling report as part of a Report Set, as described here, or you can request the report independently of any Report Set, using option 7 **Profiling** on the CICS PA Primary Option Menu. The Profiling option offers more flexibility than a Report Set for the source of the report data and baseline data. Using a Report Set, the report data must reside in one or more SMF files and the baseline data must reside in a performance HDB. Using the Profiling option, the report data and baseline data can reside in performance HDBs or SMF files. However, the Profiling option only allows you to request one Transaction Profiling report at a time, while a Report Set allows you to define many Transaction Profiling reports. For more information on the Profiling option, see “Requesting a Transaction Profiling report outside a Report Set” on page 195.

To request the report in a Report Set, enter line action S against the **Transaction Profiling** Performance Report on the Report Set panel. If reports of this type have been previously specified, the list of Transaction Profiling reports is displayed. Otherwise, the Transaction Profiling Report panel is displayed for you to define your first report of this type.

```

File  Filter  Edit  Systems  Options  Help
-----
                SAMPLE - Transaction Profiling Reports                Row 1 from 4
Command ===> _____ Scroll ===> _____

---- System Selection ----
/  Exc  APPLID +  Image +  Group +  Output  Report  Form +  HDB +  Selection
S      CICSP001      _____      PROF0001  CPUSUM  HDBP001  YES
-      DEVT      MVS1      _____      PROF0002  CPUSUM  HDBDEVT  NO
-      CICST001      _____      PROF0003  TDSUM  HDBT001  YES
-      *      _____      RSYSGRP1  PROF0004  TDSUM  HDBG1  NO
***** Bottom of data *****

```

Figure 92. Transaction Profiling Reports

This panel displays the list of Transaction Profiling reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The line actions that you can perform are the same as those for the Performance List Reports panel. See “Performance List report” on page 170.

To display the Transaction Profiling Report panel, enter line action S against the **Transaction Profiling** Performance Report on the Report Set panel, then if the list of previously specified reports is displayed, enter line action S against a particular report in the list.



```

File Systems Options Help
-----
                        SAMPLE - Transaction Profiling Report
Command ==> _____

Report System Selection:                Report Output:
APPLID . . _____ +                DDname . . . . . PROF0001
Image . . . _____ +                Print Lines per Page . . ____ (1-255)
Group . . . _____ +

Baseline Historical Database:            ---- Baseline Interval ----
HDB . . . . _____ +                YYYY/MM/DD HH:MM:SS.TH
                                         From _____
                                         To   _____

Report Format:
Report Form . . . _____ +          Baseline Form . . _____ +
Title . . _____

Summary Options:                        Reporting Options:
Time Interval . . 00:01:00 (hh:mm:ss)  Lines . . . . / Report / Baseline
Totals Level . . 8 (blank or 0-8)       / Delta / Change
                                         Threshold . . ____ % Above
                                         % Below Baseline
Selection Criteria:                     Exclude . . . ____ Within threshold
_ Performance                           / Blank lines

Execution Option:
/ Use External Sort

Repository . . : CICSPA.XYX.REPOSTRY

```

Figure 93. Transaction Profiling Report (in a Report Set)

Use this panel to specify the options of the Transaction Profiling report. The only mandatory options are DDname for the report output and Baseline Historical Database for the source of the baseline data. You can let the other options default.

The precision of numerical fields in the report is specified in Global Options (see Figure 70 on page 151).

The options are similar to the Performance Summary report, with additional options for Transaction Profiling:

### Report System Selection

Identifies the CICS APPLIDs whose records you want to select from SMF files for processing as the report data (for comparison with the baseline data in an HDB).

You can specify any combination of APPLID, Image, or Group, but these must be defined in your System Definitions. If you do not specify System Selection here or in the Global Options, then you are prompted at run time to specify the System Selection. This will apply globally to all reports and extracts without their own System Selection. This is recommended as it allows you to run your Report Sets against any of your defined Systems. Press the **Prompt** key (F4) to select from a list of defined Systems, Images, or Groups. To modify your System Definitions, select **Systems** in the action bar.

Specify one of the following:

- A CICS APPLID. An APPLID that matches a defined System's name pattern is also allowed. For example, CICSP1 can be specified if CICSP\* is a defined system.
- An APPLID and an MVS Image. This identifies the MVS Image where your CICS system runs.

- An MVS Image. All CICS systems executing on this MVS Image is selected.
- An APPLID and Image combination plus a Group. This is useful for uniquely identifying a CICS system when there are multiple CICS systems with the same name defined.
- A Group alone. CICS PA will select all CICS APPLIDs defined to the Group. For example, for transaction grouping, or for systems that connect via IRC/MRO, ISC/APPC, or IPIC.

CICS PA uses the System Selection in JCL generation to build the `APPLID(applid1,applid2,applid3,...)` and `INPUT(SMFIN001,SMFIN002,SMFIN003,...)` operands, and corresponding `//SMFINnnn DD` statements.

System Selection can also be specified either:

- In Global Options. The report-level specification takes precedence over the global.
- At run time. The run-time System Selection overrides the Global Options and optionally the report-level specification.

#### **Report Output DDname**

The DDname for the report output. Specify 1-8 alphanumeric characters starting with an alphabetic character. The DDname is mandatory and should be unique to separate the output of multiple reports. Multiple reports of the same type can use the same DDname without consequence, however a mix of reports using the same DDname might interleave the print lines.

CICS PA assigns a default DDname `PROFnnnn` where `nnnn` is a sequential number 0001-9999 to ensure each report has a unique DDname.

This option generates the `OUTPUT(ddname)` operand.

#### **Print Lines per Page**

The maximum number of lines, including headings, to print on each page of the report. Valid values are from 1 to 255. The default is 60.

A global value can be specified to apply to all reports. If a value is also specified here on the report panel, it takes precedence over the global for this report only.

CICS PA JCL generation translates this field to the `LINECount` operand.

#### **Baseline Historical Database**

The List or Summary Performance HDB, in the current Repository, containing the baseline data that you want to compare with the report data. You must have already defined this HDB and loaded it with data.

The current repository is specified in either option 5 Historical Database or option 7 Profiling from the Primary Option Menu.

#### **Baseline Interval**

Specify a date/time range or a time slot (times only) to filter the baseline data based on the transaction start time (START field) in the HDB records. HDB records with a transaction start time (START field) within the specified From-To interval are processed by CICS PA, otherwise they are ignored.

You specify the Baseline Interval in the same way that you specify the Report Interval when you run the Report Set. For details, see the description of the Start Date/Time, Stop Date/Time option in “Set run-time options” on page 280.

### **Report Form and Baseline Form**

The names of SUMMARY Report Forms that specify the key fields that you want report data and baseline data records to be grouped and sorted by, the “non-key” fields whose values you want to compare, and the functions for summarizing the non-key field values (for example, as an average or a total).

You must have already defined the SUMMARY Report Forms that you want to use. To select the name from a list of SUMMARY Report Forms, position the cursor on the field and press Prompt (F4).

CICS PA JCL generation translates the SUMMARY Report Form specification into the FIELDS operand.

To understand how the Transaction Profiling report uses the Report Form and the Baseline Form, it is useful to think of it as a comparison of two Performance Summary reports. See “Transaction Profiling report compares two Performance Summary reports” on page 194.

Using forms for the Transaction Profiling report involves the following additional considerations to using forms in the Performance Summary report:

- The Report Form specifies how the Transaction Profiling report summarizes the report data, and also which fields appear on the Transaction Profiling report.
- If you do not specify a Report Form, the Transaction Profiling report creates one:
  - If the report data resides in SMF files (see the following note), the Transaction Profiling report uses a default form.
  - If the report data resides in an HDB, the Transaction Profiling report uses the HDB Template as the Report Form.

For a List HDB Template, the Transaction Profiling report treats all character and date fields as key fields, and uses the average function to summarize the other, non-key, fields. The key fields must precede the non-key fields in the Template: otherwise, CICS PA reports an error.

**Note:** If you request the Transaction Profiling report via the CICS PA ISPF dialog as part of a Report Set, then the report data must reside in SMF files. However, if you run the Transaction Profiling report independently of a Report Set, via the Profiling option on the CICS PA Primary Option Menu, then the report data can reside in SMF files or an HDB.

- The Baseline Form and the Report Form together specify how the Transaction Profiling report summarizes the baseline data:
  - The Transaction Profiling report ignores any fields in the Baseline Form that are not in the Report Form. For example, if the Baseline Form contains key fields that are not in the Report Form, then these key fields are ignored when summarizing the baseline data. Similarly, any non-key fields that appear in the Baseline Form but not the Report Form are ignored.

- The Transaction Profiling report ignores the order of the fields in the Baseline Form. For example, when summarizing the baseline data, the Transaction Profiling report uses the key fields in the Baseline Form that also appear in the Report Form, but according to the order of those key fields in the Report Form.
- If you do not specify a Baseline Form, the Transaction Profiling report creates one:
  - If the baseline data resides in an HDB (see the following note), the Transaction Profiling report uses the HDB Template as the Baseline Form. As for any Baseline Form, the Transaction Profiling report ignores any fields in the HDB Template that are not in the Report Form, and also ignores the order of the fields in the HDB Template. For a List HDB Template, the Transaction Profiling report treats character and date fields as key fields, and uses the average function to summarize the other, non-key, fields.
  - If the baseline data resides in SMF files, the Transaction Profiling report uses the Report Form as the Baseline Form.

**Note:** If you request the Transaction Profiling report via the CICS PA ISPF dialog as part of a Report Set, then the baseline data must reside in an HDB. However, if you run the Transaction Profiling report independently of a Report Set, via the Profiling option on the CICS PA Primary Option Menu, then the baseline data can reside in SMF files or an HDB.

- When summarizing baseline data, the Transaction Profiling report uses only the time-of-day part of any START or STOP key field (transaction start or stop), ignoring the date part. The summarized baseline data for a time-of-day interval matches the summarized report data for that time-of-day interval on any date. For example, if you specify a report data interval of five days and a baseline data interval of five days, then the Transaction Profiling report summarizes each day of report data separately, but summarizes the five days of baseline data together. The Transaction Profiling report compares each daily set of summarized report data with the same set of summarized baseline data. To compare each weekday of the previous week with the same weekday from a week one year ago (compare Monday with another Monday, Tuesday with another Tuesday, etc.), you must run five separate Transaction Profiling reports.
- Defining fields as Primary keys in the report form has no effect in the Transaction Profiling report. These fields are treated as ASCENDING key fields.
- In a Performance Summary report, in addition to key fields, you can select one numeric field as Ascending or Descending to activate Alternate Sequencing. The Transaction Profiling report ignores any Alternate Sequencing.

Typically, you only need to specify a Report Form, not a Baseline Form: this ensures matching fields in the two sets of summarized data (assuming that the report data and the baseline data actually contain the fields specified in the form). However, a different Baseline Form is useful in the following cases:

- To specify selection criteria that apply only to the baseline data (you can specify selection criteria inside a form).

- To group the baseline data using fewer key fields than the Report Form uses to group the report data.  
If you omit key fields from the Baseline Form that appear in the Report Form, then the Transaction Profiling report matches rows in the two sets of summarized data based on their common key fields. The typical effect is that several rows of summarized report data (with more key fields) match one row of baseline data.
- To limit which non-key fields show values in the Baseline, Delta, and Change lines.  
If the Baseline Form omits some of the non-key fields specified by the Report Form, then the Transaction Profiling report shows blanks for these missing fields in the Baseline, Delta, and Change lines.

**Title** Title of the report. Specify up to 128 characters of text to describe the report. CICS PA concatenates the two lines of 64 exactly as entered to make one line which prints at the top of each page of the report below the heading. The default is blank (no title).

If the report uses a Report Form, and a title is specified on both, the title on this report panel takes precedence.

This option generates the TITLE1('left-half') and TITLE2('right-half') operands.

#### **Time Interval**

The time interval applies when you want to summarize transaction activity over time. It is used when you specify a SUMMARY Report Form that includes time stamp sort key fields, such as START or STOP. When reporting, CICS PA accumulates the data for each interval in the report period and writes a report line for each.

**Summary HDBs only** Data in a Summary HDB is already summarized by the interval that was used to load the data into the HDB. To further summarize the data, specify a multiple of the interval that was used to load the data. If you specify an interval that is equal to or less than the interval used to load the data, the report uses the data as-is, without further summarization.

Specify a value in the range 00:00:01 (1 second) to 24:00:00 (24 hours). The default is 00:01:00 (1 minute).

A time interval of less than one hour must fit evenly into the hour. CICS PA will round it down to the nearest interval that aligns to the hour. For example, 1.35 is reduced to 00:01:30 minutes which will produce 40 interval report lines for each hour of data.

A time interval of more than one hour must fit evenly into the day. CICS PA will round it down to the nearest interval that aligns to the day. For example, 10.30.23 is reduced to 08:00:00 hours which will produce 3 interval report lines for each day of data.

Minutes take precedence for an abbreviated entry. For example:

**1** becomes 00:01:00  
**1.1** becomes 00:01:00 (rounded down from 00:01:01)  
**1.1.1** becomes 01:00:00 (rounded down from 01:01:01)

This option generates the INTERVAL(hh:mm:ss) operand.

#### **Totals Level**

Specify a number between 1 and 8 to accumulate subtotals for up to 8 sort

fields, print the subtotals when the sort field changes, and print a grand total at the end of the report. This generates the TOTALS(n) operand for n between 1 and 8. Default: 8.

Specify 0 for no subtotals, but print only the grand total. This generates the TOTALS(0) operand.

Leave blank if you do not want to include total lines in the report. This generates the NOTOTALS operand.

**Lines** Specifies the lines of data that you want the Transaction Profiling report to show for each non-key field in the Report Form:

**Report**

Summarized report data value. This line is always implicitly specified.

**Baseline**

Summarized baseline data value.

**Delta** **Report** minus **Baseline**.

**Change**

Percentage difference between **Report** and **Baseline**. For example:

Report	1.0	0.1
Baseline	0.4	0.5
Change%	+150.00	-80.00

This option generates the REPORT, BASELINE, DELTA, and CHANGE values of the PRINT operand.

**Threshold**

Specifies minimum thresholds for the Change values that you want the report to include. Change values are the percentage difference between the report data and the baseline data (for details, see the Lines option):

- If a Change value is within the thresholds, the report excludes the Change value and its corresponding Delta value (shows them as blanks).
- If all values on a Change line are within the thresholds, and you have also specified the Exclude within threshold option, then the report excludes that entire block of report data (the Change line, its corresponding Report, Baseline, and Delta lines, and its key field values).

You can specify either or both of the following thresholds:

**% Above Baseline**

This threshold applies only to positive Change values; that is, where the Report value is greater than the Baseline value. The allowed values for this threshold are integers in the range 0-999.

For example, a threshold of 150 excludes Change values smaller than +150%.

If you specify a threshold of 0, the report includes all positive Change values.

**% Below Baseline**

This threshold applies only to negative Change values. The allowed values for this threshold are integers in the range 0-100.

For example, a threshold of 80 excludes Change values smaller than -80%.

If you specify a threshold of 0, the report includes all negative Change values.

If you omit both thresholds or you specify both thresholds as 0, the report includes all Change values.

If you specify a value for % Above Baseline but you omit % Below Baseline, then the report:

- Applies the threshold to positive Change values
- Excludes all negative Change values

If you specify a value for % Below Baseline but you leave % Above Baseline blank, then the report:

- Applies the threshold to negative Change values
- Excludes all positive Change values

This option generates the THRESHOLD(nnn,nnn) operand.

#### **Exclude within threshold**

Excludes all lines, including the Report line, where the difference between every non-key field in a row of summarized baseline data and the same fields in the matching row of summarized report data are all within the thresholds.

The Baseline Form can specify a subset of the non-key fields in the Report Form, leaving the summarized baseline data with fewer non-key fields than the summarized report data. Specifying this Exclude within threshold option, together with a Baseline Form that contains only one non-key field, enables you to produce a Transaction Profiling report that only shows data where that field is not within thresholds. For example, if you specify a Baseline Form where the only non-key field is average response time, then you can produce a Transaction Profiling report that shows only the transactions that are not within an acceptable percentage difference of a baseline average response time.

Selecting this option generates the EXCEPTIONSONLY value of the PRINT operand. Otherwise, the PRINT operand specifies FULL (the default value).

#### **Exclude blank lines**

Excludes any Baseline, Delta, or Change lines whose data consists entirely of blank values. Blank values on these lines indicate either fields with no baseline data or, on the Delta and Change lines, fields where the difference between the report data and the baseline data is within the specified thresholds. This option has no effect on the Report line, which shows the summarized report data even when this option excludes all other lines. To exclude all lines, including the Report line, when the difference between the report data and the baseline data is within the thresholds, select the Exclude within threshold option.

Selecting this option generates the NOBLANKLINES value of the PRINT operand (the default value). Otherwise, the PRINT operand specifies BLANKLINES.

#### **Performance Selection Criteria**

You can specify Selection Criteria to filter input records on time period and field values to restrict reporting to the data that is of interest to you. These Selection Criteria apply to both the report data and to the baseline data.



CICS PA JCL generation translates these Selection Criteria to identical SELECT(PERFORMANCE operands in the PROFILING(REPORT(...)) operand and the PROFILING(BASELINE(...)) operand.

You can also filter report data and baseline data records using different Selection Criteria, by specifying Selection Criteria inside the Report Form or the Baseline Form. Selection Criteria in the Report Form apply only to the report data, even if you do not specify a Baseline Form. Selection Criteria in the Baseline Form apply only to the baseline data.

CICS PA JCL generation translates Selection Criteria in the Report Form to the SELECT2(PERFORMANCE operand in the PROFILING(REPORT(...)) operand, and Selection Criteria in the Baseline Form to the SELECT2(PERFORMANCE operand in the PROFILING(BASELINE(...)) operand.

If both the report and a Form specify Selection Criteria, then a record must pass selection by both specifications to be included in the report.

**Line Actions:**

- / Display the menu of line actions.
- S Display the subpanel where Selection Criteria can be specified for this report. For details, see “Specifying Selection Criteria” on page 156.
- A Activate the Selection Criteria so they are generated for this report when the Report Set is submitted. Selection Criteria can only be activated if one or more Select Statements are specified and not all are excluded. An asterisk \* indicates they are active.
- D Deactivate the Selection Criteria. Any you have specified here will not be used.

**Use External Sort**

Select / to use an external sort utility to process summary records. This is the default. It generates the **EXTERNAL(ddname)** operand. This provides the DDname of the work data set used by the external sort utility. CICS PA assigns an External Work File from a pool of External Work Files with default DDnames in the format **CPAXWnnn** where nnn is a sequential number **001-999** to uniquely identify the work file.

An external sort should be used when processing large volumes of data.

If not selected, an internal sort is used.

**Transaction Profiling report compares two Performance Summary reports**

It is useful to think of the Transaction Profiling report as a comparison of two Performance Summary reports: one for the report data and one for the baseline data.

The report data is specified by the PROFILING(REPORT(...), FIELDS(...)) operand. The baseline data is specified by the PROFILING(BASELINE(...), FIELDS(...)) operand.

Each Performance Summary report uses a SUMMARY Report Form (FIELDS operand) to:

1. Group and sort input records by key field values



2. Summarize the values of non-key fields in each group of records (for example, as an average or a total)

The Transaction Profiling report consolidates the two sets of summarized data by finding a row of summarized baseline data whose key fields match a row of summarized report data. The Transaction Profiling report then compares the values of the non-key fields in the two matched rows. Rows of summarized baseline data whose key field values do not match any rows of summarized report data are discarded.

When designing a Transaction Profiling report, you might find it useful to first run the two Performance Summary reports. This enables you to review the two sets of summarized data separately, before using the Transaction Profiling report to consolidate and compare them. Note that the Report Form and the Baseline Form both affect how the Transaction Profiling report summarizes baseline data. The Transaction Profiling report summarizes baseline data according to the order of the fields in the Report Form, and using only those fields that occur in both the Baseline Form and the Report Form.

### Requesting a Transaction Profiling report outside a Report Set

To request a Transaction Profiling report independently of any Report Set, select option 7 Profiling on the CICS PA Primary Option Menu. This displays the Transaction Profiling Menu:

```
File Options Help
-----
Transaction Profiling Menu
Command ==>
Select an option then press Enter.
1 1. SMF data against SMF Baseline
  2. SMF data against HDB Baseline
  3. HDB data against HDB Baseline
Repository . . . . 'CICSPA.XYX.REPOSTRY' +
```

Figure 94. Transaction Profiling Menu

This menu offers several combinations for the source of the report data and the baseline data that you want to compare:

- Option 2 SMF data against HDB Baseline offers the same combination as a Transaction Profiling report in a Report Set: it compares report data from SMF files with baseline data from a List or Summary Performance HDB.
- Options 1 and 3, SMF data against SMF Baseline and HDB data against HDB Baseline, are not available in a Report Set.

Log streams are supported in the Report System Selection but not the Baseline System Selection fields.

For the combinations that involve HDBs, this menu allows you to specify the Repository that contains the HDBs you want to use.

Select the combination that you want. CICS PA displays the Run Transaction Profiling Report panel for that combination of report data and baseline data sources. The following figure shows the Run Transaction Profiling Report panel for option 1 SMF data against SMF Baseline.

File Systems Options Help			
-----			
Run Transaction Profiling Report			
Command ==> _____			
Specify profiling data sources and options, then SUBmit to run.			
Report System Selection:		Report Interval _____	
APPLID . . . _____	+	YYYY/MM/DD	HH:MM:SS.TH
Image . . . _____	+	From _____	_____
Group . . . _____	+	To _____	_____
Baseline System Selection:		Baseline Interval _____	
APPLID . . . _____	+	YYYY/MM/DD	HH:MM:SS.TH
Image . . . _____	+	From _____	_____
Group . . . _____	+	To _____	_____
Report Format:		Baseline Form . . . _____	
Report Form . . . _____	+		
Title . . . _____			
-----			
Summary Options:		Reporting Options:	
Time Interval . . . 00:01:00 (hh:mm:ss)		Lines . . . . /	Report / Baseline
Totals Level . . . 8 (blank or 0-8)		/	Delta / Change
Selection Criteria:		Threshold . . . % Above	
_ Performance		_ % Below Baseline	
		Exclude . . . Within threshold	
		/ Blank lines	
Execution Option:		Missing SMF Files Option:	
/ Use External Sort		2 1. Issue error message	
		2. Leave DSN unresolved in JCL	
Enter "/" to select option			
/ Edit JCL before submit			

Figure 95. Transaction Profiling Report (SMF data against SMF baseline)

This panel is similar to the panel for requesting a Transaction Profiling report in a Report Set, shown in Figure 93 on page 187, except that you specify all of the details for the report on a single panel (there are no Report Set global options, such as Report Interval, to inherit), and rather than specifying the name of an HDB containing the baseline data, you specify system selection details to identify the appropriate SMF files. On the Run Transaction Profiling panel for option 3 HDB data against HDB Baseline, you specify HDB names for both the report data and the baseline data.

For details on specifying the options for the Transaction Profiling report, see "Transaction Profiling report" on page 185. To request the report, enter SUB on the command line.

## Cross-System Work report

The Cross-System Work report accepts performance class data from a single or multiple CICS systems and correlates the data by network unit-of-work.

The report default is to print only the CMF performance class records that are contained in a unique network unit-of-work that includes multiple performance records. Note that the Cross-System Work report will also include multiple performance class records from a single system.

To request the report, enter line action **S** against the **Cross-System Work** Performance Report on the Report Set panel. If reports of this type have been previously specified, the list of Cross-System Work Reports is displayed. Otherwise, the Cross-System Work Report panel is displayed for you to define

your first report of this type.

FileFilterEditSystemsOptionsHelp

SAMPLE - Cross-System Work Reports

Row 1 from 2

Command ==> Scroll ==>

----- System Selection -----

	Exc	APPLID +	Image +	Group +	Output	Form +	Criteria Record	UOW
/				MROPROD	CROS0001		YES	NO
-				MROTEST	CROS0002		NO	NO

\*\*\*\*\* End of list \*\*\*\*\*

Figure 96. Cross-System Work Reports

This panel displays the list of Cross-System Work Reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options and line actions are the same as those for the Performance List Reports panel. See “Performance List report” on page 170.

To display the Cross-System Work Report panel, enter line action **S** against the **Cross-System Work** Performance Report on the Report Set panel, then if the list of previously specified reports is displayed, enter line action **S** against a particular report in the list.

FileSystemsOptionsHelp

SAMPLE - Cross-System Work Report

Command ==>

System Selection:

APPLID . . . +

Image . . . +

Group . . MROPROD +

Report Output:

DDname . . . . . CROS0001

Print Lines per Page . . (1-255)

Processing Options:

1 1. UOWs with more than one record

2. UOWs with a single record

3. All UOWs

Task Ordering Options:

1 1. Descending Stop time

2. Ascending Start time

Report Format:

Form . . . +

Title . .

Selection Criteria:

- Performance (Record pre-processing) \*

- Performance (Unit-of-work post-processing)

F1=Help F3=Exit F4=Prompt F7=Backward F8=Forward F10=Actions

F12=Cancel

Figure 97. Cross-System Work Report

Use this panel to specify report options, report format, and record selection criteria for the Cross-System Work report. The mandatory options are the Report Output DDname and the network unit-of-work (UOW) Processing Option. You can let the other options default.

The report options are the same as those for the Performance List Report (see “Performance List report” on page 170), except there is an additional processing option and a LIST or LISTX Report Form can be specified:

#### Processing Options

Select option **1 - UOWs with more than one record** to report only the transaction performance records whose network unit-of-work spans multiple CMF records. This is the default. This selection generates the PRINTMULTIPLE operand.

Select option **2 - UOWs with a single record** to report only the transaction performance records consisting of network units-of-work that include only a single CMF record. This selection generates the PRINTSINGLE,NOPRINTMULTIPLE operand.

Select option **3 - All UOWs** to report all the transaction performance records. This selection generates the PRINTSINGLE,PRINTMULTIPLE operand.

#### Task Ordering Options

Controls the sorting order of tasks within UOW in the List report. You can choose to order tasks by descending stop time (the default order) or ascending start time.

This option generates the operand TASKORDER(START|STOP).

#### Report Form

The name of a Report Form to be used to tailor the format and content of the report. It can be either a LIST or LISTX Form. You can type the name directly, or to select one from a list of compatible Report Forms, use **Prompt (F4)**.

CICS PA JCL generation translates the Report Form specification into the FIELDS operand of the LISTX command. This produces a Cross-System Work Extended report like that shown in Figure 202 on page 426.

#### Performance Selection Criteria

You can specify Selection Criteria to filter the CMF records on time period and field values to restrict reporting to the data that is of interest to you. For the Cross-System Work report, there are two levels of filtering available:

- **Record pre-processing.** CICS PA JCL generation translates Selection Criteria to the SELECT(PERFORMANCE operand).  
If you specify a Report Form that also has Selection Criteria specified, CICS PA JCL generation translates the Form's Selection Criteria to the SELECT2(PERFORMANCE operand. If both the report and the Form specify Selection Criteria, then a record must pass selection by both specifications to be included in the report.
- **Unit-of-work post-processing.** Allows you to limit the report to specific units-of-work. This generates the SELUOW operand to provide filtering across tasks in multi-task UOWs. If one task in a UOW matches the SELUOW selection criteria, then the entire UOW is selected. For more information, see “CROSSsystem - Cross-System Work report and extract” on page 471.

CICS PA provides a default **Report Output DDname** in the format **CROSnnnn** where nnnn is **0001-9999**.

## Transaction Group report

The Transaction Group report accepts data from one or more CICS systems, correlating the data by transaction group id. The default is to print only the CMF performance class records that are contained in a transaction group that includes multiple performance records.

The Transaction Group report can be used to understand the correlation of the performance class records for the transactions that CICS runs as part of the same incoming work request (for example, the CWXN and CWBA transactions for CICS Web support requests).

To request the report, enter line action **S** against the **Transaction Group Performance Report** on the Report Set panel. If reports of this type have been previously specified, the list of Transaction Group Reports is displayed. Otherwise, the Transaction Group Report panel is displayed for you to define your first report of this type.

```
File Filter Edit Systems Options Help
-----
SAMPLE - Transaction Group Reports          Row 1 from 4
Command ==> _____ Scroll ==> _____

Select to edit report options.

---- System Selection ----
/  Exc  APPLID + Image + Group + Output Selection
-      CICSP001          TRGP0001 YES
-      DEVT  MVS1          TRGP0002 NO
-      CICST001          TRGP0003 YES
-      *                RSYSGRP1 TRGP0004 NO
***** End of list *****
```

Figure 98. Transaction Group Reports

This panel displays the list of Transaction Group Reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options and line actions are the same as those for the Performance List Reports panel, except there is no Report Form. See “Performance List report” on page 170.

To display the Transaction Group Report panel, enter line action **S** against the **Transaction Group Performance Report** on the Report Set panel, then if the list of previously specified reports is displayed, enter line action **S** against a particular report in the list.

File Systems Options Help	
-----	
SAMPLE - Transaction Group Report	
Command ==> _____	
System Selection:	Report Output:
APPLID . . <b>CICSP001</b> +	DDname . . . . . <b>TRGP0001</b>
Image . . _____ +	Print Lines per Page . . ____ (1-255)
Group . . _____ +	
Processing Options:	
1 1. Groups of more than one record	
2 2. Groups of a single record	
3 3. All Groups	
Report Format:	
Title . . _____	
-----	
Selection Criteria:	
_ Performance *	
F1=Help F3=Exit F4=Prompt F7=Backward F8=Forward F10=Actions	
F12=Cancel	

Figure 99. Transaction Group Report

Use this panel to specify report options and record selection criteria for the Transaction Group report. The report format is fixed. The mandatory options are the Report Output DDname and the Transaction Group Processing Option. You can let the other options default.

The report options are the same as those for the Performance List Report (see “Performance List report” on page 170), except there is no Report Form and there is an additional processing option:

### Processing Options

Select option **1 - Groups of more than one record** to report only the transaction performance records whose Transaction Group ID spans multiple CMF records. This is the default. This selection generates the PRINTMULTIPLE operand.

Select option **2 - Groups of a single record** to report only the transaction performance records consisting of a Transaction Group ID that includes only a single CMF record. This selection generates the PRINTSINGLE,NOPRINTMULTIPLE operand.

Select option **3 - All Groups** to report all the transaction performance records. This generates the PRINTSINGLE,PRINTMULTIPLE operand.

CICS PA provides a default **Report Output DDname** in the format **TRGPnnnn** where nnnn is **0001-9999**.

## BTS report

The BTS report accepts data from one or more CICS systems, correlating the data by CICS BTS process ID (root activity ID).

To request the report, enter line action **S** against the **BTS** Performance Report on the Report Set panel. If reports of this type have been previously specified, the list of BTS Reports is displayed. Otherwise, the BTS Report panel is displayed for you to define your first report of this type.

```

File  Filter  Edit  Systems  Options  Help
-----
                                SAMPLE - BTS Reports                                Row 1 from 4
Command ==> _____ Scroll ==> _____

      ---- System Selection ----
/  Exc  APPLID +  Image +  Group +  Output  Selection
$      CICSP001      _____      CBTS0001      YES
-      DEVT _____      MVS1 _____      CBTS0002      NO
-      CICST001      _____      CBTS0003      YES
-      * _____      _____      RSYSGRP1      CBTS0004      NO
***** End of list *****

```

Figure 100. BTS Reports

This panel displays the list of BTS (CICS Business Transaction Services) Reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options and line actions are the same as those for the Performance List Reports panel, except there is no Report Form. See “Performance List report” on page 170.

To display the BTS Report panel, enter line action **S** against the **BTS** Performance Report on the Report Set panel, then if the list of previously specified reports is displayed, enter line action **S** against a particular report in the list.

```

File  Systems  Options  Help
-----
                                SAMPLE - BTS Report                                Row 1 from 4
Command ==> _____

System Selection:
APPLID . . CICSP001 +
Image . . _____ +
Group . . _____ +

Report Output:
DDname . . . . . CBTS0001
Print Lines per Page . . ____ (1-255)

Report Format:
Title . . _____

Selection Criteria:
_ Performance *

F1=Help      F3=Exit      F4=Prompt      F7=Backward  F8=Forward  F10=Actions
F12=Cancel

```

Figure 101. BTS Report

Use this panel to specify report options and record selection criteria for the BTS report. The report format is fixed. The only mandatory option is the DDname for the report output. You can let the other options default.

The report options are the same as those for the Performance List Report (see “Performance List report” on page 170), except there is no Report Form.

CICS PA provides a default **Report Output DDname** in the format **CBTSnnnn** where nnnn is **0001-9999**.

## Workload Activity report

The Workload Activity report provides a transaction response time analysis by MVS Workload Manager (WLM) service and report class. This can be used in

conjunction with the z/OS Resource Measurement Facility (RMF) workload activity reports to understand from a CICS perspective how well your CICS transactions are meeting their response time goals.

The report processes all CMF transaction performance class records for network units-of-work containing multiple performance records as well as those with only a single performance record.

Two reports can be requested:

1. **Workload Activity List.** This is a cross-system report that correlates CMF performance class data from single or multiple CICS systems for each network unit-of-work. Importantly, this report ties MRO and function shipping tasks to their originating task so that their impact on response time can be assessed.
2. **Workload Activity Summary.** This report summarizes response time by WLM service and report classes.

To request the report, enter line action **S** against the **Workload Activity Performance Report** on the Report Set panel. If reports of this type have been previously specified, the list of Workload Activity Reports is displayed. Otherwiese, the Workload Activity Report panel is displayed for you to define your first report of this type.

File Filter Edit Systems Options Help

Command ==> \_\_\_\_\_
Row 1 from 4  
Scroll ==> \_\_\_\_\_

---- System Selection ----

/ Exc	APPLID +	Image +	Group +	Output	Selection Criteria
---	CICSP001	_____	_____	WKLD0001	YES
---	DEVT	MVS1	_____	WKLD0002	NO
---	CICST001	_____	_____	WKLD0003	YES
---	*	_____	RSYSGRP1	WKLD0004	NO

\*\*\*\*\* End of list \*\*\*\*\*

Selection Criteria

*Figure 102. Workload Activity Reports*

This panel displays the list of Workload Activity Reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options and line actions are the same as those for the Performance List Reports panel, except there is no Report Form. See “Performance List report” on page 170.

To display the Workload Activity Report panel, enter line action **S** against the **Workload Activity Performance Report** on the Report Set panel, then if the list of previously specified reports is displayed, enter line action **S** against a particular report in the list.



```

File Systems Options Help
-----
                        SAMPLE - Workload Activity Report
Command ==> _____

System Selection:                      Report Output:
APPLID . . CICSP001 +                  DDname . . . . . WKLD0001
Image . . _____ +                  Print Lines per Page . . ____ (1-255)
Group . . _____ +

Reports Required:                      List
/ Summary                               1 1. Descending Stop Time
      Include EXE Y tasks                2. Ascending Start Time

Peak Percentile . . 90 (50-100%)

Report Format:
Title . . _____

Selection Criteria:
_ Performance *

F1=Help      F3=Exit      F4=Prompt      F7=Backward  F8=Forward  F10=Actions
F12=Cancel

```

Figure 103. Workload Activity Report

Use this panel to specify report options and record selection criteria for the Workload Activity report. The report format is fixed. The only mandatory option is the Report Output DDname. You can let the other options default.

The report options are the same as those for the Performance List Report (see “Performance List report” on page 170), except there is no Report Form, you can select the reports you require, and there is an additional processing option:

### Reports Required

Enter / to select the reports you want produced.

- Select **List** to request the Workload Manager Activity List report, a detailed listing of transaction activity in begin-to-end (BTE) phases, completed execution phases (EXE Y), and incomplete execution phases (EXE N). This report requires an external sort.

You can choose how tasks are sorted within UOW in the List report: by descending stop time (the default order) or ascending start time. This option generates the operand TASKORDER(START|STOP).

- Select **Summary** to request the Workload Manager Activity Summary report.

Select **Include EXE Y tasks** to summarize transactions in both completed execution phases (EXE Y) and begin-to-end (BTE) phases, otherwise the report contains BTE transactions only. EXE N transactions cannot be summarized. The Summary report with both BTE and EXE transactions requires an external sort.

The default is the Summary report with BTE transactions only. It is a very quick report as no external sort is required.

### Peak Percentile

This option applies to the Workload Activity Summary report. Specify a number between 50 and 100 to report the response time within which that percentage of transactions completed. Computations assume a normal distribution. For example, 95 shows the response time that 95% of transactions completed within. The default is **90**.

CICS PA JCL generation translates this value to the PEAK(percentile) operand.

CICS PA provides a default **Report Output DDname** in the format **WKLDnnnn** where nnnn is **0001-9999**.

## Transaction Tracking List report

The Transaction Tracking List report provides a view of the flow of related transactions through the various CICS systems. This report allows you to analyze transaction performance from the perspective of transaction flow. Each section of the report describes an originating transaction together with its subordinate group transactions.

To request the report, enter line action **S** against the **Transaction Tracking List Performance Report** on the Report Set panel. If reports of this type have been previously specified, the list of Transaction Tracking List reports is displayed. Otherwise, the Transaction Tracking List panel is displayed for you to define your first report of this type.

File Filter Edit Systems Options Help									
SAMPLE - Transaction Tracking List						Row 1 from 4			
Command ==> _____						Scroll ==> _____			
						Criteria			
---- System Selection ----						Origin	Group	Record	Group
/	Exc	APPLID +	Image +	Group +	Output	Form +	Form +	-----	-----
-		CICSP001	_____	_____	TTLS0001	_____	_____	YES	YES
-		DEVT	MVS2	_____	TTLS0002	TLFM3	TLGFM3	NO	YES
-		CICST001	_____	_____	TTLS0003	_____	_____	NO	YES
-		CICSP001	_____	DRDC01	TTLS0004	_____	_____	YES	NO
***** Bottom of data *****									

Figure 104. Transaction Tracking List Reports

This panel displays the list of Transaction Tracking List reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The line actions are the same as those for the Performance List Reports panel. See "Performance List report" on page 170.

To display the Transaction Tracking List panel, enter line action **S** against the **Transaction Tracking List Performance Report** on the Report Set panel, then if the list of previously specified reports is displayed, enter line action **S** against a particular report in the list.

File Systems Options Help	
-----	
SAMPLE - Transaction Tracking List Report	
Command ==> _____	
System Selection:	Report Output:
APPLID . . CICS001 +	DDname . . . . . TTLS0001
Image . . _____ +	Print Lines per Page . . ____ (1-255)
Group . . _____ +	
Report Focus:	Processing Options:
Origin Form . . . _____ +	1 1. Origins with multiple records
Group Form . . . _____ +	2. Origins with a single record
	3. All Origins
Report Format:	
Title . . _____	
-----	
Selection Criteria:	
- Performance (Record pre-processing) *	
- Performance (Groups post-processing) *	
F1=Help F3=Exit F4=Prompt F7=Backward F8=Forward F10=Actions	
F12=Cancel	

Figure 105. Transaction Tracking List Report

Use this panel to specify report options and record selection criteria for the Transaction Tracking List report. The mandatory options are the Report Output DDname and the Transaction Tracking List Processing Option. You can let the other options default.

The report options are similar to those for the Performance List Report (see “Performance List report” on page 170), except that:

- There is no option to specify an Alert definition.
- Separate Report Forms can be specified for the Origin and Group sections of the report. The report must use a Report Form of a compatible type (that is, LIST).
- There is an additional processing option:

#### Processing Options

Select option **1 - Origins with multiple records** to report only on Origin transactions that have Group transactions. This is the default. This selection generates the PRINTMULTIPLE,NOPRINTSINGLE operand.

Select option **2 - Origins with a single record** to report only on Origin transactions that do not have Group transactions. This selection generates the NOPRINTMULTIPLE,PRINTSINGLE operand.

Select option **3 - All Origins** to report all transactions. This generates the PRINTMULTIPLE,PRINTSINGLE operand.

- Selection criteria can also be applied as a post-processing step. This is a second level of filtering that determines which Groups are to be included in the report. Only when all of the records in the Group fail this set of selection criteria will the whole group and associated Origin record be excluded from the report.

CICS PA provides a default **Report Output DDname** in the format **TTLSnnnn** where nnnn is **0001-9999**.

## Transaction Tracking Summary report

The Transaction Tracking Summary report provides an overview of the flow of related transactions through the various CICS systems. This report allows you to analyze transaction performance from the perspective of transaction flow. For each

originating transaction there is a block showing a summary line for all transactions that were associated directly or indirectly with the originating transaction. Grouping of transactions is based on a tracking key, which includes fields that identify the originating transaction, fields that identify the 'previous hop' transaction, and 1-4 user-specified key fields, which are used to display the actual summary data.

To request the report, enter line action **S** against the **Transaction Tracking Summary** Performance Report on the Report Set panel. If reports of this type have been previously specified, the list of Transaction Tracking Summary reports is displayed. Otherwise, the Transaction Tracking Summary panel is displayed for you to define your first report of this type.

```

File  Filter  Edit  Systems  Options  Help
-----
                SAMPLE - Transaction Tracking Summary                Row 1 from 2
Command ==> _____ Scroll ==> _____

                                Criteria
                                Record  Group
-----
/  Exc  ---- System Selection ----  Output  Form +  -----
-      CICSP001 MVS1 _____  TTSU0001  TSFM2  YES   YES
-      CICST001 _____  TTSU0002  TSFM5  NO    NO
***** Bottom of data *****

```

Figure 106. Transaction Tracking Summary Reports

This panel displays the list of Transaction Tracking Summary reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The line actions are the same as those for the Performance List Reports panel. See "Performance List report" on page 170. The options are also similar except that there is no option to specify an Alert definition. The report must use a Report Form of a compatible type (that is, SUMMARY).

To display the Transaction Tracking Summary Report panel, enter line action **S** against the **Transaction Tracking Summary** Performance Report on the Report Set panel, then if the list of previously specified reports is displayed, enter line action **S** against a particular report in the list.

File Systems Options Help			
-----			
SAMPLE - Transaction Tracking Summary Report			
Command ==> _____			
System Selection:		Report Output:	
APPLID . .	CICSP001 +	DDname . . . . .	TTSU0001
Image . .	MVS1_____ +	Print Lines per Page . .	____ (1-255)
Group . .	_____ +		
Tracking Key:			
PH Task 1	APPLID	+ 2	TRAN +
Task 1	_____	+ 2	_____ + 3 _____ + 4 _____ +
Report Focus:		Processing Options:	
Form . . . . .	_____ +	1	1. Origins with multiple records
		2	2. Origins with a single record
		3	3. All Origins
Report Format:			
Title . .	_____		
Selection Criteria:			
-	Performance (Record pre-processing)	*	
-	Performance (Groups post-processing)	*	
F1=Help	F3=Exit	F4=Prompt	F7=Backward F8=Forward F10=Actions
F12=Cancel			

Figure 107. Transaction Tracking Summary Report

Use this panel to specify report options and record selection criteria for the Transaction Tracking Summary report. The mandatory options are the Report Output DDname and the Transaction Tracking Summary Processing Option. You can let the other options default.

The report options are similar to those for the Performance List Report (see "Performance List report" on page 170), except for the following additional options:

### Tracking Key

Grouping of transactions in the report is based on a tracking key, which comprises three parts:

1. Fields that identify the originating transaction.

In the PH Task 1 and 2 fields, specify the originating transaction ID fields. You can select APPLID, which specifies the originating CICS APPLID (OAPPLID), or TRAN, which specifies the originating transaction (OTRAN), or both. The default key is APPLID + TRAN.

2. Fields that identify each 'previous hop' transaction related to the originating transaction.

The previous hop identification fields are automatically paired in the report with the corresponding originating transaction fields. That is, if TRAN is selected then PHTRAN will be included and if APPLID is selected then PHAPPLID will be included.

3. 1-4 user-specified key fields.

In the Task 1 to 4 fields, select up to four CMF fields, which are used to display the actual summary data for each originating transaction and each related (previous hop) transaction. Use Prompt (F4) to select from a list of available fields.

### Processing Options

Select option **1 - Origins with multiple records** to report only on Origin transactions that have Group transactions. This is the default. This selection generates the PRINTMULTIPLE,NOPRINTSINGLE operand.

Select option **2 - Origins with a single record** to report only on Origin transactions that do not have a Group transaction. This selection generates the NOPRINTMULTIPLE,PRINTSINGLE operand.

Select option **3 - All Origins** to report all transactions. This generates the PRINTMULTIPLE,PRINTSINGLE operand.

### Selection Criteria

Selection criteria can also be applied as a post-processing step. This is a second level of filtering that determines which Groups are to be included in the report. Only when all of the records in the Group fail this set of selection criteria will the whole group and associated Origin record be excluded from the report.

When a report form is specified for this report, the following rules apply.

1. The key fields in the form are replaced by the tracking key.

**Note:** This can result in the report page width different to that calculated for the Form.

2. An error will be generated if PHCOUNT is a field in the Form as it is part of the Tracking key.
3. Fields with function Severity (SEV) are ignored and are not included in the report.

CICS PA provides a default **Report Output DDname** in the format **TTSUnnnn** where nnnn is **0001-9999**.

---

## Exception reports

The Exception Reports process CMF exception class data to produce tabular-style reports.

### Exception List report

The Exception List report provides two types of information:

- The cause of the exception condition
- The information necessary to relate this record to the performance class record on the Performance List report.

To request the report, enter line action **S** against the **List** Exception Report on the Report Set panel. If reports of this type have been previously specified, the list of Exception List Reports is displayed. Otherwise, the Exception List Report panel is displayed for you to define your first report of this type.

```

File  Filter  Edit  Systems  Options  Help
-----
                        SAMPLE - Exception List Reports                Row 1 from 4
Command ==> _____ Scroll ==> _____

      ---- System Selection ----
/  Exc  APPLID + Image + Group + Output      Selection
      CICSP001          XLST0001      YES
-      DEVT   MVS1          XLST0002      NO
-      CICST001          XLST0003      YES
-      *              RSYSGRP1  XLST0004      NO
***** End of list *****

```

Figure 108. Exception List Reports

This panel displays the list of Exception List Reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options and line actions are the same as those for the Performance List Reports panel, except there is no Report Form. See “Performance List report” on page 170.

To display the Exception List Report panel, enter line action **S** against the **List** Exception Report on the Report Set panel, then if the list of previously specified reports is displayed, enter line action **S** against a particular report in the list.

```

File  Systems  Options  Help
-----
                        SAMPLE - Exception List Report
Command ==> _____

System Selection:
APPLID . . CICSP001 +
Image . . _____ +
Group . . _____ +

Report Output:
DDname . . . . . XLST0001
Print Lines per Page . . ____ (1-255)

Report Format:
Title . . _____

Selection Criteria:
_ Exception *

F1=Help      F3=Exit      F4=Prompt      F7=Backward  F8=Forward  F10=Actions
F12=Cancel

```

Figure 109. Exception List Report

Use this panel to specify report options and record selection criteria for the Exception List report. The report format is fixed. The only mandatory option is the DDname for the report output. You can let the other options default.

The options are the same as those for the Performance List Report (see “Performance List report” on page 170), except there is no Report Form.

CICS PA provides a default **Report Output DDname** in the format **XLSTnnnn** where nnnn is **0001-9999**.

Whereas the Selection Criteria for Performance Reports apply to CMF performance class records, those for Exception Reports apply to CMF exception class records.

## Exception Selection Criteria

Selection Criteria allow you to filter the CMF exception records on time periods and field values to restrict reporting to the data that is of interest to you.

### Line Actions:

- / Display the menu of line actions.
- S Display the subpanel where Selection Criteria can be specified for this report. For details, see “Specifying Selection Criteria” on page 156.
- A Activate the Selection Criteria so they are generated for this report when the Report Set is submitted. Selection Criteria can only be activated if one or more Select Statements are specified and not all are excluded. An asterisk \* indicates they are active.
- D Deactivate the Selection Criteria. Any you have specified here will not be used.

## Exception Summary report

The Exception Summary report summarizes the exception records collected by the CICS Monitoring Facility (CMF). Records are summarized by transaction identifier code. The report provides the total number of exceptions for each transaction, according to the following:

- For auxiliary temporary storage VSAM buffer and string wait conditions
- For coupling facility data table pool wait conditions
- For VSAM LSRPOOL buffer and string wait conditions
- For VSAM file string wait conditions
- For temporary storage wait conditions
- For main storage wait conditions

To request the report, enter line action **S** against the **Summary** Exception Report on the Report Set panel. If reports of this type have been previously specified, the list of Exception Summary Reports is displayed. Otherwise, the Exception Summary Report panel is displayed for you to define your first report of this type.

```

File Filter Edit Systems Options Help
-----
                SAMPLE - Exception Summary Reports                Row 1 from 4
Command ==> _____ Scroll ==> _____

    ---- System Selection ----
/  Exc  APPLID +  Image +  Group +  Output  Selection
-       CICSP001  _____  XSUM0001  YES
-       DEVT_____  MVS1_____  XSUM0002  NO
-       CICST001  _____  XSUM0003  YES
-       * _____  RSYSGRP1  XSUM0004  NO
***** End of list *****

```

Figure 110. Exception Summary Reports

This panel displays the list of Exception Summary Reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options and line actions are the same as those for the Performance List Reports panel. See “Performance List report” on page 170.



To display the Exception Summary Report panel, enter line action **S** against the **Summary** Exception Report on the Report Set panel, then if the list of previously specified reports is displayed, enter line action **S** against a particular report in the list.

The screenshot shows a terminal window titled "SAMPLE - Exception Summary Report". At the top is a menu bar with "File Systems Options Help". Below it is a dashed line. The main area contains several sections: "Command ==>" followed by a blank line; "System Selection:" with fields for "APPLID" (set to "CICSP001"), "Image", and "Group", each followed by a "+" sign; "Report Output:" with fields for "DDname" (set to "XSUM0001") and "Print Lines per Page" (set to "\_\_\_ (1-255)"); "Report Format:" with a "Title" field; "Selection Criteria:" with a list containing "Exception \*"; and a footer with function key definitions: "F1=Help", "F3=Exit", "F4=Prompt", "F7=Backward", "F8=Forward", "F10=Actions", and "F12=Cancel".

Figure 111. Exception Summary Report

Use this panel to specify report options and record selection criteria for the Exception Summary report. The report format is fixed. The only mandatory option is the DDname for the report output. You can let the other options default.

The options are the same as those for the Performance List Report (see “Performance List report” on page 170), except there is no Report Form.

Whereas the Selection Criteria for Performance Reports apply to CMF performance class records, those for Exception Reports apply to CMF exception class records.

CICS PA provides a default **Report Output DDname** in the format **XSUMnnnn** where nnnn is **0001-9999**.

## Transaction Resource Usage reports

The Transaction Resource Usage reports are produced from CMF performance class and transaction resource class data. The reports in this category are:

- “File Usage Summary report”
- “Temporary Storage Usage Summary report” on page 214
- “Distributed Program Link Usage Summary report” on page 217
- “Transaction Resource Usage List report” on page 219

### File Usage Summary report

The File Usage Summary report provides a detailed analysis of CMF transaction resource class data for Files.

Two reports can be requested:

1. **Transaction File Usage Summary.** This report summarizes File usage by Transaction ID. For each Transaction ID, it gives Transaction Identification and File Control statistics followed by a breakdown of File usage for each File used by the Transaction.

2. **File Usage Summary.** This report summarizes File activity. For each File, it gives a breakdown of File usage by Transaction ID.

To request the report, enter line action **S** against the **File Usage Summary** Transaction Resource Usage Report on the Report Set panel. If reports of this type have been previously specified, the list of File Usage Summary Reports is displayed. Otherwise, the File Usage Summary Report panel is displayed for you to define your first report of this type.

```

File  Filter  Edit  Systems  Options  Help
-----
                        SAMPLE - File Usage Summary Reports                Row 1 from 2
Command ==> _____ Scroll ==> _____

      ---- System Selection ----
/  Exc  APPLID + Image + Group + Output  Selection
S      CICSP001          FILE0001      NO
      DEVT_____ MVS1_____ FILE0002      NO
***** End of list *****

```

Figure 112. File Usage Summary Reports

This panel displays the list of File Usage Summary Reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options and line actions are the same as those for the Performance List Reports panel, except there is no Report Form. See “Performance List report” on page 170.

Enter line action **S** to select a report from the list.

```

File  Systems  Options  Help
-----
                        SAMPLE - File Usage Summary Report
Command ==> _____

System Selection:                                Report Output:
APPLID . . CICSP001 +                            DDname . . . . . FILE0001
Image   . . _____ +                          Print Lines per Page . . ____ (1-255)
Group   . . _____ +

Summary Reports Required:
/ Transaction File Usage
/ File Usage
/ Break down by Transaction ID
/ Include Transaction Totals

Report Format:
Title . . _____

Selection Criteria:
_ Performance

F1=Help      F3=Exit      F4=Prompt      F7=Backward  F8=Forward  F10=Actions
F12=Cancel

```

Figure 113. File Usage Summary Report

Use this panel to specify report options and record selection criteria for the File Usage Summary report. The report format is fixed. The only mandatory option is the Report Output DDname. You can let the other options default.

The report options are the same as those for the Performance List Report (see “Performance List report” on page 170), except there is no Report Form, and you can select the reports you require.

The default **Report Output DDname** has the format **FILEnnnn** where nnnn is 0001-9999.

### Summary Reports Required

Enter / to select the required reports.

#### Transaction File Usage

This requests the Transaction File Usage Summary report, a summary of File activity by Transaction ID. For each Transaction ID, Transaction and File Control statistics are followed by File usage statistics for each File used by the Transaction.

This option generates the TRANSUMMARY(FILE) operand.

#### File Usage

This requests the File Usage Summary report, a summary of File activity by File.

- Select **Break down by Transaction ID** to show File usage statistics by Transaction ID for each File.
- Select **Include Transaction Totals** to show totals for each File.

This option generates the FILESUMMARY(BYTRAN,TOTAL) operand.

### Performance Selection Criteria

Performance Selection Criteria apply to both transaction resource class data and performance class data. You can request a report from all available records, or you can provide Selection Criteria to request a report from only the records that meet your specific requirements.

Transaction resource class records contain Task Identification and File Entry information. For more information on the format of transaction resource class records, see the *CICS Performance Analyzer for z/OS Report Reference*.

For the selection of transaction resource class records, only some fields in the Selection Criteria are applicable. All other fields are ignored.

The Selection Criteria fields applicable to Task Identification are:

ACTIVE  
FCTY  
LUNAME  
NETUOWSX  
PROGRAM  
RSYSID  
START  
STOP  
TASKNO  
TERM  
TRAN  
USERID  
OAPPLID  
OTRAN  
OUSERID  
OTCPSRVC  
OFCTY

The Selection Criteria fields applicable to File Entries (see note 1) are:

FILENAME (see note 2)  
FCAMCT (Count)  
FCADD (Count only, see note 3)  
FCBROWSE (Count only, see note 3)  
FCDELETE (Count only, see note 3)  
FCGET (Count only, see note 3)  
FCPUT (Count only, see note 3)  
FCTOTAL (Count only, see note 3)  
CFDTPWAIT (Time and Count)  
RLSWAIT (Time and Count)

**Note:**

1. Selection Criteria for File Entries can affect Task Identification selection. If all File entries for a task are excluded, then the task is also excluded.
2. FILENAME is a special field that applies only to transaction resource class data. It is ignored when processing performance class data.
3. Selection Criteria only supports the checking of the Count component of File request fields. The Time component cannot be checked. These fields are common to both performance class (Count) and transaction resource class (Clock - COUNT and TIME), but have differing data types. Since the performance fields are Count (not Clock) fields, only the Count component is supported by Selection Criteria.

## Temporary Storage Usage Summary report

The Temporary Storage Usage Summary report provides a detailed analysis of CMF transaction resource class data for temporary storage queues.

Two reports can be requested:

1. **Transaction Temporary Storage Usage Summary.** This report summarizes Temporary Storage usage by Transaction ID. For each Transaction ID, it gives Transaction Identification and Temporary Storage Control statistics followed by a breakdown of Temporary Storage usage for each Temporary Storage Queue used by the Transaction.
2. **Temporary Storage Usage Summary.** This report summarizes Temporary Storage activity. For each Temporary Storage Queue, it gives a breakdown of Temporary Storage usage by Transaction ID.

To request the report, enter line action **S** against the **Temporary Storage Usage Summary** Transaction Resource Usage Report on the Report Set panel. If reports of this type have been previously specified, the list of Temporary Storage Usage Summary Reports is displayed. Otherwise, the Temporary Storage Usage Summary Report panel is displayed for you to define your first report of this type.

```

File  Filter  Edit  Systems  Options  Help
-----
SAMPLE - Temporary Storage Summary Reports          Row 1 from 2
Command ==> _____ Scroll ==> _____

      ---- System Selection ----
/  Exc  APPLID +  Image +  Group +  Output  Selection
S      CICSP001  _____  _____  TEMP0001  Criteria
      DEVT _____  MVS1 _____  TEMP0002  NO
***** End of list *****

```

Figure 114. Temporary Storage Usage Summary Reports

This panel displays the list of Temporary Storage Usage Summary Reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options and line actions are the same as those for the Performance List Reports panel, except there is no Report Form. See “Performance List report” on page 170.

Enter line action **S** to select a report from the list.

```

File  Systems  Options  Help
-----
SAMPLE - Temporary Storage Summary Report
Command ==> _____

System Selection:                                Report Output:
APPLID . . CICSP001 +                          DDname . . . . . TEMP0001
Image . . _____ +                          Print Lines per Page . . ____ (1-255)
Group . . _____ +

Summary Reports Required:
/ Transaction Temporary Storage Usage
/ Temporary Storage Usage
/ Break down by Transaction ID
/ Include Transaction Totals

Report Format:
Title . . _____

Selection Criteria:
_ Performance

F1=Help      F3=Exit      F4=Prompt      F7=Backward  F8=Forward  F10=Actions
F12=Cancel

```

Figure 115. Temporary Storage Usage Summary Report

Use this panel to specify report options and record selection criteria for the Temporary Storage Usage report. The report format is fixed. The only mandatory option is the Report Output DDname. You can let the other options default.

The report options are the same as those for the Performance List Report (see “Performance List report” on page 170), except there is no Report Form, and you can select the reports you require.

The default **Report Output DDname** has the format **TEMPnnnn** where nnnn is **0001-9999**.

#### Summary Reports Required

Enter / to select the required reports.

### Transaction Temporary Storage Usage

This requests the Transaction Temporary Storage Usage Summary report. This report summarizes Temporary Storage usage by Transaction ID. For each Transaction ID, it gives Transaction Identification and Temporary Storage Control statistics followed by a breakdown of Temporary Storage usage for each Temporary Storage Queue used by the Transaction.

This option generates the TRANSUMMARY(TEMPSTOR) operand.

### Temporary Storage Usage

This requests the Temporary Storage Usage Summary report. This report summarizes Temporary Storage activity, breaking down individual TSQueue usage by Transaction ID.

- Select **Break down by Transaction ID** to include individual Transaction statistics.
- Select **Include Transaction Totals** to include total Transaction statistics.

This option generates the TEMPSTORSUMMARY(BYTRAN,TOTAL) operand.

## Performance Selection Criteria

Performance Selection Criteria applies to both transaction resource class data and performance class data. You can request a report from all available records, or you can provide Selection Criteria to request a report from only the records that meet your specific requirements.

Transaction resource class records contain Task Identification and Temporary Storage Entry information. For more information on the format of transaction resource class records, see the *CICS Performance Analyzer for z/OS Report Reference*.

For the selection of transaction resource class records, only some fields in the Selection Criteria are applicable. All other fields are ignored.

The Selection Criteria fields applicable to Task Identification are:

ACTIVE  
FCTY  
LUNAME  
NETUOWSX  
PROGRAM  
RSYSID  
START  
STOP  
TASKNO  
TERM  
TRAN  
USERID  
OAPPLID  
OTRAN  
OUSERID  
OTCPSRVC  
OFCTY

The Selection Criteria fields applicable to Temporary Storage Entries (see note 1) are:

TSQNAME (see note 2)  
TSGET (Count only, see note 3)

TSPUTAUX (Count only, see note 3)  
TSPUTMCT (Count only, see note 3)  
TSTOTAL (Count only, see note 3)  
TSSHWAIT (Time and Count)  
TSWAIT (Time and Count)

**Note:**

1. Selection Criteria for Temporary Storage Entries can affect Task Identification selection. If all Temporary Storage entries for a task are excluded, then the task is also excluded.
2. TSQNAME is a special field that applies only to transaction resource class data. It is ignored when processing performance class data.
3. Selection Criteria only supports the checking of the Count component of Temporary Storage request fields. The Time component cannot be checked. These fields are common to both performance class (Count) and transaction resource class (Clock - COUNT and TIME), but have differing data types. Since the performance fields are Count (not Clock) fields, only the Count component is supported by Selection Criteria.

## Distributed Program Link Usage Summary report

The Distributed Program Link (DPL) Usage Summary report provides a detailed analysis of CMF transaction resource class data for DPLs.

Two reports can be requested:

1. **Transaction DPL Usage Summary.** This report summarizes DPL usage by Transaction ID. For each Transaction ID, it gives Transaction Identification and DPL statistics followed by a breakdown of each DPL used by the Transaction.
2. **DPL Usage Summary.** This report summarizes DPL activity. For each DPL, it gives a breakdown of DPL usage by Transaction ID.

To request the report, enter line action **S** against the **DPL Usage Summary** Transaction Resource Usage Report on the Report Set panel. If reports of this type have been previously specified, the list of DPL Usage Summary Reports is displayed. Otherwise, the DPL Usage Summary Report panel is displayed for you to define your first report of this type.

FileFilterEditSystemsOptionsHelp

SAMPLE - DPL Usage Summary Reports

Row 1 from 2

Command ==>

Scroll ==>

----

System Selection

----

Selection

Criteria

/

Exc

APPLID +

Image +

Group +

Output

Criteria

S

CICSP001

DPLS0001

NO

-

DEVT

MVS1

DPLS0002

NO

\*\*\*\*\*

Bottom of data

\*\*\*\*\*

Figure 116. DPL Usage Summary Reports

This panel displays the list of DPL Usage Summary Reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options and line actions are the same as those for the Performance List Reports panel, except there is no Report Form. See “Performance List report” on page 170.

Enter line action **S** to select a report from the list.

```
File Systems Options Help
-----
                        SAMPLE - DPL Usage Summary Report
Command ==> _____

Select to edit report options.

System Selection:                      Report Output:
APPLID . . CICSP001 +                 DDname . . . . . DPLS0001
Image  . . _____ +                 Print Lines per Page . . ____ (1-255)
Group  . . _____ +

Summary Reports Required:
/ Transaction DPL Usage
/ DPL Usage
/ Break down by Transaction ID
/ Include Transaction Totals

Report Format:
Title . . _____

Selection Criteria:
- Performance

F1=Help      F3=Exit      F4=Prompt      F7=Backward  F8=Forward  F10=Actions
F12=Cancel
```

Figure 117. DPL Usage Summary Report

Use this panel to specify report options and record selection criteria for the DPL Usage Summary report. The report format is fixed. The only mandatory option is the Report Output DDname. You can let the other options default.

The report options are the same as those for the Performance List Report (see “Performance List report” on page 170), except there is no Report Form, and you can select the reports you require.

The default **Report Output DDname** has the format **DPLSnnnn** where nnnn is **0001-9999**.

### Summary Reports Required

Enter / to select the required reports.

#### Transaction DPL Usage

This requests the Transaction DPL Usage Summary report. This report summarizes DPL usage by Transaction ID. For each Transaction ID, it gives Transaction Identification and DPL statistics followed by a breakdown of DPL usage for each DPL used by the Transaction.

This option generates the TRANSUMM(DPL) operand.

#### DPL Usage

This requests the DPL Usage Summary report. This report summarizes DPL activity, breaking down individual DPL usage by Transaction ID.

- Select **Break down by Transaction ID** to include individual Transaction statistics.
- Select **Include Transaction Totals** to include total Transaction statistics.



This option generates the DPLSUMM(BYTRAN,TOTAL) operand.

## Performance Selection Criteria

Performance Selection Criteria applies to both transaction resource class data and performance class data. You can request a report from all available records, or you can provide Selection Criteria to request a report from only the records that meet your specific requirements.

Transaction resource class records contain Task Identification and distributed program link (DPL) information. For more information on the format of transaction resource class records, see the *CICS Performance Analyzer for z/OS Report Reference*.

For the selection of transaction resource class records, only some fields in the Selection Criteria are applicable. All other fields are ignored.

The Selection Criteria fields applicable to Task Identification are:

ACTIVE  
FCTY  
LUNAME  
NETUOWSX  
PROGRAM  
RSYSID  
START  
STOP  
TASKNO  
TERM  
TRAN  
USERID  
OAPPLID  
OTRAN  
OUSERID  
OTCPSRVC  
OFCTY

The Selection Criteria fields applicable to DPL Entries (see note 1) are:

DPLNAME (see note 2)  
PCDPL (number of DPL requests)

### Note:

1. Selection Criteria for DPL entries can affect Task Identification selection. If all DPL entries for a task are excluded, then the task is also excluded.
2. DPLNAME is a special field that applies only to transaction resource class data. It is ignored when processing performance class data.

## Transaction Resource Usage List report

The Transaction Resource Usage List report provides a detailed list of CMF transaction resource class data. The records are reported in the sequence that they appear in the SMF file.

The report gives Transaction information together with statistics by transaction of File and Temporary Storage usage.

To request the report, enter line action **S** against the **Transaction Resource Usage List** report on the Report Set panel. If reports of this type have been previously specified, the list of Transaction Resource Usage List Reports is displayed.

Otherwise, the Transaction Resource Usage List Report panel is displayed for you to define your first report of this type.

```

File  Filter  Edit  Systems  Options  Help
-----
                        SAMPLE - Transaction Resource Usage Reports          Row 1 from 2
Command ==> _____ Scroll ==> ____

      ---- System Selection ----
/  Exc  APPLID +  Image +  Group +  Output  Selection
$      CICSP001  _____  _____  RESU0001  NO
      DEVT _____  MVS1 _____  RESU0002  NO
***** End of list *****

```

Figure 118. Transaction Resource Usage Reports

This panel displays the list of Transaction Resource Usage List Reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options and line actions are the same as those for the Performance List Reports panel, except there is no Report Form. See “Performance List report” on page 170.

Enter line action **S** to select a report from the list.

```

File  Systems  Options  Help
-----
                        SAMPLE - Transaction Resource Usage Report
Command ==> _____

System Selection:                      Report Output:
APPLID . . CICSP001 +                  DDname . . . . . RESU0001
Image . . _____ +                  Print Lines per Page . . ____ (1-255)
Group . . _____ +

Detailed List Reports Required:
/ File Usage
/ Temporary Storage
/ DPL

Report Format:
Title . . _____

Selection Criteria:
_ Performance

F1=Help      F3=Exit      F4=Prompt      F7=Backward  F8=Forward  F10=Actions
F12=Cancel

```

Figure 119. Transaction Resource Usage List Report

Use this panel to specify report options and record selection criteria for the Transaction Resource Usage List report. The report format is fixed. The only mandatory option is the Report Output DDname. You can let the other options default.

The report options are the same as those for the Performance List Report (see “Performance List report” on page 170), except there is no Report Form, and you can select the reports you require.

The default **Report Output DDname** has the format **RESUnnnn** where nnnn is 0001-9999.

## Detailed List Reports Required

Enter / to select the report.

### File Usage

The File Usage List report provides a trace of Transaction resource class records that include File information. The report consists of Transaction information from the Task Identification section, followed by one sub-section for each File used.

This option generates the TRANLIST(FILE) operand.

### Temporary Storage Usage

The Temporary Storage Usage List report provides a trace of Transaction resource class records that include TSQueue information. The report consists of Transaction information from the Task Identification section, followed by one sub-section for each TSQueue used.

This option generates the TRANLIST(TEMPSTOR) operand.

**DPL** The DPL Usage List report provides a trace of Transaction resource class records that include distributed program link (DPL) information. The report consists of Transaction information from the Task Identification section, followed by one sub-section for each DPL used.

This option generates the TRANLIST(DPL) operand.

## Performance Selection Criteria

Performance Selection Criteria applies to both transaction resource class data and performance class data. The Transaction Resource Usage List report processes only transaction resource class data and includes File Usage, Temporary Storage Usage, and Distributed Program Link (DPL) Usage statistics.

- For the Selection Criteria applicable to File Usage processing, see “Performance Selection Criteria” on page 213.
- For the Selection Criteria applicable to Temporary Storage Usage processing, see “Performance Selection Criteria” on page 216.
- For the Selection Criteria applicable to DPL Usage processing, see “Performance Selection Criteria” on page 219.

---

## Statistics reports

The Statistics reports are produced from CICS statistics stored in SMF files.

To extract CICS statistics to delimited text files for further processing by other applications, see “Statistics extract” on page 274.

You can also produce Statistics Alert reports outside of a Report Set, from CICS statistics stored in HDBs. For details, see “HDB Reporting” on page 661.

## Statistics List reports

The Statistics List report provides fully customizable batch reporting of CICS TS and CICS TG Statistics, allowing you to select the desired fields and order of the fields in List type reports.

These reports are arranged in tabular form with records from multiple intervals combined on the same page. Interval identification information columns including System Interval type and time are displayed before the interval data. This compact

format allows easy reading and comparison of multi-interval or system data. A statistics form is used to customize the reports.

Some systems can generate very large volumes of data. To restrict reporting to only data of interest, Statistics Alert definitions can be used to filter the report records. These definitions provide a very powerful form of selection criteria through their support for formulas and thresholds.

Unlike most report definition panels, this panel does not include the option to specify the report ddname. This is because the list process will write each statistics type (STID) report to its own output file and it would be impractical to specify them all in the panel. However, the List report operates similar to the Statistics Extract whereby a unique ddname is generated for each active STID. The active STIDs are identified by reading the statistics form when the JCL is generated.

**Note:** If the generated JCL is saved and the Form is subsequently modified to activate or deactivate any reports, the report processor will take the following action to handle any resulting mismatches:

- DD statements for inactive reports will be ignored.
- A DD statement will be dynamically generated for any active report in the Form that does not have one.

To request a report, enter line action **S** against the **List** report in the Statistics Report category on the Report Set panel. If reports of this type have been previously specified, the list of Statistics List Reports is displayed. Otherwise, the Statistics List Reports panel is displayed for you to define your first report of this type.

FileFilterEditSystemsOptionsHelp

FSB520RS - Statistics List ReportsRow 1 from 2  
Command ==>Scroll ==> PAGE

System Selection

/	Exc	APPLID +	Image +	Group +	Form +	Alert +
-		IYCUZC02	MV2A		SYSFM1	TBSAL1
					SASFM2	TBSAL2

\*\*\*\*\* Bottom of data \*\*\*\*\*

F1=HelpF3=ExitF4=PromptF7=BackwardF8=ForwardF10=Actions  
F12=Cancel

Figure 120. Statistics List Reports

This panel displays the list of Statistics List Reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options are:

**Exc** An asterisk \* in this field indicates that the report is excluded from report processing.

Use line action **X** to reverse the Exclude indicator.

**System Selection**

Identifies the CICS APPLIDs whose data you want to select for processing.

**Form** The name of a statistics form to be used to tailor the format and content of the report.

**Alert** A Statistics Alert definition containing the conditions used to select the records that you want to report.

The line actions available on this panel are the same as on similar Reports list panels. See “Performance List report” on page 170.

To display the Statistics List Report panel, enter line action **S** against the **List** Statistics Report on the Report Set panel, then if the list of previously specified reports is displayed, enter line action **S** against a particular report in the list.

```
File Systems Options Help
FSB520RS - Statistics List Report
Command ==>

System Selection:
APPLID . . IYCUZC02  +
Image . . MV2A      +
Group . .           +

Report Output:
Print Lines per Page . . ____ (1-255)

Report Format:
Form . . . SBSFM2    +
Title . . Daily peaks analysis

Selection Criteria:
Alert . . SBSAL1     +
Severity WARNING     +
Include Severity column
Interval Type . . / EOD / INT / USS / REQ / RRT

Repository . . : SYB.CPA520.PROTO.REPOSTRY
F1=Help      F3=Exit      F4=Prompt      F7=Backward  F8=Forward  F10=Actions
F12=Cancel
```

Figure 121. Statistics List Report

Use this panel to specify report options for the Statistics List report. The only mandatory option is the statistics form. You can let the other options default.

The options are:

### System Selection

Identifies the CICS APPLIDs whose data you want to select for processing.

You can specify any combination of APPLID, Image, or Group, but these must be defined in your System Definitions. If you do not specify System Selection here or in the Global Options, then you are prompted at run time to specify the System Selection. This will apply globally to all reports and extracts without their own System Selection. This is recommended as it allows you to run your Report Sets against any of your defined Systems. Press the **Prompt** key (F4) to select from a list of defined Systems, Images, or Groups. To modify your System Definitions, select **Systems** in the action bar.

Specify one of the following:

- A CICS APPLID. An APPLID that matches a defined System's name pattern is also allowed. For example, CICSP1 can be specified if CICSP\* is a defined system.
- An APPLID and an MVS Image. This identifies the MVS Image where your CICS system runs.

- An MVS Image. All CICS systems executing on this MVS Image is selected.
- An APPLID and Image combination plus a Group. This is useful for uniquely identifying a CICS system when there are multiple CICS systems with the same name defined.
- A Group alone. CICS PA will select all CICS APPLIDs defined to the Group. For example, for transaction grouping, or for systems that connect via IRC/MRO, ISC/APPC, or IPIC.

CICS PA uses the System Selection in JCL generation to build the APPLID(applid1,applid2,applid3,...) and INput(SMFIN001,SMFIN002,SMFIN003,...) operands, and corresponding //SMFINnnn DD statements.

System Selection can also be specified either:

- In Global Options. The report-level specification takes precedence over the global.
- At run time. The run-time System Selection overrides the Global Options and optionally the report-level specification.

#### **Print Lines per Page**

The maximum number of lines, including headings, to print on each page of the report. Valid values are from 1 to 255. The default is **60**.

The global value applies to all reports. If a value is specified on this report panel, the report value takes precedence over the global for this report only.

CICS PA JCL generation translates this field to the LINECount(nnn) operand.

**Form** The name of a statistics form to be used to tailor the format and content of the report. The statistics form specifies:

- Which statistics types (STIDs) are activated. Only STIDs that are active in the form will be reported.
- Which fields are to be reported for each STID and in what order.

**Title** Title of the report. Specify up to 128 characters of text to describe the report. CICS PA concatenates the two lines of 64 exactly as entered to make one line which prints at the top of each page of the report below the heading. The default is blank (no title).

This option generates the TITLE1('left-half') and TITLE2('right-half') operands.

#### **Selection Criteria**

Use the Selection Criteria fields to filter the records to include in the reports.

**Alert** The Alert Definition containing the conditions used to select the records that you want to report. You must have already created this Alert Definition in the currently active Repository. To select from a list of Alert Definitions in the Repository, press **Prompt** (F4). To create a new Alert Definition, return to the primary option menu, and then select option 8.5. For details, see Chapter 14, “Statistics alert reporting,” on page 355.

Using statistics alert definitions to filter statistics reports is different in some respects from how selection criteria are used with other reports. For details, see “Statistics selection criteria” on page 167.

To use a different Repository, return to the primary option menu, and then select option 0.3. If you define more than one Statistics List report in a Report Set, the reports must all refer to Alert Definitions stored in the same Repository; the JCL for a Report Set can refer to only one Repository.

CICS PA JCL generation translates this option to the STALTDEF operand.

### **Severity**

Determines the minimum threshold level to evaluate which records are to be reported.

#### **CRITICAL**

Only records with Critical alerts are reported, according to the CRITICAL threshold values specified in the Statistics Alert definition.

#### **WARNING**

Only records with Critical or Warning alerts are reported, according to the CRITICAL and WARNING threshold values specified in the Statistics Alert definition.

**INFO** Only records with Critical, Warning, or Informational alerts are reported, according to the CRITICAL, WARNING, and INFO threshold values specified in the Statistics Alert definition.

#### **ELIGIBLE**

Only records that are eligible for alert processing are reported. Eligible records are those that have field values that match the Resource values defined in the Statistics Alert definition. All eligible records are reported regardless of whether they generate an alert.

This option provides the means to filter out records that would never generate an alert because their resource values do not match resource values specified in the alert definition.

**ALL** All records are reported regardless of whether they are eligible or whether they generate an alert.

### **Include Severity column**

This option is used to insert a Sev column in the List report, showing the highest severity encountered for each record. (No other information is shown regarding the alert such as the field or alert that caused it.) This option must be selected if Severity=ALL.

### **Interval Type**

To limit the types of CICS statistics intervals that CICS PA includes in the report, enter / next to the types you are interested in:

**EOD** End-of-day

**REQ** Requested

**USS** Unsolicited

**INT** Interval

**RRT** Requested reset

Selecting none of the types is the same as selecting all types.

This option generates the TYPE operand.

## Statistics Alert reports

The Statistics Alert reports process CICS Transaction Server and CICS Transaction Gateway statistics records.

To request a report, enter line action **S** against the **Alert** Statistics Report on the Report Set panel. If reports of this type have been previously specified, the list of Statistics Alert Reports is displayed. Otherwise, the Statistics Alert Reports panel is displayed for you to define your first report of this type.

```
File  Filter  Edit  Systems  Options  Help
-----
                        SAMPLE - Statistics Alert Reports                Row 1 from 1
Command ==> _____ Scroll ==> _____

      ---- System Selection ----
/  Exc  APPLID + Image + Group +      Output      Alert +
-      CICSP001 MVS1 _____      STAL0001      IDDS _____
***** End of list *****
```

Figure 122. Statistics Alert Reports

This panel displays the list of Statistics Alert Reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options are:

**Exc** An asterisk \* in this field indicates that the report is excluded from report processing.

Use line action **X** to reverse the Exclude indicator.

### System Selection

Identifies the CICS APPLIDs whose data you want to select for processing.

You can specify any combination of APPLID, Image, or Group, but these must be defined in your System Definitions. If you do not specify System Selection here or in the Global Options, then you are prompted at run time to specify the System Selection. This will apply globally to all reports and extracts without their own System Selection. This is recommended as it allows you to run your Report Sets against any of your defined Systems. Press the **Prompt** key (F4) to select from a list of defined Systems, Images, or Groups. To modify your System Definitions, select **Systems** in the action bar.

Specify one of the following:

- A CICS APPLID. An APPLID that matches a defined System's name pattern is also allowed. For example, CICSP1 can be specified if CICSP\* is a defined system.
- An APPLID and an MVS Image. This identifies the MVS Image where your CICS system runs.
- An MVS Image. All CICS systems executing on this MVS Image is selected.
- An APPLID and Image combination plus a Group. This is useful for uniquely identifying a CICS system when there are multiple CICS systems with the same name defined.



- A Group alone. CICS PA will select all CICS APPLIDs defined to the Group. For example, for transaction grouping, or for systems that connect via IRC/MRO, ISC/APPC, or IPIC.

CICS PA uses the System Selection in JCL generation to build the `APPLID(applid1,applid2,applid3,...)` and `INput(SMFIN001,SMFIN002,SMFIN003,...)` operands, and corresponding `//SMFINnnn DD` statements.

System Selection can also be specified either:

- In Global Options. The report-level specification takes precedence over the global.
- At run time. The run-time System Selection overrides the Global Options and optionally the report-level specification.

### Output

CICS PA provides a default **Report Output DDname** in the format **STALnnnn** where nnnn is **0001-9999**.

**Alert** The Alert Definition containing the conditions used to select the records that you want to report. You must have already created this Alert Definition in the currently active Repository. To select from a list of Alert Definitions in the Repository, press **Prompt** (F4). To create a new Alert Definition, return to the primary option menu, and then select option 8.5. For details, see Chapter 14, “Statistics alert reporting,” on page 355.

To use a different Repository, return to the primary option menu, and then select option 0.3. If you define more than one Statistics Alert report in a Report Set, the reports must all refer to Alert Definitions stored in the same Repository; the JCL for a Report Set can refer to only one Repository.

CICS PA JCL generation translates this option to the `STALTDEF` operand.

The line actions available on this panel are the same as on similar Reports list panels. See “Performance List report” on page 170.

To display the Statistics Alert Report panel, enter line action **S** against the **Alert** Statistics Report on the Report Set panel, then if the list of previously specified reports is displayed, enter line action **S** against a particular report in the list.

File Systems Options Help	
-----	
SAMPLE - Statistics Alert Report	
Command ==> _____	
System Selection:	Report Output:
APPLID . . CICS001 +	DDname . . . . . STAL0001
Image . . MVS1 +	Print Lines per Page . . ____ (1-255)
Group . . +	
Alert . . . IDDS +	
Report Sorted By:	Report Type (APPLID and Alert only):
1 1. APPLID	/ List _ Summary
2. Alert	
3. Collection Time	
4. Statistics Interval	
5. Resource	
Report Format:	
Title . . _____	
Filter Criteria:	
Type . . . . . / EOD / INT / USS / REQ / RRT	
Repository . . : CICS001.XXX.REPOSTRY	

Figure 123. Statistics Alert Report

Use this panel to specify report options for the Statistics Alert report. The report format is fixed. The only mandatory options are the DDname for the report output and the Alert. You can let the other options default.

The options are:

#### Report Output DDname

The DDname for the report output which CICS PA uses when generating the JCL to run the Report Set. The DDname is mandatory and should be unique to separate the output of multiple reports.

CICS PA assigns a default DDname **STALnnnn** where nnnn is a sequential number **0001-9999** to ensure each report has a unique DDname.

This option generates the OUTPUT(ddname) operand.

#### Print Lines per Page

The maximum number of lines, including headings, to print on each page of the report. Valid values are from 1 to 255. The default is **60**.

The global value applies to all reports. If a value is specified on this report panel, the report value takes precedence over the global for this report only.

CICS PA JCL generation translates this field to the LINECount(nnn) operand.

#### Report Sorted By and Report Type

The sort order of the report. For reports sorted by APPLID or Alert, you can specify a report type: List (the default), Summary, or both. Other sorting options are available only as List reports. List reports show each instance of an Alert on a separate row, with details such as the threshold value and the Formula value that triggered the Alert. Summary reports show the number of Alerts for the report period, rather than the details of each instance.

This option generates the BY operand.

**Filter Criteria**

To limit the types of CICS statistics intervals that CICS PA includes in the report, enter / next to the types you are interested in:

**EOD** End-of-day  
**REQ** Requested  
**USS** Unsolicited  
**INT** Interval  
**RRT** Requested reset

Selecting none of the types is the same as selecting all types.

This option generates the TYPE operand.

**Title** Title of the report. Specify up to 128 characters of text to describe the report. CICS PA concatenates the two lines of 64 exactly as entered to make one line which prints at the top of each page of the report below the heading. The default is blank (no title).

This option generates the TITLE1('left-half') and TITLE2('right-half') operands.

## CICS Transaction Gateway reports

The CICS Transaction Gateway reports provide comprehensive reporting of CICS TG Statistics (SMF 111) records.

- The Activity Summary report provides a high-level overview of Gateway daemon address spaces and their workloads. This report also indicates whether connected users or systems might have experienced problems due to communications failure or request time out.
- The Usage and Capacity report summarizes Gateway daemon resource usage over time, including 31-bit region and Java heap storage utilization, communication sessions, and connection manager and worker thread pools.
- The Configuration Summary report provides a snapshot of key configuration values for each active Gateway daemon in your system. You can view and compare configurations of multiple Gateway daemons within one report. The reports also provide a useful historical reference for identifying changes in configuration over time.
- The Client Workload report provides a high-level overview of the application workload in terms of response time, network latency, request volumes, data transfer, and transaction type, broken down by Gateway daemon instance. This report can give insight into application usage patterns throughout a daily, weekly, or monthly cycle, and in time can reveal longer term trends. It can also be used to see the impact on end users of incidents in the overall system. Cross referencing a particular interval with the CICS Workload report can then lead you to identify which CICS region might be associated with a particular incident.
- The CICS Workload report provides an overview of workload between Gateway daemons and their connected CICS regions, broken down by Gateway daemon instance and CICS connection. This report allows you to identify which CICS regions are most heavily loaded, and to identify when a CICS region experienced abnormal response times during a particular interval or when some requests to a CICS region were affected by communications problems.

To request the reports, enter line action **S** against the **CICS Transaction Gateway Statistics Report** on the Report Set panel. If reports of this type have been previously specified, the list of CICS Transaction Gateway Reports is displayed.

Otherwise, the CICS Transaction Gateway Report panel is displayed for you to define your first report of this type.

```

File  Filter  Edit  Systems  Options  Help
-----
                        SAMPLE - CICS Transaction Gateway Reports          Row 1 from 1
Command ==> _____ Scroll ==> ____

      ---- System Selection ----
/  Exc  APPLID + Image + Group +      Output
-      CICSPO01 _____ STTG0001
-      CICSST001 _____ STTG0002
***** Bottom of data *****

```

Figure 124. CICS Transaction Gateway Reports

This panel displays the list of CICS TG reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The line actions are the same as those for the Performance List Reports panel. See “Performance List report” on page 170.

If the list of previously specified reports is displayed, enter line action **S** against a particular report in the list.

```

File  Systems  Options  Help
-----
                        SAMPLE - CICS Transaction Gateway Report
Command ==> _____

System Selection:                                Report Output:
APPLID . . CICSPO01 +                            DDname . . . . . STTG0001
Image . . _____ +                          Print Lines per Page . . ____ (1-255)
Group . . _____ +

Reports Required:
/ Activity Summary
7 Usage and Capacity
7 Configuration Summary
7 Client Workload
7 CICS Workload
Ratio: 90 (Pipes or Sessions ratio)

Report Format:
Title . . _____

F1=Help      F3=Exit      F4=Prompt      F7=Backward      F8=Forward      F10=Actions
F12=Cancel

```

Figure 125. CICS Transaction Gateway Report

Use this panel to select the reports and specify report options:

### Reports Required

Enter / to select the reports you want produced:

#### Activity Summary

Requests the Activity Summary report. This option generates the ACTIVITY operand.

#### Usage and Capacity

Requests the Usage and Capacity report. This option generates the USAGE operand.

**Configuration Summary**

Requests the Configuration Summary report. This option generates the CONFIGURATION operand.

**Client Workload**

Requests the Client Workload report. This option generates the CLIENTWORKLOAD operand.

**CICS Workload**

Requests the CICS Workload report. This option generates the CICSWORKLOAD operand.

**Ratio** This option applies only to the Usage and Capacity report. A warning indicator is displayed against the EXCI pipes or IPIC sessions fields in the report when the Num/Max ratio or Num/Avail ratio exceeds the specified value. The default is 90.

This value generates the `RATIO(value)` suboperand.

The report options and Title are the same as those for the Performance List report (see “Performance List report” on page 170).

CICS PA provides a default **Report Output DDname** in the format **STTGnnnn** where nnnn is **0001-9999**. All selected reports will be written consecutively to this ddname. To separate the reports, create individual CICS TG reports and change the Report Output DDname for each one.

---

## Subsystem reports

The Subsystem reports are produced from database subsystem accounting data stored in SMF files. The reports in this category are:

- “DB2 report”
- “WebSphere MQ report” on page 237
- “OMEGAMON reports” on page 241

### DB2 report

The DB2 report processes CICS CMF performance class (SMF 110) records and DB2 accounting (SMF 101) records to produce a consolidated and detailed view of DB2 usage by your CICS systems. The DB2 report enables you to view CICS and DB2 resource usage statistics together in a single report.

The DB2 report matches CMF Performance records with DB2 accounting records by network unit-of-work id. Your CICS-DB2 resources must be defined with **ACCOUNTREC(TASK)** or **ACCOUNTREC(UOW)** for matching to occur.

The DB2 List report shows detailed information of DB2 activity for each transaction. The DB2 Summary reports summarize DB2 activity by transaction:

- For CMF records: by APPLID/transaction/program
- For DB2 records: by APPLID/transaction/program/SSID/plan

The reports include the following DB2 information:

- DB2 Thread Identification, for easy cross-reference to DB2 PM
- Class 1 Thread elapsed and CPU times
- Class 2 In-DB2 elapsed and CPU times
- Class 3 Suspend times
- Buffer Manager statistics
- Locking statistics
- SQL DML statistics

A Recap report showing processing statistics is always printed at the end.

To request the DB2 report, enter line action **S** against the **DB2** Subsystem Report on the Report Set panel. If reports of this type have been previously specified, the list of DB2 Reports is displayed. Otherwise, the DB2 Report panel is displayed for you to define your first report of this type.

```

File  Filter  Edit  Systems  Options  Help
-----
                                SAMPLE - DB2 Reports                                Row 1 from 4
Command ==> _____ Scroll ==> _____

      ---- System Selection ----
/  Exc  APPLID +  Image +  Group +  Output  Selection
-      CICSP001  _____  _____  DB2R0001  YES
-      DEVT _____  MVS1 _____  DB2R0002  NO
-      CICST001  _____  _____  DB2R0003  YES
-      * _____  _____  RSYSGRP1  DB2R0004  NO
***** End of list *****

```

Figure 126. DB2 Reports

This panel displays the list of DB2 Reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options are the same as those for the Performance List Reports panel, except there is no Report Form. See "Performance List report" on page 170.

The line actions are the same as on similar Reports list panels. See page "Performance List report" on page 170.

Enter line action **S** to select a report in the list.

```

File Systems Options Help
-----
                        SAMPLE - DB2 Report
Command ==> _____

CICS System Selection:                Report Output:
APPLID . . CICSP001 +                DDname . . . . . DB2R0001
Image . . _____ +                Print Lines per Page . . ____ (1-255)
Group . . _____ +

DB2 System Selection:                Report Options:
SSID . . . DB2P +                    / Process DB2 Accounting records
Image . . _____ +                / List records with no DB2 activity
Group . . _____ +                / Long Summary with DB2 maximums

Reports          ----- DB2 Accounting data to include in report -----
Required:        Class1 Class2 Class3 Buffer Locking DML 1 DML 2
- List           /      /      -      /      /      -      -
- Long Summary   /      /      -      /      /      -      -
/ Short Summary

Report Format:
Title . . _____

Selection Criteria:
- Performance *

F1=Help      F3=Exit      F4=Prompt      F7=Backward  F8=Forward  F10=Actions
F12=Cancel

```

Figure 127. DB2 Report

Use this panel to specify report options and record selection criteria for the DB2 report. The only mandatory option is the Report Output DDname. You can let the other options default.

The options are:

### CICS System Selection

Identifies the CICS APPLIDs whose data you want to select for processing.

You can specify any combination of APPLID, Image, or Group, but these must be defined in your System Definitions. If you do not specify System Selection here or in the Global Options, then you are prompted at run time to specify the System Selection. This will apply globally to all reports and extracts without their own System Selection. This is recommended as it allows you to run your Report Sets against any of your defined Systems. Press the Prompt key (F4) to select from a list of defined Systems, Images, or Groups. To modify your System Definitions, select Systems in the action bar.

Specify one of the following:

- A CICS APPLID. An APPLID that matches a defined System's name pattern is also allowed. For example, CICSP1 can be specified if CICSP\* is a defined system.
- An APPLID and an MVS Image. This identifies the MVS Image where your CICS system runs.
- An MVS Image. All CICS systems executing on this MVS Image is selected.
- An APPLID and Image combination plus a Group. This is useful for uniquely identifying a CICS system when there are multiple CICS systems with the same name defined.

- A Group alone. CICS PA will select all CICS APPLIDs defined to the Group. For example, for transaction grouping, or for systems that connect via IRC/MRO, ISC/APPC, or IPIC.

CICS PA uses the System Selection in JCL generation to build the `APPLID(applid1,applid2,applid3,...)` and `INput(SMFIN001,SMFIN002,SMFIN003,...)` operands, and corresponding `//SMFINnnn DD` statements.

System Selection can also be specified either:

- In Global Options. The report-level specification takes precedence over the global.
- At run time. The run-time System Selection overrides the Global Options and optionally the report-level specification.

### DB2 System Selection

DB2 System Selection identifies the DB2 subsystems that you want to report against. The DB2 subsystems must be those used by the specified CICS systems, otherwise they are ignored by DB2 report processing.

If you do not specify a DB2 System Selection then the DB2 SSIDs are obtained as follows:

- When the CICS System Definition specifies a Group that contains DB2 SSIDs, then CICS PA uses the DB2 SSIDs defined to the Group.
- Otherwise CICS PA assumes that the DB2 Accounting records are contained in the same file as the CICS system's CMF records, and will automatically determine the correct DB2 subsystems for the CICS systems to be reported.

Any combination of SSID, Image, or Group can be specified but must be defined in your System Definitions. Use **Prompt** (F4) to select from a list of defined Systems, Images or Groups. To modify your System Definitions, select **Systems** in the action bar.

CICS PA uses the DB2 System Selection in JCL generation to build the `SSID(ssid1,ssid2,ssid3,...)` operand.

### Report Output DDname

The DDname for the report output which CICS PA uses when generating the JCL to run the Report Set. The DDname is mandatory and should be unique to separate the output of multiple reports.

CICS PA assigns a default DDname **DB2Rnnnnn** where nnnn is a sequential number **0001-9999** to ensure each report has a unique DDname.

This option generates the `OUTPUT(ddname)` operand.

### Print Lines per Page

The maximum number of lines, including headings, to print on each page of the report. Valid values are from 1 to 255. The default is **60**.

The global value applies to all reports. If a value is specified on this report panel, the report value takes precedence over the global for this report only.

CICS PA JCL generation translates this field to the `LINECount(nnn)` operand.

### Reports Required

Enter / to select the reports you want produced. The Recap report is always produced at the end to provide processing statistics.



- Select **List** to request the DB2 List report, a detailed list of all network units-of-work with DB2 activity, consolidating CMF performance class records and DB2 accounting data. This selection generates the LIST operand.
- Select **Long Summary** to request the DB2 Long Summary report which summarizes these details by transaction and program within APPLID, giving average and maximum values for each. This selection generates the LONGSUM operand.
- Select **Short Summary** to request the DB2 Short Summary report which is an abridged version of the Long Summary report with significantly less detail and averages only (no maximums). This selection generates the SHORTSUM operand and is the default.

#### DB2 Accounting data to include in reports

This option applies to the DB2 List and Long Summary reports, and then only if **Process DB2 Accounting records** is selected.

Enter / to select the DB2 detail lines to include in each report:

**Class1** Thread Time (default)

**Class2** In-DB2 Time (default)

**Class3** Suspend Time

**Buffer** Buffer Manager Summary (default)

**Locking**

Locking Summary (default)

**DML 1**

SQL DML Query/Update

**DML 2**

SQL DML 'Other'

The default is to include **Class1**, **Class2**, **Buffer**, and **Locking**.

**Note:** Thread Identification is always reported.

If the List report is selected, JCL generation translates this option to LIST(CLASS1,CLASS2,CLASS3,BUFFER,LOCKING,DML1,DML2).

If the LongSummary report is selected, JCL generation translates this option to LONGSUM(CLASS1,CLASS2,CLASS3,BUFFER,LOCKING,DML1,DML2).

#### Report Options

The DB2 Report processes all CMF performance data records that are within a network unit-of-work that involves some DB2 activity. You can control the amount of processing and volume of output by restricting the data that is reported.

Enter / to select the type of data to include in the report:

##### Process DB2 Accounting records

Select this option for CICS PA to process DB2 Accounting (SMF 101) records. Selected is the default.

If not selected, then the CMFONLY operand is generated, and CICS PA just reports the DB2 statistics contained in the CMF performance records.

##### List records with no DB2 activity

This option only applies to the DB2 List report. Select this option to report CMF performance records with DB2REQCT=0 provided they are part of a network unit-of-work that has some DB2 activity. If selected, the LISTZERO operand is generated.

Not selected is the default.

### Long Summary with DB2 maximums

Select this option to include maximum values in the DB2 Accounting detail lines of the Long Summary report. If selected, the MAXLONGSUM operand is generated and both average and maximum values are reported. Selected is the default.

If not selected, the NOMAXLONGSUM operand is generated and only the averages are reported.

**Title** Title of the report. Specify up to 128 characters of text to describe the report. CICS PA concatenates the two lines of 64 exactly as entered to make one line which prints at the top of each page of the report below the heading. The default is blank (no title).

This option generates the TITLE1('left-half') and TITLE2('right-half') operands.

### Performance Selection Criteria

For information on how the Selection Criteria applies to the DB2 Accounting records, see "Selecting DB2 accounting records" on page 166.

#### Line Actions:

- /** Display the menu of line actions.
- S** Display the subpanel where Selection Criteria can be specified for this report. For details, see "Specifying Selection Criteria" on page 156.
- A** Activate the Selection Criteria so they are generated for this report when the Report Set is submitted. Selection Criteria can only be activated if one or more Select Statements are specified and not all are excluded. An asterisk \* indicates they are active.
- D** Deactivate the Selection Criteria. Any you have specified here will not be used.

### Select a System (DB2 SSID)

To report on a particular system, select it from a list of available systems by pressing **Prompt** (F4) from the DB2 SSID field in System Selection. Only systems of that type are displayed. See Figure 128 for an example showing a list of DB2 SSIDs.

Enter a **/** or **S** line action (or point-and-shoot) to select a system from the list to insert in your System Selection.

Systems

Row 1 to 4 of 4

Command ==> \_\_\_\_\_ Scroll ==> PAGE

Select a System then press Enter.

System	Image	Files	Description
. DB2P	MVS1	Yes	DB2 Subsystem DB2P/MVS1_____
. DB2D	MVS1	Yes	DB2 Subsystem DB2D/MVS1_____
. DB2E		Yes	DB2 Subsystem DB2E_____
. DB2F		No	DB2 Subsystem DB2F_____

\*\*\*\*\* End of list \*\*\*\*\*

Figure 128. Select a System (DB2 SSID)

## WebSphere MQ report

The WebSphere MQ report processes WebSphere MQ SMF accounting (SMF 116) records to produce a detailed view of WebSphere MQ usage by your CICS systems.

The WebSphere MQ List reports provide, depending on the WebSphere MQ accounting traces that are active, details about:

- Transactions
- WebSphere MQ Queues that were referenced
- WebSphere MQ global (not Transaction-specific or Queue-specific) statistics
- WebSphere Queue-specific commands issued by Transaction

These can be sorted and aggregated by Transaction ID or Queue name or both.

To request the report, enter line action **S** against the **WebSphere MQ** Subsystem Report on the Report Set panel. If reports of this type have been previously specified, the list of WebSphere MQ Reports is displayed. Otherwise, the WebSphere MQ panel is displayed for you to define your first report of this type.

```

File  Filter  Edit  Systems  Options  Help
-----
                        SAMPLE - WebSphere MQ Reports
                        Row 1 from 2
Command ==> _____ Scroll ==> _____

      ---- System Selection ----
/  Exc  MQ SSID + Image + Group +  Output  Selection
-      -      -      -      -      -      Criteria
-      -      -      -      -      -      NO
-      -      -      -      -      -      NO
***** End of list *****

```

Figure 129. WebSphere MQ Reports

This panel displays the list of WebSphere MQ reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options are:

### System Selection

System Selection identifies the MQ Subsystems and associated SMF files that you want to report against. MQ System Selection can be specified here or on the WebSphere MQ Report panel. For details, see the description of this option following the next figure.

### Output

CICS PA provides a default **Report Output DDname** in the format **MQ00nnnn** where nnnn is **0001-9999**.

The line actions are the same as on similar Reports list panels. See “Performance List report” on page 170.

Enter line action **S** to select a report in the list.

File Systems Options Help	
-----	
SAMPLE - WebSphere MQ Report	
Command ==> _____	
MQ System Selection:	Report Output:
SSID . . . _____ +	DDname . . . . . MQ000001
Image . . _____ +	Print Lines per Page . . ____ (1-255)
Group . . _____ +	
Reports Required:	Process Accounting Class Records:
List report	1 1. Class 1
Summary report	2 2. Class 3
Sort Summary by:	
1 1. Transaction 2. Queue 3. Transaction/Queue 4. Queue/Transaction	
Report Filter:	
Queue Name _____	
Report Format:	
Title . . _____	
_____	
Selection Criteria:	
_ Performance	
F1=Help      F3=Exit      F4=Prompt      F7=Backward      F8=Forward      F10=Actions	
F12=Cancel	

Figure 130. WebSphere MQ Report

Use this panel to specify report options and record selection criteria for the WebSphere MQ report. The only mandatory option is the Report Output DDname. You can let the other options default.

The options are:

### MQ System Selection

System Selection identifies the MQ Subsystems and associated SMF files that you want to report against. Any combination of MQ SSID, Image, or Group can be specified but must be defined in System Definitions. You can use **Prompt** (F4) to select from a list. To link directly to System Definitions, select **Systems** in the action bar.

Specify either:

- An MQ SSID.
- An MQ SSID for a particular Image. This identifies a particular MQ Subsystem when there is more than one with the same ID.
- An Image. CICS PA will report on all MQ systems running on this Image using the SMF files defined for the Image.
- An MQ SSID and Image combination plus a Group. This is useful to uniquely identify a system when there is more than one of the same name defined in System Definitions.
- A Group alone. CICS PA will report on all MQ systems in the Group to produce a single consolidated report.

CICS PA uses the System Selection in JCL generation to build the SSID(ssid1,ssid2,ssid3,...) and INput(SMFIN001,SMFIN002,SMFIN003,...) operands, and corresponding //SMFINnnn DD statements.

### Report Output DDname

The ddname for the report output which CICS PA uses when generating

the JCL to run the Report Set. The ddname is mandatory and should be unique to separate the output of multiple reports.

CICS PA assigns a default ddname **MQ00nnnn** where nnnn is a sequential number **0001-9999** to ensure each report has a unique ddname.

This option generates the OUTPUT(ddname) operand.

#### **Print Lines per Page**

The maximum number of lines, including headings, to print on each page of the report. Valid values are from 1 to 255. The default is **60**.

The global value applies to all reports. If a value is specified on this report panel, the report value takes precedence over the global for this report only.

CICS PA JCL generation translates this field to the LINECount(nnn) operand.

#### **Reports Required**

Enter / to select the reports you want produced.

- Select **List** to request the WebSphere MQ List report. This selection generates the LIST operand.
- Select **Summary** to request the WebSphere MQ Summary report. This selection generates the SUMMARY operand and is the default.

#### **Process Accounting Class Records**

Select the type of MQ accounting data to process. Select either:

1. **Class 1** to request that the reports process MQ Class 1 records only. This is the default. This selection generates the CLASS1 operand.
2. **Class 3** to request that the reports process MQ Class 3 records only. This selection generates the CLASS3 operand.

If you need to report both Class 1 and Class 3 data, define another MQ report. CICS PA will produce both reports in a single pass of the data.

#### **Sort Summary by**

Specify the required sorting sequence of the Summary report. You can order the Summary report by the following values:

1. Transaction ID. This generates the SORT(TRAN) operand and is the default.
2. WebSphere Queue name. This generates the SORT(QUEUE) operand.
3. Transaction ID, then Queue name. This generates the SORT(TRAN,QUEUE) operand.
4. Queue name, then Transaction ID. This generates the SORT(QUEUE,TRAN) operand.

#### **Report Filter**

Specify a Queue name to select records for a particular WebSphere MQ queue name. You can specify a pattern such as CICS MQ\* to include more than one queue name. The queue name is case-sensitive.

This option generates the QNAME(name) operand.

#### **Title**

Title of the report. Specify up to 128 characters of text to describe the report. CICS PA concatenates the two lines of 64 exactly as entered to make one line which prints at the top of each page of the report below the heading. The default is blank (no title).

This option generates the TITLE1('left-half') and TITLE2('right-half') operands.

## Performance Selection Criteria

The fields that can be specified in Selection Criteria for filtering MQ accounting (SMF 116) records are:

### APPLID

CICS APPLID

### TRAN CICS Transaction ID

### TASKNO

CICS Task ID

### START

MQ Thread Begin Time

### STOP MQ Thread End Time

### ACTIVE

MQ Thread Begin-End Time

### Line Actions:

- /** Display the menu of line actions.
- S** Display the subpanel where Selection Criteria can be specified for this report. For details, see “Specifying Selection Criteria” on page 156.
- A** Activate the Selection Criteria so they are generated for this report when the Report Set is submitted. Selection Criteria can only be activated if one or more Select Statements are specified and not all are excluded. An asterisk \* indicates they are active.
- D** Deactivate the Selection Criteria. Any you have specified here will not be used.

## Select a System (MQ SSID)

To report on a particular system, you can select one from a list of available systems by pressing **Prompt** (F4) from the **MQ SSID** field in System Selection. Only the systems of that type are displayed. See Figure 131 for an example showing a list of MQ SSIDs.

Enter a **/** or **S** line action (or point-and-shoot) to select a system from the list to insert in your System Selection.

Command ==> \_\_\_\_\_ Systems \_\_\_\_\_ Row 1 to 2 of 2  
Scroll ==> PAGE \_\_\_\_\_

Select a System then press Enter.

System	Image	Files	Description
. MQ1T	MVS1	Yes	MQ Subsystem MQ1T/MVS1 _____
. MQ1P		No	MQ Subsystem MQ1P _____

\*\*\*\*\* End of list \*\*\*\*\*

Figure 131. Select a System (MQ SSID)

## WebSphere MQ accounting traces

WebSphere MQ accounting records are produced as a result of activating the Accounting Trace component of WebSphere MQ. That activation is a consequence of either coding a suitable parameter in a WebSphere MQ control block or by the issuing of a WebSphere MQ subsystem command from the MVS Operator Console. If the WebSphere MQ accounting trace is active, WebSphere MQ SMF accounting records (type 116) are produced with a subtype (0, 1 or 2) depending on what level of trace has been activated. If the MQ accounting trace is active, subtype 0 records

are always produced but subtypes 1 and 2 are only produced if CLASS(3) is specified when the trace is activated; this can only be performed via an MVS Operator Command.

## OMEGAMON reports

The OMEGAMON reports process OMEGAMON XE for CICS (SMF 112) records to produce a detailed view of how CICS transactions use the following types of database management system (DBMS):

Adabas  
CA-Datcom  
CA-IDMS  
Supra

For each type of DBMS, you can request up to three reports:

- A List report, showing database usage for each transaction.
- A Transaction Summary report, showing database usage summarized by transaction ID.
- A Database Summary report, showing database usage summarized by database.

The information in each report varies depending on the type of DBMS, but typically includes elapsed times and counts for each of the methods that transactions use to access a database, such as read, write, add, update, and delete.

## Requesting one or more OMEGAMON reports

Enter line action **S** against the OMEGAMON Subsystem Report on the Report Set panel. If reports of this type have been previously specified, the list of OMEGAMON reports is displayed. Otherwise, the OMEGAMON panel is displayed for you to define your first report of this type.

File Filter Edit Systems Options Help						
SAMPLE - OMEGAMON Reports						Row 1 from 1
Command ==> _____						Scroll ==> _____
----- System Selection -----						
/	Exc	APPLID +	Image +	Group +	Output	Selection Criteria
-					OMEG0001	NO
***** End of list *****						

Figure 132. OMEGAMON Reports

This panel displays the list of OMEGAMON reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options are the same as those for the Performance List Reports panel, except there is no Report Form. See "Performance List report" on page 170.

The line actions are the same as on similar Reports list panels. See "Performance List report" on page 170.

Enter line action **S** to select a report in the list.

File Systems Options Help			
-----			
SAMPLE - OMEGAMON Report			
Command ==> _____			
CICS System Selection:		Report Output:	
APPLID . . _____ +		DDname . . . . . OMEG0001	
Image . . _____ +		Print Lines per Page . . _____ (1-255)	
Group . . _____ +			
Reports Required:		Summary Options:	
/ List		/ Average	Total
/ Summary		- Minimum	/ Maximum
- / By Transaction		- Deviation	
/ By Database		- Peak . . 90	(50-100%)
Statistics to include:		DBMS Selection:	
/ Total DBMS activity		/ Adabas	/ Supra
/ Individual Database		/ CA-Datcom	/ CA-IDMS
Report Format:			
Title . . _____			
Selection Criteria:			
- Performance			
F1=Help      F3=Exit      F4=Prompt      F7=Backward      F8=Forward      F10=Actions			
F12=Cancel			

Figure 133. OMEGAMON Report

Use this panel to specify report options and record selection criteria for the OMEGAMON reports. The only mandatory option is the Report Output DDname. You can let the other options default.

The options are:

### CICS System Selection

Identifies the CICS APPLIDs whose data you want to select for processing.

You can specify any combination of APPLID, Image, or Group, but these must be defined in your System Definitions. If you do not specify System Selection here or in the Global Options, then you are prompted at run time to specify the System Selection. This will apply globally to all reports and extracts without their own System Selection. This is recommended as it allows you to run your Report Sets against any of your defined Systems. Press the Prompt key (F4) to select from a list of defined Systems, Images, or Groups. To modify your System Definitions, select Systems in the action bar.

Specify one of the following:

- A CICS APPLID. An APPLID that matches a defined System's name pattern is also allowed. For example, CICSP1 can be specified if CICSP\* is a defined system.
- An APPLID and an MVS Image. This identifies the MVS Image where your CICS system runs.
- An MVS Image. All CICS systems executing on this MVS Image is selected.
- An APPLID and Image combination plus a Group. This is useful for uniquely identifying a CICS system when there are multiple CICS systems with the same name defined.



- A Group alone. CICS PA will select all CICS APPLIDs defined to the Group. For example, for transaction grouping, or for systems that connect via IRC/MRO, ISC/APPC, or IPIC.

CICS PA uses the System Selection in JCL generation to build the APPLID(applid1,applid2,applid3,...) and INput(SMFIN001,SMFIN002,SMFIN003,...) operands, and corresponding //SMFINnnn DD statements.

System Selection can also be specified either:

- In Global Options. The report-level specification takes precedence over the global.
- At run time. The run-time System Selection overrides the Global Options and optionally the report-level specification.

### Report Output DDname

The DDname for the report output which CICS PA uses when generating the JCL to run the Report Set. The DDname is mandatory and should be unique to separate the output of multiple reports.

CICS PA assigns a default DDname **OMEGnnnn** where nnnn is a sequential number **0001-9999** to ensure each report has a unique DDname.

This option generates the OUTPUT(ddname) operand.

### Print Lines per Page

The maximum number of lines, including headings, to print on each page of the report. Valid values are from 1 to 255. The default is **60**.

The global value applies to all reports. If a value is specified on this report panel, the report value takes precedence over the global for this report only.

CICS PA JCL generation translates this field to the LINECount(nnn) operand.

### Reports Required

Enter / to select the reports you want produced:

**List** Requests the OMEGAMON List report. This option generates the LIST operand.

#### Summary

Requests the OMEGAMON Summary report. This option generates the SUMMARY operand.

There are two types of Summary report:

#### By Transaction

Requests the Transaction Summary report, which groups transaction data into sections for each transaction ID.

Within each section, the report shows the transaction data for each database accessed by that transaction ID, followed by total figures for that transaction ID across all databases.

This option generates the SUMMARY(TRAN) operand.

#### By Database

Requests the Database Summary report, which groups transaction data into sections for each database. Within each section, the report shows the transaction data for each transaction ID that has accessed that database, followed by total figures for that database for all transaction IDs.

This option generates the SUMMARY(DATABASE) operand.

If you select neither List nor Summary, then the generated command will contain neither the LIST operand nor the SUMMARY operand, and so the command will follow its default behavior, which is to produce both types of Summary report.

### **Summary Options**

The statistical functions that the Database Summary and Transaction Summary reports use to summarize transaction data. The options are: average, total, minimum, maximum, standard deviation, and peak percentile. Each option that you select produces additional rows in the reports, with the function name as the row heading.

### **Statistics to include**

Each OMEGAMON (SMF 112) record contains database usage details for a single transaction. A transaction might use one database, or it might use multiple databases from different types of DBMS. For each type of DBMS used by the transaction, the record contains a “totals” segment. For each database used by the transaction, the record contains a “detail” segment. This option specifies whether you want the report to include information from totals segments, details segments, or both:

#### **Total DBMS activity**

Includes information from totals segments. This option generates the PRINT(TOTALS) operand.

#### **Individual Database**

Includes information from detail segments. This option generates the PRINT(DB) operand.

### **DBMS Selection**

The types of DBMS for which you want to produce reports.

**Title** Title of the report. Specify up to 128 characters of text to describe the report. CICS PA concatenates the two lines of 64 exactly as entered to make one line which prints at the top of each page of the report below the heading. The default is blank (no title).

This option generates the TITLE1('left-half') and TITLE2('right-half') operands.

### **Performance Selection Criteria**

You can specify Selection Criteria to filter the OMEGAMON (SMF 112) records on time period and field values to restrict reporting to the data that is of interest to you.

CICS PA checks only the following Performance Selection Criteria fields when filtering OMEGAMON records:

#### **APPLID**

CICS APPLID

#### **FILENAME**

Database (or file) name

#### **NETUOWPX**

Originating System VTAM network name

#### **START**

Task start time.

**Note:** Report Interval-based selection for OMEGAMON XE for CICS records is limited to the Attach (START) time; the STOP and ACTIVE options are ignored.

**TASKNO**

Transaction identification number

**TRAN** CICS transaction ID

**UOWID**

Unit of work ID

All other fields are ignored.

**Line Actions:**

- /** Display the menu of line actions.
- S** Display the subpanel where Selection Criteria can be specified for this report. For details, see “Specifying Selection Criteria” on page 156.
- A** Activate the Selection Criteria so they are generated for this report when the Report Set is submitted. Selection Criteria can only be activated if one or more Select Statements are specified and not all are excluded. An asterisk \* indicates they are active.
- D** Deactivate the Selection Criteria. Any you have specified here will not be used.

---

## System reports

The System reports are produced from MVS system data stored in SMF files. Only the System Logger report is in this category.

### System Logger report

The System Logger report processes System Logger (SMF 88) records to provide information on the System Logger logstreams and coupling facility structures that are used by CICS Transaction Server for logging, recovery and backout operations. The report can assist with measuring the effects of tuning changes and identifying Logstream or Structure performance problems.

You can request two reports:

1. **System Logger List.** This report shows information on Logstream writes, deletes, and events, as well as Structure Alter events for each SMF recording interval.
2. **System Logger Summary.** This report summarizes Logstream and Structure statistics so you can measure Logger performance over a longer period of time.

These reports, when used in conjunction with the CICS Logger reports produced from the standard CICS statistics reporting utilities, provide a comprehensive analysis of the logstream activity for all your CICS systems.

To request a report, enter line action **S** against the **System Logger** System Report on the Report Set panel. If reports of this type have been previously specified, the list of System Logger Reports is displayed. Otherwise, the System Logger Report panel is displayed for you to define your first report of this type.

File Filter Edit Systems Options Help					
SAMPLE - System Logger Reports					Row 1 from 1
Command ==> _____			Scroll ==> _____		
----- System Selection -----					
/	Exc	Logger +	Image +	Group +	Output Selection
-		CICSP001	MVS1		LOGR0001 NO
***** End of list *****					

Figure 134. System Logger Reports

This panel displays the list of System Logger Reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options are:

### System Selection

System Selection identifies the System Logger(s) and associated SMF files you want to report against. Any combination of Logger, Image, or Group can be specified but must be defined in System Definitions. You can use **Prompt** (F4) to select from a list. To link directly to System Definitions, select **Systems** in the action bar.

Specify either:

- A Logger.
- A Logger for a particular Image. This identifies a particular System Logger when there is more than one with the same ID.
- An Image. CICS PA will report on all systems running on this Image using the SMF files defined for the Image.
- A Logger and Image combination plus a Group. This is useful to uniquely identify a system when there is more than one of the same name defined in System Definitions.
- A Group alone. CICS PA will report on all System and Image combinations in the Group to produce a single consolidated report.

CICS PA uses the System Selection in JCL generation to build the INput (SMFIN001, SMFIN002, SMFIN003, ...) operand and corresponding //SMFINnnn DD statements.

### Output

CICS PA provides a default **Report Output DDname** in the format **LOGRnnnn** where nnnn is **0001-9999**.

The line actions are the same as on similar Reports list panels. See "Performance List report" on page 170.

To display the System Logger Report panel, enter line action **S** against the **System Logger** Performance Report on the Report Set panel, then if the list of previously specified reports is displayed, enter line action **S** against a particular report in the list.

File Systems Options Help	
-----	
SAMPLE - System Logger Report	
Command ==> _____	
System Selection:	Report Output:
Logger . . CICS001 +	DDname . . . . . LOGR0001
Image . . MVS1 +	
Group . . +	
Reports Required:	Ordering Options:
- List	1 1. Sort by Logstream Name
- Include ALTER records	2. Sort by Structure Name
- Sort by Time	
/ Summary	SMF Options:
Interval . . . (hh:mm)	Recording Interval . . (mins)
Report Format:	
Title . .	
-----	
Selection Criteria:	
- Logger	
- Logstream Name . . .	
- Structure Name . . .	

Figure 135. System Logger Report

Use this panel to specify report options for the System Logger report. The report format is fixed. The only mandatory options are the DDname for the report output and the Sort order. You can let the other options default. Note that you cannot control the number of print lines per page for the System Logger Report. In addition to filtering by Logstream or Structure name or both, you can also filter records from processing by specifying selection criteria.

The options are:

### System Selection

System Selection identifies the System Logger(s) and associated SMF files you want to report against. Any combination of Logger, Image, or Group can be specified but must be defined in System Definitions. You can use **Prompt** (F4) to select from a list. To link directly to System Definitions, select **Systems** in the action bar.

Specify either:

- A Logger.
- A Logger for a particular Image. This identifies a particular System Logger when there is more than one with the same ID.
- An Image. CICS PA will report on all systems running on this Image using the SMF files defined for the Image.
- A Logger and Image combination plus a Group. This is useful to uniquely identify a system when there is more than one of the same name defined in System Definitions.
- A Group alone. CICS PA will report on all System and Image combinations in the Group to produce a single consolidated report.

CICS PA uses the System Selection in JCL generation to build the INput (SMFIN001,SMFIN002,SMFIN003,...) operand and corresponding //SMFINnnn DD statements.

### Report Output DDname

The DDname for the report output which CICS PA uses when generating

the JCL to run the Report Set. The DDname is mandatory and should be unique to separate the output of multiple reports.

CICS PA assigns a default DDname **LOGRnnnn** where nnnn is a sequential number **0001-9999** to ensure each report has a unique DDname.

This option generates the OUTPUT(ddname) operand.

### Reports Required

Enter / to select the reports you want produced.

- Select **List** to request the System Logger List report, a list of all Logger interval records in the SMF File. This selection generates the LIST operand.

You can also select **Include ALTER records** to include Structure Alter events in the report. These apply to Structures, not individual Logstreams, and are reported with a Logstream name of \*ALTER\*. This selection generates the LIST(ALTER) operand.

By default, the List report entries are printed in Logstream or Structure name sequence, depending on the Report Option selected. However, by selecting the **Sort by Time** option, the entries are printed in Logstream or Structure name sequence within each Interval expiry period. This selection generates the LIST(TIMESEQ) operand.

- Select **Summary** to request the System Logger Logstream Summary and Structure Summary reports. (A summary of ALTER activity is not included.) This selection generates the SUMMARY operand.

The default report is the Summary.

### Summary Interval

To present a single summary of records for the entire reporting period, leave this field blank (this is the default). To summarize records at intervals within the reporting period, enter a multiple of the SMF reporting interval, from 00:01 to 23:59. For example, if the SMF reporting interval was 5 minutes at the time that the logger records were written, then you can generate a System Logger Summary report that summarizes the logger records at any multiple of 5 minutes: 05:00, 10:00, 15:00 etc.

If you specify a Summary Interval, then ensure that the value you specify is an exact multiple of the SMF reporting interval. Otherwise, each of the summaries in the report might not be calculated from the same number of records.

This option appends a SUMMARYINTERVAL(hh:mm) suboperand to the SUMMARY operand.

### Ordering Options

The sort sequence for the System Logger List and Summary reports.

Select option **1** to sort by Logstream name, MVS ID, Structure name, then time stamp. This is the default. This selection generates a SORT(LOGSTREAMNAME) operand.

Select option **2** to sort by Structure name, Logstream name, MVS ID, then time stamp. This selection generates a SORT(STRUCTURENAME) operand.

### SMF Options: Recording Interval

The SMF global recording interval as specified in the INTVAL parameter of the SMFPRMnn PARMLIB member.

Specify an interval from 1 to 60 minutes. If not specified, CICS PA uses the recording interval in effect on the reporting system. The interval value is used by CICS PA for rate per second calculations in the System Logger Summary reports. If the interval used by CICS PA does not match the data, the total interval and rate calculations will be incorrect.

This option generates the INTERVAL(minutes) operand.

### Selection Criteria

To specify Selection Criteria to filter the System Logger records on time period and other field values, enter S next to **Logger**.

*Line Actions:* Valid line actions are:

- / Display the menu of line actions.
- S Select to display the subpanel where Selection Criteria for this extract can be specified. See "Specifying Selection Criteria" on page 156 for a discussion on how to do this.
- A Activate the Selection Criteria so they are generated for this extract when the Report Set is submitted. Selection Criteria can only be activated if one or more Select Statements are specified and not all are excluded. An asterisk \* indicates they are active.
- D Deactivate the Selection Criteria. Any you have specified here will not be used.

CICS PA JCL generation translates Selection Criteria to the SELECT(LOGGER operand).

Optionally, specify the **Logstream Name** and **Structure Name** patterns to be reported. Masking characters % and \* are allowed. Examples of possible patterns are:

**TEST.DFHLOG**

which must match exactly

**PROD.\***

which can match PROD.DFHLOG

**PROD.MVSA%**

which can match PROD.MVSA1, but not PROD.MVSA1LOG

These options generate the LOGSTREAM('name.or.pattern') and STRUCTURE('name.or.pattern') operands.

- Title** Title of the report. Specify up to 128 characters of text to describe the report. CICS PA concatenates the two lines of 64 exactly as entered to make one line which prints at the top of each page of the report below the heading. The default is blank (no title).

This option generates the TITLE1('left-half') and TITLE2('right-half') operands.

### Select a System (Logger)

To report on a particular system, you can select one from a list of available systems by pressing **Prompt** (F4) from the **Logger** field in System Selection. Only the systems of that type are displayed. See Figure 136 on page 250 for an example showing a list of System Loggers.

Enter a / or S line action (or point-and-shoot) to select a system from the list to insert in your System Selection.



Systems

Row 1 to 1 of 1

Command ==>

Scroll ==> PAGE

Select a System then press Enter.

System	Image	Files	Description
. CICSPO01	MVS1	Yes	System Log for CICSPL0G/MVS1

\*\*\*\*\* End of list \*\*\*\*\*

Figure 136. Select a System (Logger)

## Extracts

The extracts process SMF data to produce extract data sets suitable for further manipulation and analysis. For example:

- Analyze the Cross-System Work extract data using CICS PA Performance Reports such as the List, Summary, and Totals reports.
- Analyze the Performance Extract, Statistics Extract, or System Logger Extract data using external programs such as DB2 or PC spreadsheet tools.
- Specify the Record Selection extract data sets as your SMF Files in System Definitions to reduce the volume of data processed by CICS PA.

### Cross-System Work extract

The Cross-System Work Extract is created for the purpose of correlating performance class data from one or more regions. The extract records are based on a single network unit-of-work, as opposed to a single transaction. All performance class records contained in a single network unit-of-work are added, or combined. These records are then written to the extract data set as one record which represents all the work done on behalf of the network unit-of-work. A Recap report containing processing statistics is always printed at the end of extract processing.

The extract records have the same format as CMF performance class records written by the latest CICS release supported by CICS PA (VRM 690), regardless of the CICS releases of the input records.

You can use the extract data set as input to CICS PA for further processing, just like an SMF data set that contains CMF performance class records; for example, to run the Performance List, Performance List Extended, Performance Summary, and Performance Totals reports.

To request the extract, enter line action **S** against the **Cross-System Work** Extract on the Report Set panel. If extracts of this type have been previously specified, the list of Cross-System Work Extracts is displayed. Otherwise, the Cross-System Work Extract panel is displayed for you to define your first extract of this type.



File Filter Edit Systems Options Help					
SAMPLE - Cross-System Work Extracts					Row 1 from 2
Command ==>			Scroll ==>		
----- System Selection -----					
/	Exc	APPLID +	Image +	Group +	Recap
				MROPROD	CROX0001
-		Output Data Set . . 'MROPROD.CROSSWK'			
-----					
				AORPROD	CROX0002
-		Output Data Set . . 'AORPROD.CROSSWK'			
-----					
***** End of list *****					

Figure 137. Cross-System Work Extracts

This panel displays the list of Cross-System Work Extracts in this Report Set. You can edit, select (edit), delete, or include/exclude any extract, insert new ones, or rearrange them (move/copy).

The options are:

**Exc** The report or extract is marked by an asterisk \* if it is to be **Excluded** from reporting. Enter the line action **X** to reverse the Exclude status.

#### System Selection

Identifies the CICS APPLIDs whose data you want to select for processing.

You can specify any combination of APPLID, Image, or Group, but these must be defined in your System Definitions. If you do not specify System Selection here or in the Global Options, then you are prompted at run time to specify the System Selection. This will apply globally to all reports and extracts without their own System Selection. This is recommended as it allows you to run your Report Sets against any of your defined Systems. Press the Prompt key (F4) to select from a list of defined Systems, Images, or Groups. To modify your System Definitions, select Systems in the action bar.

Specify one of the following:

- A CICS APPLID. An APPLID that matches a defined System's name pattern is also allowed. For example, CICS P1 can be specified if CICS P\* is a defined system.
- An APPLID and an MVS Image. This identifies the MVS Image where your CICS system runs.
- An MVS Image. All CICS systems executing on this MVS Image is selected.
- An APPLID and Image combination plus a Group. This is useful for uniquely identifying a CICS system when there are multiple CICS systems with the same name defined.
- A Group alone. CICS PA will select all CICS APPLIDs defined to the Group. For example, for transaction grouping, or for systems that connect via IRC/MRO, ISC/APPC, or IPIC.

CICS PA uses the System Selection in JCL generation to build the APPLID(applid1,applid2,applid3,...) and INput(SMFIN001,SMFIN002,SMFIN003,...) operands, and corresponding //SMFINnnn DD statements.

System Selection can also be specified either:

- In Global Options. The report-level specification takes precedence over the global.
- At run time. The run-time System Selection overrides the Global Options and optionally the report-level specification.

**Recap** The DDname for the Recap report which prints at the end of extract processing to provide processing statistics. The DDname is mandatory.

CICS PA assigns a default DDname **CROXnnnn** where nnnn is a sequential number **0001-9999** to ensure each Recap report has a unique DDname.

This option generates the OUTPUT(ddname) operand.

#### **Selection Criteria Indicator**

This indicator is generated by CICS PA.

**YES** indicates that Selection Criteria are activated for this extract.

**NO** indicates that Selection Criteria are not activated for this extract. This is because no Selection Criteria have been specified, all Select Statements are Excluded, or the Selection Criteria have been deactivated.

#### **Output Data Set**

The name of the data set where the extract records are written. If CICS PA is to create the data set at run time, the default allocation attributes specified on the Reporting Allocation Settings panel are used in generating the JCL. If the data set is already cataloged, then CICS PA will use DISP=OLD or DISP=MOD according to your request to overwrite or append to the existing data set.

When generating the JCL, CICS PA assigns a default DDname **CPAOXSnn** where nn is a sequential number **01-99** to ensure uniqueness.

When specifying the data set name, standard TSO conventions apply.

#### **Line Actions**

<b>/</b>	Display the menu of line actions.
<b>S</b>	Select this row to review or modify.
<b>I</b>	Insert a row.
<b>R</b>	Repeat this row.
<b>C</b>	Copy this row.
<b>M</b>	Move this row.
<b>A</b>	Move/Copy after this row.
<b>B</b>	Move/Copy before this row.
<b>D</b>	Delete this row.
<b>X</b>	Reverse the Exclude status.

To display the Cross-System Work Extract panel, enter line action **S** against the **Cross-System Work** Extract on the Report Set panel, then if the list of previously specified extracts is displayed, enter line action **S** against a particular extract in the list.

File Systems Options Help			
-----			
SAMPLE - Cross-System Work Extract			
Command ==> _____			
System Selection:		Extract Recap:	
APPLID . . . _____	+	DDname . . .	<b>CROX0001</b>
Image . . . _____	+		
Group . . . <b>MROPROD</b>	+		
Output Data Set			
Data Set Name . . .	<b>'MROPROD.CROSSWK'</b>		
Disposition . . . <b>1</b>	1. OLD	Record Compression . . <b>1</b>	1. No
	2. MOD		2. Yes
Processing Options:		Record Formatting Options:	
<b>1</b> 1. UOWs with more than one record		APPLID . .	<b>MULTIPLE</b>
2. UOWs with a single record		Image . .	<b>CICS</b>
3. All UOWs			
Selection Criteria:		Additional User Fields:	
_ Performance		_ User Fields *	
F1=Help	F3=Exit	F4=Prompt	F7=Backward F8=Forward F10=Actions
F12=Cancel			

Figure 138. Cross-System Work Extract

Use this panel to specify extract options and record selection criteria for the Cross-System Work Extract. The mandatory options are the name and disposition of the Extract Data Set, the DDname for the Recap report, and the network unit-of-work (UOW) Processing Option. You can let the other options default.

### System Selection

The APPLIDs and SMF data files that apply to this extract.

You can specify any combination of APPLID, Image, or Group, but these must be defined in your System Definitions. If you do not specify System Selection here or in the Global Options, then you are prompted at run time to specify the System Selection. This will apply globally to all reports and extracts without their own System Selection. This is recommended as it allows you to run your Report Sets against any of your defined Systems. Press the **Prompt** key (F4) to select from a list of defined Systems, Images, or Groups. To modify your System Definitions, select **Systems** in the action bar.

Specify one of the following:

- A CICS APPLID. An APPLID that matches a defined System's name pattern is also allowed. For example, CICS<sup>\*</sup> can be specified if CICS<sup>\*</sup> is a defined system.
- An APPLID and an MVS Image. This identifies the MVS Image where your CICS system runs.
- An MVS Image. All CICS systems executing on this MVS Image is selected.
- An APPLID and Image combination plus a Group. This is useful for uniquely identifying a CICS system when there are multiple CICS systems with the same name defined.
- A Group alone. CICS PA will select all CICS APPLIDs defined to the Group. For example, for transaction grouping, or for systems that connect via IRC/MRO, ISC/APPC, or IPIC.

CICS PA uses the System Selection in JCL generation to build the `APPLID(applid1,applid2,applid3,...)` and `Input(SMFIN001,SMFIN002,SMFIN003,...)` operands, and corresponding `//SMFINnnn DD` statements.

System Selection can also be specified either:

- In Global Options. The report-level specification takes precedence over the global.
- At run time. The run-time System Selection overrides the Global Options and optionally the report-level specification.

Optionally, user fields can be appended to the Cross-System Work Extract. The `APPLID` is used by CICS PA to initially populate the list of user fields which you can then modify using the **User Fields** option.

### Output Data Set

The name of the data set where the extract records are written. If CICS PA is to create the data set at run time, the default allocation attributes specified in Reporting Allocation Settings are used when generating the JCL. If the data set is already cataloged, then CICS PA will use `DISP=OLD` or `DISP=MOD` according to your request to overwrite or append to the existing data set. Alternatively, you can use a GDG to create a new data set each time the extract is run.

When generating the JCL, CICS PA assigns a default DDname **CPAOXSnn** where `nn` is a sequential number **01-99** to ensure uniqueness.

When specifying the data set name, standard TSO conventions apply. For example, if the TSO option **PROFILE PREFIX** is in effect, the prefix is appended as the high-level qualifier unless the data set name is enclosed in quotes.

### Disposition

The `DISP` value that you want the generated JCL to use for the output data set if it is already cataloged:

**OLD** Overwrites the data set contents with the new extract data.

**MOD** Appends the new extract data.

You must specify one of these dispositions regardless of whether the output data set is cataloged. If the output data set is not cataloged when CICS PA generates the JCL, then CICS PA generates the JCL using `DISP=(NEW,CATLG)` to catalog it.

### Record Compression

Select whether you want the SMF records in the extract file to be in compressed or uncompressed format. This option applies whether the records in the input SMF file are compressed or not.

If you select Yes, CICS PA writes CICS monitoring (SMF type 110, subtype 1) and OMEGAMON XE for CICS (SMF type 112) records in compressed format, regardless of the CICS release level of the input records. Other records are not compressed. Although CICS only introduced support for writing compressed SMF records in CICS Transaction Server Version 3.2, you can use CICS PA to create an extract file of compressed SMF records for any CICS release supported by CICS PA. You can use extract files containing compressed SMF records as input to CICS PA, just like any other SMF file, even though the CICS product level that originally created those SMF records cannot write them in compressed format.

Selecting this option generates the `COMPRESS` operand.

### Processing Options:

Select option **1 - UOWs with more than one record** to report only the transaction performance records whose network unit-of-work spans multiple CMF records. This is the default. This selection generates the `WRITEMultiple` operand.

Select option **2 - UOWs with a single record** to report only the transaction performance records consisting of network units-of-work that include only a single CMF record. This selection generates the `WRITESingle,NOWRITEMultiple` operand.

Select option **3 - All UOWs** to report all the transaction performance records. This selection generates the `WRITESingle,WRITEMultiple` operand.

### Record Formatting Options:

The `APPLID` and `MVS Image` that CICS PA is to write in all extract records.

CICS PA JCL generation translates the settings to the `SYSID(applid,mvsimage)` operand.

The extract records contain composite data from multiple CICS systems. For CICS PA to later process the extract file as input, you must define the file and this `APPLID/MVS Image` combination in System Definitions.

#### APPLID

The `APPLID` that CICS PA is to write in all extract records. Specify up to eight alphanumeric (A-Z,0-9) or special (@,#,\$) characters. The default is **MULTIPLE**.

**Image** The `MVS Image` that CICS PA is to write in all extract records. Specify up to four alphanumeric (A-Z,0-9) or special (@,#,\$) characters, with the first alphabetic or special. The default is **CICS**.

### Performance Selection Criteria

You can specify Selection Criteria to filter the CMF records on time period and field values to restrict reporting to the data that is of interest to you.

#### Line Actions:

- /** Display the menu of line actions.
- S** Display the subpanel where Selection Criteria can be specified for this report. For details, see “Specifying Selection Criteria” on page 156.
- A** Activate the Selection Criteria so they are generated for this report when the Report Set is submitted. Selection Criteria can only be activated if one or more Select Statements are specified and not all are excluded. An asterisk \* indicates they are active.
- D** Deactivate the Selection Criteria. Any you have specified here will not be used.

### Additional User Fields

User fields can be specified for inclusion in the Cross-System Work Extract records. CICS PA uses the specified `APPLID` to locate the MCT and initially populate the list of user fields. See Figure 139 on page 256.

**Line Actions:** The valid line actions are:

- /** Display the menu of line actions.
- S** Select to display the subpanel where user fields are specified.

When selected for the first time, an APPLID must be specified so the appropriate user fields can be found from the MCT.

- A** Activate the User Fields so they are included for this extract when the Report Set is submitted. User Fields can only be activated if at least one has been specified and not all are excluded. An asterisk \* indicates they are active.
- D** Deactivate the User Fields. Although you might have specified user fields for this extract, they will not be included when the Report Set is submitted.

## User fields for the Cross-System Work extract

To display the User Fields subpanel, enter line action **S** against User Fields on the Cross-System Work Extract panel.

File Filter Edit Options Help					
User Fields				Row 1 from 7	
Command ==> _____				Scroll ==> PAGE	
/	Exc	Dictionary	Definition	Char Length	Maximum Length
-		CLOCK1	CPAUSR1 S001	___	8
-	*	CLOCK2	CPAUSR1 S002	___	8
-		CLOCK3	CPAUSR1 S003	___	8
-		COUNT5	CPAUSR2 A005	___	4
-	*	RMIDATA	DBCTL C001	<b>256</b>	256
-		FIELD1	CPAUSR1 C001	<b>12</b>	12
-		FIELD1	CPAUSR2 C001	<b>12</b>	12
***** End of list *****					

Figure 139. Cross-System Work Extract: User Fields

This panel displays the user fields to be included in the Cross-System Work Extract record. The list of fields is initially populated by CICS PA using the specified APPLID to locate the MCT. You can change the Include/Exclude status of the fields, or delete unwanted fields, but when deleted they cannot be reinstated. You can also modify the length of character fields.

The options are:

### Exclude Indicator

An asterisk \* in this field indicates that the row is excluded and will not be included in extract processing.

Use line action **X** to reverse the Exclude indicator.

### Dictionary Definition

The description of the user field in the format *informalname owner xnnn* where:

- *informalname* is the CMF informal name for the field. This is placed in the dictionary record of the Cross-System Work Extract and can be used in subsequent reporting, for example, as the column heading.
- *owner* is the CICS component that 'owns' the field.
- *x* indicates the data type:
  - A** - 32- or 64-bit count
  - C** - character string
  - S** - clock (both Time and Count parts are extracted)





When generating the JCL, CICS PA assigns a default DDname **CPAOEXnn** where nn is a sequential number **01-99** to ensure uniqueness.

To display the Performance Extract panel, enter line action **S** against the **Performance** Extract on the Report Set panel, then if the list of previously specified extracts is displayed, enter line action **S** against a particular extract in the list.

```

File Systems Options Help
-----
                                SAMPLE - Performance Extract
Command ==> _____

System Selection:                  Extract Recap:
APPLID . . CICSP001 +             DDname . . . EXPT0001
Image . . _____ +
Group . . _____ +

Output Data Set:
Data Set Name . . 'CICSP001.EXTRACT'
Disposition . . . 1 1. OLD 2. MOD (If cataloged)

Extract Focus:                     Summary Processing Options:
Form . . . . _____ +         Interval . . . 00:01:00 (hh:mm:ss)
Alert . . . . _____ +         Override Form _____ +
Severity . . _____ +         Timestamp . . . _____ +

Extract Format:
/ Include Field Labels
_ Numeric Fields in Float format
Delimiter . . ;

Selection Criteria:                 Execution Options:
_ Performance *                     / Use External Sort

Repository . . : CPA.XYX.REPOSTRY

F1=Help      F3=Exit      F4=Prompt      F7=Backward F8=Forward F10=Actions
F12=Cancel

```

Figure 141. Performance Extract

Use this panel to specify extract options and record selection criteria for the Performance Data extract. The mandatory options are the name and disposition of the Extract data set and the DDname for the Recap report. You can let the other options default.

The Extract record has a default format which includes all the Clock fields. Report Forms (LIST, LISTX, or SUMMARY) can be used to tailor the format and content of the records.

The options are:

### System Selection

Identifies the CICS APPLIDs whose data you want to select for processing.

You can specify any combination of APPLID, Image, or Group, but these must be defined in your System Definitions. If you do not specify System Selection here or in the Global Options, then you are prompted at run time to specify the System Selection. This will apply globally to all reports and extracts without their own System Selection. This is recommended as it allows you to run your Report Sets against any of your defined Systems. Press the Prompt key (F4) to select from a list of defined Systems, Images, or Groups. To modify your System Definitions, select Systems in the action bar.



Specify one of the following:

- A CICS APPLID. An APPLID that matches a defined System's name pattern is also allowed. For example, CICSP1 can be specified if CICSP\* is a defined system.
- An APPLID and an MVS Image. This identifies the MVS Image where your CICS system runs.
- An MVS Image. All CICS systems executing on this MVS Image is selected.
- An APPLID and Image combination plus a Group. This is useful for uniquely identifying a CICS system when there are multiple CICS systems with the same name defined.
- A Group alone. CICS PA will select all CICS APPLIDs defined to the Group. For example, for transaction grouping, or for systems that connect via IRC/MRO, ISC/APPC, or IPIC.

CICS PA uses the System Selection in JCL generation to build the APPLID(applid1,applid2,applid3,...) and INput(SMFIN001,SMFIN002,SMFIN003,...) operands, and corresponding //SMFINnnn DD statements.

System Selection can also be specified either:

- In Global Options. The report-level specification takes precedence over the global.
- At run time. The run-time System Selection overrides the Global Options and optionally the report-level specification.

### Output Data Set Name

The name of the data set where the extract records are written. If CICS PA is to create the data set at run time, the default allocation attributes specified on the Reporting Allocation Settings panel are used in generating the JCL. If the data set is already cataloged, then CICS PA will use DISP=OLD or DISP=MOD according to your request to overwrite or append to the existing data set.

When generating the JCL, CICS PA assigns a default DDname **CPAOEXnn** where nn is a sequential number **01-99** to ensure uniqueness.

When specifying the data set name, standard TSO conventions apply.

### Disposition

The DISP value that you want the generated JCL to use for the output data set if it is already cataloged:

**OLD** Overwrites the data set contents with the new extract data.

**MOD** Appends the new extract data.

You must specify one of these dispositions regardless of whether the output data set is cataloged. If the output data set is not cataloged when CICS PA generates the JCL, then CICS PA generates the JCL using DISP=(NEW,CATLG) to catalog it.

**Form** The name of a Report Form to be used to tailor the type of extract and the format of the extract records. The Report Form can be a LIST, LISTX, or SUMMARY Form:

- LIST and LISTX Forms produce an extracted data file like the Performance List Report. There is no restriction on the number of fields. Note that in contrast to the report, LISTX does not produce a sorted extract. Specifying a Form of this type generates the LIST report operand.

- SUMMARY produces an extracted data file equivalent to the Performance Summary report, sorting and summarizing on specified fields, but with no restriction on the number of fields. Specifying a Form of this type generates the SUMMARY report operand.
- If a Report Form is not specified, the default extract is produced using the EXTRACTPERFORMANCE report operand.

To select the name from a list of compatible Report Forms, position the cursor on the **Form** field and press **Prompt** (F4).

CICS PA JCL generation translates the Report Form specification into the LIST(FIELDS or SUMMARY(FIELDS operand.

**Alert** The name of a Performance Alert Definition. To select from a list of predefined names, position the cursor on the Alert field and press **Prompt** (F4). CICS PA JCL generation translates the Alert specification into the ALERTDEF operand.

This option only applies when a Form is specified, otherwise, it is ignored.

### Severity

When an Alert name is specified, this suboption allows you to specify the minimum severity level to be reported and type of transactions reported.

For the List extract, the minimum severity level selected for reporting is used to report transactions that have at least that level of reporting in any of the severity fields. This could result in transactions being reported with severity lower than the specified severity when the transaction also has one or more severity fields that meets the specified severity criteria. For example, if you specify SEVERITY(CRITICAL), only transactions with Critical severity are reported, however, if a transaction also exceeds Warning or Info thresholds, the lower severity will be also reported.

Press **Prompt** (F4) to select from the list of available options which are:

#### For a List extract (ignored for Summary):

The following options only apply to a List report or extract. If specified for a Summary extract, SEVERITY(ALL) is assumed.

##### CRITICAL

Only Critical transactions are reported.

##### WARNING

Only Critical and Warning transactions are reported.

**INFO** All alerts are reported: Critical, Warning and Informational transactions.

#### For a List or Summary extract:

The following options apply to both List and Summary.

##### ELIGIBLE

Only eligible transactions are processed and reported.  
Eligible transactions are those that have resource values that match resource values specified in the alert definition.  
The resulting report will include eligible only transactions with and without alerts.

This option provides the means to filter out transactions that would never generate an alert because their resource values do not match resource values specified in the alert definition.

### **ALL or blank**

All transactions are reported regardless of whether they are eligible or whether they generate an alert. This is the default.

CICS PA JCL generation translates the Severity specification into the following operands:

#### **List extract**

SEVERITY(CRITICAL|WARNING|INFO|ELIGIBLE|ALL)

#### **Summary extract**

SEVERITY(ELIGIBLE|ALL)

### **Interval**

The time interval applies when you want to summarize transaction activity over time. It is used when you specify a SUMMARY Report Form which has any of the key fields **OSTART**, **START**, or **STOP** included. When reporting, CICS PA accumulates the data for each interval in the report period and writes a report line for each.

Specify a value in the range **00:00:01** (1 second) to **24:00:00** (24 hours). The default is **00:01:00** (1 minute).

A time interval of less than one hour must fit evenly into the hour. CICS PA will round it down to the nearest interval that aligns to the hour. For example, 1.35 is reduced to 00:01:30 minutes which will produce 40 interval report lines for each hour of data.

A time interval of more than one hour must fit evenly into the day. CICS PA will round it down to the nearest interval that aligns to the day. For example, 10.30.23 is reduced to 08:00:00 hours which will produce 3 interval report lines for each day of data.

Minutes take precedence for an abbreviated entry. For example:

**1** becomes 00:01:00

**1.1** becomes 00:01:00 (rounded down from 00:01:01)

**1.1.1** becomes 01:00:00 (rounded down from 01:01:01)

This option generates the INTERVAL(hh:mm:ss) operand.

### **Override Form**

For the Summary extract, this option specifies whether to **PREFIX**, **APPEND** or **REPLACE** the key fields specified in the Form. Based on the action in this option, JCL generation will generate the required Form key using the override option and field specified in Timestamp. Ensure that the resulting key will conform to the Summary key rules. No action will be taken if this field is blank. The Form itself is not affected, only the generated FIELDS key fields.

### **Timestamp**

Specifies the field name to override the Form key fields. Valid timestamp fields are **START**, **STOP**, and **OSTART**.

### **Include Field Labels**

Select (/) to include field labels as the first record written to the extract data set. This is the default. CICS PA JCL generation translates this to the LABELS operand.

Blank out the field if you do not want field labels written. CICS PA JCL generation translates this to the NOLABELS operand.

### Numeric Fields in Float format

Select (/) to write numeric fields in the extract in S390 FLOAT format. This only applies when you specify a Form (FIELDS operand). CICS PA JCL generation translates this to the FLOAT operand.

Specify FLOAT format if you plan to import the extract into a DB2 table. When the DB2 Load Utility is used, it will interpret all numerical fields reliably and consistently in FLOAT format.

If FLOAT is not specified, the numeric fields are written in a mixture of integer, real and exponential using character digits. This is the default and is suitable when importing the extract data into a PC spreadsheet tool.

### Delimiter

The field delimiter used to separate each data field in the extract records. The default is a semicolon (;).

CICS PA JCL generation translates this to DELIMIT('delimiter'). Note that the value is enclosed in quotes in this operand.

### Performance Selection Criteria

You can specify Selection Criteria to filter the CMF records on time period and field values to restrict the extract to the data that is of interest to you. CICS PA JCL generation translates Selection Criteria to the SELECT(PERFORMANCE operand.

If you specify a Report Form that also has Selection Criteria specified, CICS PA JCL generation translates the Form's Selection Criteria to the SELECT2(PERFORMANCE operand. If both the report and the Form specify Selection Criteria, then a record must pass selection by both specifications to be included in the extract.

#### *Line Actions:*

- /      Display the menu of line actions.
- S      Display the subpanel where Selection Criteria can be specified for this report. For details, see "Specifying Selection Criteria" on page 156.
- A      Activate the Selection Criteria so they are generated for this report when the Report Set is submitted. Selection Criteria can only be activated if one or more Select Statements are specified and not all are excluded. An asterisk \* indicates they are active.
- D      Deactivate the Selection Criteria. Any you have specified here will not be used.

### Use External Sort

Select / to use an external sort utility to process Summary records. This is the default. It generates the **EXTERNAL(ddname)** operand. This provides the DDname of the work data set used by the external sort utility. CICS PA assigns an External Work File from a pool of External Work Files with default DDnames in the format **CPAXWnnn** where nnn is a sequential number **001-999** to uniquely identify the work file.

An external sort should be used when processing large volumes of data.

If not selected, an internal sort is used.

### Repository

The data set name of the Repository that contains the Performance Alert Definitions.

## Record Selection extract

The Record Selection Extract is a facility that allows you to create a small extract file containing only the records of interest to you. The extract file can then be used as input to CICS PA, allowing more efficient reporting.

The Record Selection Extract filters large SMF Files, writing only SMF records that match the following criteria:

- CICS, DB2, MQ, and Logger System Selection
- Selected record types, being any of:
  - Performance
  - Exception
  - Resource
  - Statistics (includes CICS TG statistics from SMF type 111 records)
  - OMEGAMON
  - DB2
  - WebSphere MQ
  - System Logger
  - Identity
- Performance Selection Criteria
- Exception Selection Criteria
- Logger Selection Criteria
- Run-time SMF reporting interval

A Recap report containing processing statistics is always printed at the end of extract processing.

To request the extract, enter line action **S** against the **Record Selection** Extract on the Report Set panel. If extracts of this type have been previously specified, the list of Record Selection Extracts is displayed. Otherwise, the Record Selection Extract panel is displayed for you to define your first one.

```
File Filter Edit Systems Options Help
-----
SAMPLE - Record Selection Extracts                               Row 1 from 2
Command ==> _____ Scroll ==> _____

---- System Selection -----
/ Exc  APPLID + Image + Group +      Recap  Performance  Exception  Logger
-      CICSP001 _____ RSEL0001   NO          NO          NO
      Output Data Set . . 'CICSP001.DB2P.RECSEL'

-----
-      DEVT _____ MVS1 _____ RSEL0002   YES          NO          NO
      Output Data Set . . 'DEVTMVS1.RECSEL'

-----
***** End of list *****
```

Figure 142. Record Selection Extracts

This panel displays the list of Record Selection Extracts in this Report Set. You can select (edit), delete, or include/exclude any extract, insert new ones, or rearrange them (move/copy).

The options and line actions are the same as on the Cross-System Work Extracts panel. See “Cross-System Work extract” on page 250.

To display the Record Selection Extract panel, enter line action **S** against the **Record Selection** Extract in the Report Set panel, then if the list of previously specified extracts is displayed, enter line action **S** against a particular one in the

list.

```
File Systems Options Help
-----
SAMPLE - Record Selection Extract
Command ==> _____

System Selection:
CICS APPLID . . CICS001 + Image . . _____ + Group . . _____ +
DB2 SSID . . . _____ + Image . . _____ + Group . . _____ +
MQ SSID . . . _____ + Image . . _____ + Group . . _____ +
Logger . . . . _____ + Image . . _____ + Group . . _____ +

Required CICS Record Types:          Extract Recap:
/ Performance      - Exception      DDname . . . RSEL0001
- Resource         - Statistics
- OMEGAMON         - DB2
- WebSphere MQ     - System Logger
- Identity

Output Data Set:
Data Set Name . . 'CICS001.DB2P.RECSEL'
Disposition . . . 1 1. OLD      Record Compression . . 1 1. No
                  2. MOD                2. Yes

Selection Criteria:
- Performance
- Exception

Logger Selection Criteria:
- Logger
- Logstream Name . . . _____
- Structure Name . . . _____
F1=Help    F3=Exit    F4=Prompt    F7=Backward    F8=Forward    F10=Actions
F12=Cancel
```

Figure 143. Record Selection Extract

Use this panel to specify extract options and record selection criteria for the Record Selection extract. The mandatory options are the name and disposition of the Extract Data Set and the DDname for the Recap report. You can let the other options default, although it is recommended that you specify Selection Criteria to reduce the volume of data.

The options are:

### System Selection

#### CICS APPLID

Identifies the CICS APPLIDs whose data you want to select for processing.

You can specify any combination of APPLID, Image, or Group, but these must be defined in your System Definitions. If you do not specify System Selection here or in the Global Options, then you are prompted at run time to specify the System Selection. This will apply globally to all reports and extracts without their own System Selection. This is recommended as it allows you to run your Report Sets against any of your defined Systems. Press the Prompt key (F4) to select from a list of defined Systems, Images, or Groups. To modify your System Definitions, select Systems in the action bar.

Specify one of the following:

- A CICS APPLID. An APPLID that matches a defined System's name pattern is also allowed. For example, CICS001 can be specified if CICS00\* is a defined system.

- An APPLID and an MVS Image. This identifies the MVS Image where your CICS system runs.
- An MVS Image. All CICS systems executing on this MVS Image is selected.
- An APPLID and Image combination plus a Group. This is useful for uniquely identifying a CICS system when there are multiple CICS systems with the same name defined.
- A Group alone. CICS PA will select all CICS APPLIDs defined to the Group. For example, for transaction grouping, or for systems that connect via IRC/MRO, ISC/APPC, or IPIC.

CICS PA uses the System Selection in JCL generation to build the APPLID(applid1,applid2,applid3,...) and INput(SMFIN001,SMFIN002,SMFIN003,...) operands, and corresponding //SMFINnnn DD statements.

System Selection can also be specified either:

- In Global Options. The report-level specification takes precedence over the global.
- At run time. The run-time System Selection overrides the Global Options and optionally the report-level specification.

## DB2 SSID

The DB2 Subsystems and SMF data files you want processed. The Record Selection extract processes DB2 101 accounting records only if they are part of a CICS thread, and will only process these if you specify the DB2 SSID(s). Any combination of SSID, Image, or Group can be specified but must be defined in System Definitions. You can type them in directly or select from a list of available SSIDs by using **Prompt** (F4). To link directly to System Definitions, select **Systems** in the action bar.

Specify either:

- A DB2 SSID.
- An SSID for a particular Image. This identifies the MVS Image where your DB2 Subsystem runs.
- An Image. CICS PA will report on all DB2 SSIDs running on this Image using the SMF files defined for the Image.
- An SSID and Image combination plus a Group. This is useful for uniquely identifying DB2 Subsystems when there is more than one of the same name defined in System Definitions.
- A Group alone. CICS PA will report on all SSID and Image combinations in the Group to produce a single consolidated report.

CICS PA uses the DB2 System Selection in JCL generation to build the SSID(ssid1,ssid2,ssid3,...) and INput(SMFIN001,SMFIN002,SMFIN003,...) operands, and corresponding //SMFINnnn DD statements.

DB2 System Selection can also be specified as a global option. The report-level specification takes precedence over the global. When you submit your Report Set, you can also specify DB2 System Selection at that time and it takes precedence over the global for that run only.



## MQ SSID

The WebSphere MQ Subsystems and SMF data files you want processed. The Record Selection extract processes MQ 116 accounting records only if they are part of a CICS thread, and will only process these if you specify the MQ SSID(s). Any combination of SSID, Image, or Group can be specified but must be defined in System Definitions. You can type them in directly or select from a list of available SSIDs by using **Prompt** (F4). To link directly to System Definitions, select **Systems** in the action bar.

Specify either:

- An MQ SSID.
- An SSID for a particular Image. This identifies the MVS Image where your MQ Subsystem runs.
- An Image. CICS PA will report on all MQ SSIDs running on this Image using the SMF files defined for the Image.
- An SSID and Image combination plus a Group. This is useful for uniquely identifying MQ Subsystems when there is more than one of the same name defined in System Definitions.
- A Group alone. CICS PA will report on all SSID and Image combinations in the Group to produce a single consolidated report.

CICS PA uses the MQ System Selection in JCL generation to build the SSID(ssid1,ssid2,ssid3,...) and INput(SMFIN001,SMFIN002,SMFIN003,...) operands, and corresponding //SMFINnnn DD statements.

MQ System Selection can also be specified as a global option. The report-level specification takes precedence over the global. When you submit your Report Set, you can also specify MQ System Selection at that time and it takes precedence over the global for that run only.

## Logger

The MVS System Loggers and associated SMF data files that you want to report against. Any combination of Logger, Image, or Group can be specified but must be defined in System Definitions. You can type them in directly or use **Prompt** (F4) to select from a list. To link directly to System Definitions, select **Systems** in the action bar.

Specify either:

- A Logger.
- A Logger for a particular Image. This identifies a particular System Logger when there is more than one with the same ID.
- An Image. CICS PA will report on all systems running on this Image using the SMF files defined for the Image.
- A Logger and Image combination plus a Group. This is useful for uniquely identify a system when there is more than one of the same name defined in System Definitions.
- A Group alone. CICS PA will report on all system and Image combinations in the Group to produce a single consolidated report.



CICS PA uses the Logger System Selection in JCL generation to build the INPUT(SMFIN001,SMFIN002,SMFIN003,...) operand and corresponding //SMFINnnn DD statements. It also generates the LOGGER operand to request Logger records for the extract.

Logger System Selection can also be specified as a global option. The report-level specification takes precedence over the global. When you run your Report Set, you can also specify Logger System Selection at run time to override the global and optionally the report-level specification.

### Required CICS Record Types

Enter / to select the combination of record types that you want included in the extract.

Note that APPLIDs, DB2 SSIDs, MQ SSIDs, and Logger data are included in the extract according to your specified System Selection.

### Extract Recap DDname

The DDname for the Recap report which prints at the end of extract processing to provide processing statistics. The DDname is mandatory.

CICS PA assigns a default DDname **RSELnnnn** where nnnn is a sequential number **0001-9999** to ensure each Recap report has a unique DDname.

This option generates the OUTPUT(ddname) operand.

### Output Data Set

The name of the data set where the extract records are written. When specifying the data set name, standard TSO conventions apply.

If CICS PA is to create the data set at run time, the default allocation attributes specified on the Reporting Allocation Settings panel are used in generating the JCL. If the data set is already cataloged, then CICS PA will use DISP=OLD or DISP=MOD according to your request to overwrite or append to the existing data set.

CICS PA generates the DDNAME(ddname) operand and assigns a default DDname **CPAORSnn** where nn is a sequential number **01-99** to ensure uniqueness.

### Disposition

The DISP value that you want the generated JCL to use for the output data set if it is already cataloged:

**OLD** Overwrites the data set contents with the new extract data.

**MOD** Appends the new extract data.

You must specify one of these dispositions regardless of whether the output data set is cataloged. If the output data set is not cataloged when CICS PA generates the JCL, then CICS PA generates the JCL using DISP=(NEW,CATLG) to catalog it.

### Record Compression

Select whether you want the SMF records in the extract file to be in compressed or uncompressed format. This option applies whether the records in the input SMF file are compressed or not.

If you select Yes, CICS PA writes CICS monitoring (SMF type 110, subtype 1) and OMEGAMON XE for CICS (SMF type 112) records in compressed format, regardless of the CICS release level of the input records. Other records are not compressed. Although CICS only introduced support for writing compressed SMF records in CICS Transaction Server Version 3.2,

you can use CICS PA to create an extract file of compressed SMF records for any CICS release supported by CICS PA. You can use extract files containing compressed SMF records as input to CICS PA, just like any other SMF file, even though the CICS product level that originally created those SMF records cannot write them in compressed format.

Selecting this option generates the COMPRESS operand.

#### Selection Criteria

To filter data for Performance, Resource Class, Statistics, DB2, MQ, Identity and Omegamon record selection, specify **Performance** Selection Criteria.

To filter data for Exception Class record selection, specify **Exception** Selection Criteria.

To filter data for System Logger record selection, specify any combination of **Logger** Selection Criteria, **Logstream Name**, and **Structure Name**.

Selection Criteria are not applicable to Statistics records.

#### Line Actions:

- /      Display the menu of line actions.
- S**      Display the subpanel where Selection Criteria can be specified for this report. For details, see “Specifying Selection Criteria” on page 156.
- A**      Activate the Selection Criteria so they are generated for this report when the Report Set is submitted. Selection Criteria can only be activated if one or more Select Statements are specified and not all are excluded. An asterisk \* indicates they are active.
- D**      Deactivate the Selection Criteria. Any you have specified here will not be used.

## HDB Load

The HDB Load is a facility that loads SMF data into a Historical Database (HDB). This same facility is available from Primary Menu option 5 Historical Database. However, from Report Sets you have the advantages of:

- Reports and HDB Load in the one job
- Multiple load requests supported in the one job
- One pass of the data

A Recap report containing processing statistics is always printed at the end of load processing.

To request HDB Load, enter line action **S** against **HDB Load** in the **Extracts** category on the Report Set panel. If HDB Loads have been previously specified in this Report Set, the list of them is displayed. Otherwise, the HDB Load panel is displayed for you to request your first one.

```

File  Filter  Edit  Systems  Options  Help
-----
                                SAMPLE - HDB Loads                                Row 1 from 1
Command ==> _____ Scroll ==> _____

      ---- System Selection ----
/  Exc  APPLID + Image + Group + Recap      HDB +
_      CICSP001 _____ HDBL0001 LISTHDB_
***** Bottom of data *****

```

Figure 144. HDB Loads

This panel displays the list of HDB Load requests in this Report Set. You can select (edit), delete, or include/exclude any in the list, insert new ones, or rearrange them (move/copy).

The options and line actions are the same as on the Cross-System Work Extracts panel, except Selection Criteria and Output Data Set are not applicable here. See “Cross-System Work extract” on page 250.

The default DDname for the Recap report output is **HDBLnnnn** where nnnn is a sequential number **0001-9999** to ensure uniqueness.

The default DDname for the Repository is **CPAHDBRG**. Specify the name of the HDB to be loaded. Press **Prompt** (F4) to select from a list of HDBs in the current Repository.

To display the HDB Load panel, enter line action **S** to select from the list.

```

File  Systems  Options  Help
-----
                                SAMPLE - HDB Load
Command ==> _____

System Selection:                                Extract Recap:
APPLID . . _____ +                        DDname . . . HDBL0001
Image  . . _____ +
Group  . . _____ +

Historical Database:
HDB . . . . . #LIST01_ +
Repository . . : CICSPA.XYX.REPOSTRY

DB2 Export Options:                                Table Load Options
_ Load DB2 Table                                1 1. Resume  2. Replace

Include Clock Field Components                    Summary Options
1 1. Time and Count                                _ Include Sums of Squares
_ 2. Time only
  3. Count only

F1=Help      F3=Exit      F4=Prompt      F7=Backward  F8=Forward  F10=Actions
F12=Cancel

```

Figure 145. HDB Load

Use this panel to specify the load options, including system selection, the name of the HDB in the current repository, and the DDname for the Recap report.

Specify the systems that you want to analyze. The systems and files must be defined in System Definitions. You can link directly there by selecting Systems in

the action bar. It is recommended that you specify your System Selection at run time, not within the Report Set. This will allow you to load data from any of your defined systems.

To run the load, enter the RUN command.

The options are:

### System Selection

#### CICS APPLID

Identifies the CICS APPLIDs whose data you want to select for processing.

You can specify any combination of APPLID, Image, or Group, but these must be defined in your System Definitions. If you do not specify System Selection here or in the Global Options, then you are prompted at run time to specify the System Selection. This will apply globally to all reports and extracts without their own System Selection. This is recommended as it allows you to run your Report Sets against any of your defined Systems. Press the Prompt key (F4) to select from a list of defined Systems, Images, or Groups. To modify your System Definitions, select Systems in the action bar.

Specify one of the following:

- A CICS APPLID. An APPLID that matches a defined System's name pattern is also allowed. For example, CICS\* can be specified if CICS\* is a defined system.
- An APPLID and an MVS Image. This identifies the MVS Image where your CICS system runs.
- An MVS Image. All CICS systems executing on this MVS Image is selected.
- An APPLID and Image combination plus a Group. This is useful for uniquely identifying a CICS system when there are multiple CICS systems with the same name defined.
- A Group alone. CICS PA will select all CICS APPLIDs defined to the Group. For example, for transaction grouping, or for systems that connect via IRC/MRO, ISC/APPC, or IPIC.

CICS PA uses the System Selection in JCL generation to build the `APPLID(applid1,applid2,applid3,...)` and `INput(SMFIN001,SMFIN002,SMFIN003,...)` operands, and corresponding `//SMFINnnn DD` statements.

System Selection can also be specified either:

- In Global Options. The report-level specification takes precedence over the global.
- At run time. The run-time System Selection overrides the Global Options and optionally the report-level specification.

#### Extract Recap DDname

The DDname for the Recap report which prints at the end of load processing to provide processing statistics. The DDname is mandatory.

CICS PA assigns a default DDname **HDBLnnnn** where nnnn is a sequential number **0001-9999** to ensure each Recap report has a unique DDname.

This option generates the `OUTPUT(ddname)` operand.

## Historical Database

Specify the name of the HDB you want to load with SMF data. Press **Prompt** (F4) to select an HDB from the current repository.

The current repository is specified in option 5 **Historical Database** from the Primary Option Menu.

## DB2 Export Options

To export the data to DB2 directly after loading it into the HDB, select the Load DB2 Table option. For details of the JCL that this option generates, see "Load JCL" on page 658. (The remaining DB2 export options are only relevant if you select the Load DB2 Table option.)

The DB2 table to which you are exporting must already be defined.

To define a DB2 table, see "Creating DDL to define a DB2 table" on page 673.

If you select **2. Replace** for Table Load Options and the HDB load fails, then the result is an empty DB2 table.

## System Logger extract

A System Logger Extract is created as a delimited text file for the purpose of importing System Logger data into PC spreadsheet tools or database tools (such as DB2) for further detailed analysis and reporting.

A Recap report containing processing statistics is always printed at the end of extract processing.

To request the extract, enter line action **S** against the **System Logger** Extract on the Report Set panel. If extracts of this type have been previously specified, the list of System Logger Extracts is displayed. Otherwise, the System Logger Extract panel is displayed for you to define your first extract of this type.

File Filter Edit Systems Options Help

SAMPLE - System Logger Extracts Row 1 from 1

Command ==> Scroll ==>

----

System Selection

----

/

Exc

Logger +

Image +

Group +

Output

Selection

Criteria

-

CICSP001

MVS1

LOEX0001

NO

Output Data Set . . 'CICSP001.EXTRACT'

\*\*\*\*\* End of list \*\*\*\*\*

Figure 146. System Logger Extracts

This panel displays the list of System Logger Extracts in this Report Set. You can select (edit), delete, or include/exclude any extract, insert new ones, or rearrange them (move/copy).

The options are:

### System Selection

System Selection identifies the System Logger(s) and associated SMF files you want to report against. Any combination of Logger, Image, or Group

can be specified but must be defined in System Definitions. You can use **Prompt** (F4) to select from a list. To link directly to System Definitions, select **Systems** in the action bar.

Specify either:

- A Logger.
- A Logger for a particular Image. This identifies a particular System Logger when there is more than one with the same ID.
- An Image. CICS PA will report on all systems running on this Image using the SMF files defined for the Image.
- A Logger and Image combination plus a Group. This is useful to uniquely identify a system when there is more than one of the same name defined in System Definitions.
- A Group alone. CICS PA will report on all System and Image combinations in the Group to produce a single consolidated report.

CICS PA uses the System Selection in JCL generation to build the INput (SMFIN001,SMFIN002,SMFIN003,...) operand and corresponding //SMFINnnn DD statements.

## Output

CICS PA provides a default **Recap Report Output DDname** in the format **LOEXnnnn** where nnnn is **0001-9999**.

The line actions are the same as on similar Reports list panels. See “Performance List report” on page 170.

To display the System Logger Extract panel, enter line action **S** against the **System Logger** Extract on the Report Set panel, then if the list of previously specified extracts is displayed, enter line action **S** against a particular extract in the list.

File Systems Options Help

---

SAMPLE - System Logger Extract

---

Command ==>

---

System Selection:

Report Output:

Logger . . CICSPO01 +

Image . . MVS1\_\_\_\_\_ +

Group . . \_\_\_\_\_ +

DDname . . . . . LOEX0001

Output Data Set:

Data Set Name . . 'CICSPO01.EXTRACT'

Disposition . . . 1 1. OLD 2. MOD (If cataloged)

Extract Format:

Delimiter . . ;

Enter "/" to select option

/ Include Field Labels

\_ Numeric Fields in Float format

Selection Criteria:

- Logger

Logstream Name . . .

Structure Name . . .

Figure 147. System Logger Extract

Use this panel to specify extract options and record selection criteria for the System Logger extract. The mandatory options are the name and disposition of the Extract data set and the DDname for the Recap report. You can let the other options default. The extract format is fixed.

The options are:

### System Selection

System Selection identifies the System Logger(s) and associated SMF files you want to report against. Any combination of Logger, Image, or Group can be specified but must be defined in System Definitions. You can use **Prompt** (F4) to select from a list. To link directly to System Definitions, select **Systems** in the action bar.

Specify either:

- A Logger.
- A Logger for a particular Image. This identifies a particular System Logger when there is more than one with the same ID.
- An Image. CICS PA will report on all systems running on this Image using the SMF files defined for the Image.
- A Logger and Image combination plus a Group. This is useful to uniquely identify a system when there is more than one of the same name defined in System Definitions.
- A Group alone. CICS PA will report on all System and Image combinations in the Group to produce a single consolidated report.

CICS PA uses the System Selection in JCL generation to build the `INput (SMFIN001,SMFIN002,SMFIN003,...)` operand and corresponding `//SMFINnnn DD` statements.

### Data Set Name

The name of the data set where the extract records are written. If CICS PA is to create the data set at run time, the default allocation attributes specified on the Reporting Allocation Settings panel are used in generating the JCL. If the data set is already cataloged, then CICS PA will use `DISP=OLD` or `DISP=MOD` according to your request to overwrite or append to the existing data set.

When generating the JCL, CICS PA assigns a default DDname **CPAOLEnn** where nn is a sequential number **01-99** to ensure uniqueness.

When specifying the data set name, standard TSO conventions apply.

### Disposition

The `DISP` value that you want the generated JCL to use for the output data set if it is already cataloged:

**OLD** Overwrites the data set contents with the new extract data.

**MOD** Appends the new extract data.

You must specify one of these dispositions regardless of whether the output data set is cataloged. If the output data set is not cataloged when CICS PA generates the JCL, then CICS PA generates the JCL using `DISP=(NEW,CATLG)` to catalog it.

### Delimiter

The field delimiter used to separate each data field in the extract records. The default is a semicolon (;).

CICS PA JCL generation translates this to `DELIMIT('delimiter')`. Note that the value is enclosed in quotes in this operand.

### Include Field Labels

Select (/) to include field labels as the first record written to the extract data set. This is the default. CICS PA JCL generation translates this to the `LABELS` operand.

Blank out the field if you do not want field labels written. CICS PA JCL generation translates this to the NOLABELS operand.

#### **Numeric Fields in Float format**

Select (/) to write numeric fields in the extract in S390 FLOAT format. CICS PA JCL generation translates this to the FLOAT operand.

Specify FLOAT format if you plan to import the extract into a DB2 table. When the DB2 Load Utility is used, it will interpret all numerical fields reliably and consistently in FLOAT format.

If FLOAT is not specified, the numeric fields are written in a mixture of integer, real and exponential using character digits. This is the default and is suitable when importing the extract data into a PC spreadsheet tool.

#### **Selection Criteria**

To specify Selection Criteria to filter the System Logger records on time period and other field values, enter S next to **Logger**.

*Line Actions:* Valid line actions are:

- / Display the menu of line actions.
- S Select to display the subpanel where Selection Criteria for this extract can be specified. See "Specifying Selection Criteria" on page 156 for a discussion on how to do this.
- A Activate the Selection Criteria so they are generated for this extract when the Report Set is submitted. Selection Criteria can only be activated if one or more Select Statements are specified and not all are excluded. An asterisk \* indicates they are active.
- D Deactivate the Selection Criteria. Any you have specified here will not be used.

CICS PA JCL generation translates Selection Criteria to the SELECT(LOGGER operand).

Optionally, specify the **Logstream Name** and **Structure Name** patterns to be reported. Masking characters % and \* are allowed. Examples of possible patterns are:

**TEST.DFHLOG**

which must match exactly

**PROD.\***

which can match PROD.DFHLOG

**PROD.MVSA%**

which can match PROD.MVSA1, but not PROD.MVSA1LOG

These options generate the LOGSTREAM('name.or.pattern') and STRUCTURE('name.or.pattern') operands.

## **Statistics extract**

A Statistics Extract is created as a delimited text file for the purpose of importing CICS statistics into PC spreadsheet or database tools for further detailed analysis and reporting.

A Recap report containing processing statistics is always printed at the end of extract processing.



To request the extract, enter line action **S** against the **Statistics** Extract on the Report Set panel. If extracts have been previously specified, the list of Statistics Extracts is displayed. Otherwise, the Statistics Extract panel is displayed for you to define your first one.

```

File  Filter  Edit  Systems  Options  Help
-----
                                SAMPLE - Statistics Extracts                                Row 1 from 2
Command ==> _____ Scroll ==> _____

      ---- System Selection ----
/ Exc  APPLID + Image + Group +      Recap
      CICSP001 _____      STEX0001
-      Output Data Set Prefix . . 'CICSP001.EXTRACT' _____

-----
      DEVT _____ MVS1 _____      STEX0002
-      Output Data Set Prefix . . 'DEVTMVS1.EXTRACT' _____

-----
***** Bottom of data *****

```

Figure 148. Statistics Extracts

This panel displays the list of Statistics Extracts in this Report Set. You can select (edit), delete, or include/exclude any extract, insert new ones, or rearrange them (move/copy).

The options and line actions are the same as on the Cross-System Work Extracts panel (see “Cross-System Work extract” on page 250), except that there are no selection criteria, and that, here, you specify a prefix for the output data set name, rather than the complete name.

To display the Statistics Extract panel, enter line action **S** against the **Statistics** Extract on the Report Set panel, then if the list of previously specified extracts is displayed, enter line action **S** against a particular extract in the list.

```

File  Systems  Options  Help
-----
                                SAMPLE - Statistics Extract
Command ==> _____

System Selection:                                Extract Recap:
APPLID . . CICSP001 +                                DDname . . . STEX0001
Image . . _____ +
Group . . _____ +

Statistics Reports:
_ Select to specify Statistics Reports

Output Data Set:
Data Set Name Prefix . . 'CICSP001.EXTRACT' _____
Disposition . . . . . 1 1. OLD 2. MOD (If cataloged)

Extract Format:                                Enter "/" to select option
Delimiter . . ;                                / Include Field Labels

Filter Criteria:
Type . . . . . / EOD / INT / USS / REQ / RRT

F1=Help      F3=Exit      F4=Prompt      F7=Backward  F8=Forward  F10=Actions
F12=Cancel

```

Figure 149. Statistics Extract

Use this panel to specify extract options and interval types for the Statistics extract. The mandatory options are the prefix and disposition of the Extract data set, the DDname for the Recap report, and the selection of statistics reports that you want to extract. You can let the other options default.

The format of each extract depends on the statistics reports that you select.

The options are:

### System Selection

Identifies the CICS APPLIDs whose data you want to select for processing.

You can specify any combination of APPLID, Image, or Group, but these must be defined in your System Definitions. If you do not specify System Selection here or in the Global Options, then you are prompted at run time to specify the System Selection. This will apply globally to all reports and extracts without their own System Selection. This is recommended as it allows you to run your Report Sets against any of your defined Systems. Press the Prompt key (F4) to select from a list of defined Systems, Images, or Groups. To modify your System Definitions, select Systems in the action bar.

Specify one of the following:

- A CICS APPLID. An APPLID that matches a defined System's name pattern is also allowed. For example, CICSP1 can be specified if CICSP\* is a defined system.
- An APPLID and an MVS Image. This identifies the MVS Image where your CICS system runs.
- An MVS Image. All CICS systems executing on this MVS Image is selected.
- An APPLID and Image combination plus a Group. This is useful for uniquely identifying a CICS system when there are multiple CICS systems with the same name defined.
- A Group alone. CICS PA will select all CICS APPLIDs defined to the Group. For example, for transaction grouping, or for systems that connect via IRC/MRO, ISC/APPC, or IPIC.

CICS PA uses the System Selection in JCL generation to build the `APPLID(applid1,applid2,applid3,...)` and `INput(SMFIN001,SMFIN002,SMFIN003,...)` operands, and corresponding `//SMFINnnn DD` statements.

System Selection can also be specified either:

- In Global Options. The report-level specification takes precedence over the global.
- At run time. The run-time System Selection overrides the Global Options and optionally the report-level specification.

### Statistics Reports

To specify the statistics reports that you want to extract, enter a non-blank character next to **Select to specify Statistics Reports**. A list panel of CICS statistics report titles appears. Enter line action **A** next to the reports that you want to extract, and then press **Exit** (F3). An asterisk appears next to **Select to specify Statistics Reports**, indicating that you have selected reports.

### Output Data Set Name Prefix

The prefix for the data set names where the extract records are written. If

CICS PA is to create the data set at run time, the default allocation attributes specified on the Reporting Allocation Settings panel are used in generating the JCL. If the data set is already cataloged, then CICS PA will use DISP=OLD or DISP=MOD according to your request to overwrite or append to the existing data set. When generating the JCL:

- CICS PA fully qualifies the extract data set name by appending to this prefix STTSxxxx for CICS Transaction Server (TS) statistics or STTGxxxx for CICS Transaction Gateway (TG) statistics, where xxxx is the statistics ID.
- CICS PA assigns the corresponding default DDname TSxxxxnm or TGxxxxnm, where nm is a 2-digit sequence number that ensures each DDname is unique.

When specifying the data set name prefix, standard TSO conventions apply.

### Disposition

The DISP value that you want the generated JCL to use for the output data set if it is already cataloged:

**OLD** Overwrites the data set contents with the new extract data.

**MOD** Appends the new extract data.

You must specify one of these dispositions regardless of whether the output data set is cataloged. If the output data set is not cataloged when CICS PA generates the JCL, then CICS PA generates the JCL using DISP=(NEW,CATLG) to catalog it.

### Delimiter

The field delimiter used to separate each data field in the extract records. The default is a semicolon (;).

CICS PA JCL generation translates this to DELIMIT('delimiter'). Note that the value is enclosed in quotes in this operand.

### Include Field Labels

Select (/) to include field labels as the first record written to the extract data set. This is the default. CICS PA JCL generation translates this to the LABELS operand.

Blank out the field if you do not want field labels written. CICS PA JCL generation translates this to the NOLABELS operand.

### Filter Criteria

To limit the types of CICS statistics intervals that CICS PA extracts, enter / next to the types you are interested in:

**EOD** End-of-day

**REQ** Requested

**USS** Unsolicited

**INT** Interval

**RRT** Requested reset

---

## Running Report Sets

To produce reports and extracts, submit them for batch processing by entering the RUN command (or SUBmit or JCL) in any of the following ways:

1. As a line action against a Report Set on the Report Sets list panel. See the example in Figure 150 on page 278. This runs the (saved) Report Set.
2. As a command or selecting **File->Run** in the action bar on the Edit/View Report Set panel. See the example in Figure 152 on page 279. This runs the

displayed (not saved) Report Set. That is, runs all the active reports in the active report categories, including any with the RUN line action.

3. As a line action against report categories or reports on the Edit/View Report Set panel. This runs the requested (not saved) report categories and reports.
  - The RUN line action against a report runs the report regardless of its Active status.
  - The RUN line action against a report category runs all active reports in the category regardless of the Active status of the category.
4. As a command or by selecting **File->Run** in the action bar on the individual Report panel. This runs the displayed (not saved) Report.

The **RUN** command (or **SUBmit** or **JCL**) triggers the display of the Run Report Set panel where you can specify run-time options. You can then elect to submit the job immediately (**SUBmit**) or edit the JCL before submit (**JCL**). See Figure 156 on page 290 for an example of the JCL Edit panel.

In the following example, the RUN line action is a request to run the DAILY Report Set. This will run the active reports in active categories with Global Options and any active Selection Criteria.

File Systems Confirm Options Help
Report Sets
Row 1 to 4 of 4

Command ==> \_\_\_\_\_
Scroll ==> PAGE

Report Sets Data Set . . : xxxx.CICSPA.RSET

/	Name	Description	Changed	ID
	BTS1	BTS Report	2005/01/01 00:00	CICSPA
<b>RUN</b>	DAILY	Daily CMF Reports	2005/01/01 00:00	CICSPA
	EXCEPT1	Exception Reports	2005/01/01 00:00	CICSPA
	WEEKLY	Weekly CMF Reports	2005/01/01 00:00	CICSPA

\*\*\*\*\* End of list \*\*\*\*\*

*Figure 150. RUN Report Set from the Report Sets list*

In the following example, the RUN line actions will run the Performance List and Wait Analysis reports with Global Options. Note that Global Options are always submitted with the reports regardless of the Active setting.

```

File Systems Confirm Options Help
-----
EDIT                               Report Set - REPORT2
Command ==> _____ Scroll ==> PAGE

Description . . . . Demonstration Report Set_____

Enter "/" to select action.

---      ** Reports **                      Active
-   -   Options                          No
      -   Global                          No
-   -   Selection Criteria                 No
      -   Performance                     No
      -   Exception                       No
-   -   Performance Reports               No
      -   RUN List                        No
      -   List Extended                   No
      -   Summary                         No
      -   Totals                          No
      -   RUN Wait Analysis                No
      -   Transaction Profiling            No
      -   Cross-System Work                No
      -   Transaction Group                No
      -   BTS                             No
      -   Workload Activity                No
      -   Transaction Tracking List        No
      -   Transaction Tracking Summary     No
+   -   Transaction Resource Usage Reports No
+   -   Statistics Reports                 No
+   -   Subsystem Reports                  No
+   -   System Reports                     No
+   -   Extracts                          No
      -   ** End of Reports **

```

Figure 151. RUN reports from Edit Report Set

In the following example, the RUN command will run the Exception List and Exception Summary reports with Global Options and Global Exception Selection Criteria.

```

File Systems Confirm Options Help
-----
EDIT                               Report Set - EXCEPT1      Row 1 of 14
Command ==> RUN_____ Scroll ==> PAGE

Description . . . . Exception Reports_____

Enter "/" to select action.

---      ** Reports **                      Active
-   -   Options                          Yes
      -   Global                          Yes
-   -   Selection Criteria                 Yes
      -   Performance                     No
      -   Exception                       Yes
+   -   Performance Reports               No
-   -   Exception Reports                 Yes
      -   List                           Yes
      -   Summary                         Yes
+   -   Transaction Resource Usage Reports No
+   -   Statistics Reports                 No
+   -   Subsystem Reports                  No
+   -   System Reports                     No
+   -   Extracts                          No
      -   ** End of Reports **

```

Figure 152. RUN Report Set from Edit Report Set

In the following example, the RUN command will run the Performance List report with Global Options.

```
File Systems Options Help
-----
                                SAMPLE - Performance List Report
Command ==> RUN _____

System Selection:                Report Output:
APPLID . . CICSPO01  +          DDname . . . . . LIST0001
Image  . . _____ +          Print Lines per Page . . ____ (1-255)
Group  . . _____ +

Report Focus:
Form . . . TRANLIST +
Alert  . . _____ +
Severity _____ +

Report Options:
Title  . . _____
_____

Selection Criteria:
_ Performance *

Repository . . : CPA.XYX.REPOSTRY
```

Figure 153. RUN report from Edit Report

## Set run-time options

The Run Report Set panel is always displayed after **RUN**, **SUB** or **JCL** is requested but before JCL generation commences. This prompts you for Report Set submission options which allow you to:

- Specify System Selection
- Filter input records based on their SMF time stamp
- Nominate the remedial action you want CICS PA to take if there are missing files for JCL generation

```

File Systems Options Help
-----
Run Report Set REPORT1
Command ==> _____

Specify run Report Set submission options then press Enter to continue submit.

System Selection:
CICS APPLID . . _____ + Image . . _____ + Group . . _____ +
DB2 SSID . . . _____ + Image . . _____ + Group . . _____ +
MQ SSID . . . _____ + Image . . _____ + Group . . _____ +
Logger . . . . _____ + Image . . _____ + Group . . _____ +

_ Override System Selections specified in Report Set
_ Read SMF File to EOF

Missing SMF Files Option:
2 1. Issue error message
_ 2. Leave DSN unresolved in JCL
  3. Disregard offending reports

Enter "/" to select option
/ Edit JCL before submit

F1=Help      F3=Exit      F4=Prompt      F7=Backward  F8=Forward  F10=Actions
F12=Cancel

```

Figure 154. Run Report Set: setting run-time options

Before CICS PA generates the JCL, you are prompted to supply the following run-time options:

1. The systems to be reported. CICS PA allows you to specify System Selection twice; in the Report Set and here at run time. The Override System Selection option is provided to determine which specification will take precedence in the event of both being specified.
2. Whether to stop reading the SMF file as soon as the first record is encountered that is later than the **To** date and time, or to process all records through to EOF.
3. The date and time range of the SMF data that you want to process. If not specified, CICS PA processes the entire SMF Files. Note that CICS PA always honors any time ranges specified in your Report Selection Criteria, regardless of this setting.
4. Missing SMF Files Option that specifies the remedial action to be taken if you have not defined SMF Files for the systems to be reported.
5. Select to edit the JCL before submission.

You can choose to use either Personal or Shared System Definitions to select the SMF input data sets. Use **Systems** in the action bar to switch between Personal and Shared System Definitions.

The fields on the Run Report Set panel are:

#### System Selection

System Selection on this panel overrides the global System Selection and optionally the report-level specification. By specifying your systems here, CICS PA can proceed with JCL generation without you having to re-edit the Report Set.

Use System Selection to identify the systems you want this Report Set to analyze. They must be defined in System Definitions with the SMF files you want CICS PA to use for reporting. You can type in the system IDs, or select them from a list by placing the cursor on the field and pressing

**Prompt (F4).** To edit your System Definitions, link directly there by selecting **Systems** in the action bar, then on exit you are returned here.

You can specify four types of systems:

1. **CICS APPLID:** The CICS Generic APPLIDs you want reported. Specify either:

- A unique APPLID.
- An APPLID for a particular MVS Image. This identifies a particular CICS system when there are multiple CICS systems with the same APPLID.
- An MVS Image. CICS PA will report on all APPLIDs running on this Image using the SMF files defined for the Image.
- An APPLID and Image combination plus a Group. This is useful for uniquely identifying CICS systems when there are multiple systems of the same name defined.
- A Group alone. CICS PA will report on all APPLID and Image combinations in the Group to produce a single consolidated report. For example, for transaction grouping, or for systems that connect via IRC/MRO, ISC/APPC, or IPIC.

CICS PA generates the APPLID(applid1,applid2,applid3,...) and Input(SMFIN001,SMFIN002,SMFIN003,...) operands, and corresponding //SMFINnnn DD statements.

2. **DB2 SSID:** The DB2 Subsystem IDs. This is only used by the DB2 Report and Record Selection Extract. If the CICS APPLID Group contains the DB2 SSIDs, then it can be omitted.

CICS PA generates the SSID(ssid1,ssid2,ssid3,...) operands for the DB2 or RECSEL commands and the DD statements for the associated files.

3. **MQ SSID:** The MQ Subsystem IDs. This is only used by the WebSphere MQ Report and Record Selection Extract.

CICS PA generates the SSID(ssid1,ssid2,ssid3,...) operands for the MQ or RECSEL commands and the DD statements for the associated files.

4. **Logger:** The MVS System Logger. This is only used by the System Logger Report, System Logger Extract, and Record Selection Extract. If the CICS APPLID Group contains the System Loggers, then it can be omitted.

CICS PA generates the DD statements for the associated files.

For more information, see "System selection" on page 284.

### Override System Selections specified in Report Set

This specifies which System Selection specification will take precedence in the event that you have specified System Selection twice; both here at run time and in the Report Set.

- When the override option *is not* selected, the run-time System Selection overrides the Report Set Global options only. It does not override any System Selections specified in the individual reports within the Report Set.
- When the override option *is* selected, the run-time System Selection overrides all System Selections in the Report Set (Global Options and individual reports).



### Read SMF File to EOF

Select this option to force CICS PA to process all records in the SMF file through to EOF. Normally CICS PA stops reading the SMF file as soon as the first record is encountered that is later than the **To** time (SMFSTOP). However, if the file is not in ascending time sequence, reading might end before all records earlier than SMFSTOP have been found.

This option is only effective when the **To** time is specified. Select it when the SMF file has been presorted and you want to ensure that all records within the **From** and **To** time range are processed.

The Read SMF File to EOF setting in the profile options is added as a READ2EOF operand to JCL built when the input is an SMF file and Report Interval is specified in the RUN panel.

### Start Date/Time, Stop Date/Time

Specify a date/time range or a *time slot* (times only) to filter the SMF input data based on the SMF record time stamp. SMF records with a time stamp within the specified Start/Stop interval are processed by CICS PA, otherwise they are ignored.

#### Note:

1. Do not confuse this with the Selection Criteria From/To report intervals which apply to transaction start and stop times.
2. For the DB2 Report, specify a Stop Time that is at least 5 minutes outside the required time (From/To report interval) if protected threads are in use.

The Start/Stop date and time fields are all optional. They are blank initially (for no filtering), but thereafter display the reporting period that was previously saved.

**Date** is either a calendar date in your preferred format or a relative date. **Time** is a time-of-day. (The same edit rules apply as for the Selection Criteria Report Interval.)

Relative dates are specified as 0, -1, -2,... to signify a date relative to the current date. 0 represents today, -1 yesterday, -2 two days ago, and so on. If both Start and Stop dates are specified, they must be in the same format.

For a date/time range:

- Either From or To can be omitted to indicate that the range is open-ended.
  - If From is omitted, it defaults to the first input record
  - If To is omitted, it defaults to the end of file.
- If From date is specified with no time, the start of day is assumed.  
If To date is specified with no time, the end of day is assumed.

For a time slot, both times must be present with no dates to signify the same time slot every day. The times can span midnight.

The specified date/time range is included in the generated JCL under the //SYSIN DD statement:

```
CICSPA SMFSTART(-nn|yyyymm/dd,hh:mm:ss.th),  
        SMFSTOP(-nn|yyyymm/dd,hh:mm:ss.th)
```

### Missing SMF Files Option

Use this option to control what CICS PA does when there is a problem with JCL generation due to Systems defined without SMF Files.

1. **Issue error message.** CICS PA will cancel JCL generation and report errors in a window titled Report Set JCL Generation Failure. This window allows you to link to System Definitions and correct the file specifications. See Figure 155 on page 289 for an example.
2. **Leave DSN unresolved in JCL.** CICS PA will proceed with JCL generation creating DD statements with **DSN=<unresolved>** where the files are not known. Regardless of your JCL or SUB request, the JCL is edited to allow you to specify the DSNs before submission.
3. **Disregard offending reports.** CICS PA will proceed with JCL generation. Only reports whose Systems have files specified are included. All other reports are ignored. If there are no error-free reports, then a Report Set JCL Generation Failure message is issued.

#### Edit JCL before submit

Enter / to edit the JCL with command input before submitting the report request. This is the default if you used the **JCL** command to run the Report Set.

Editing JCL before submit will enable you to save the JCL in an external data set for automated job scheduling or ad hoc report requests.

If not selected, the JCL is generated and the job is submitted immediately. This is the default if you used the **SUBmit** command to run the Report Set.

If you used the **RUN** command to run the Report Set, the default setting is what you previously specified.

When the specification is complete, press Enter to proceed.

---

## Report Set JCL generation

At Report Set run time, CICS PA generates the required batch JCL, bringing together information from the following sources within the CICS PA dialog:

1. **Report Set.** The Report Set specifies the reports you want to run and their options.
2. **Report Forms.** When a report requests a Report Form, CICS PA looks for them in the Report Forms data set and constructs the applicable **FIELDS**, **BY**, and **LIMIT** report operands.
3. **Object Lists.** When a report specifies Selection Criteria, Object Lists can be used to identify a predefined list of object names. For example, Transaction IDs that belong to a particular application. CICS PA looks for them in the Object Lists data set and constructs the applicable **SELECT** report operands.
4. **System Definitions.** The System Definitions define the systems that can be reported and their associated SMF files. At run time or inside your Report Set, you must specify System Selection, that is, the systems to be reported. CICS PA matches the System Selection to your System Definitions. The following section describes how CICS PA interprets your System Selection and uses the System Definitions to satisfy your report request.

## System selection

System Selection specifies the systems (CICS APPLIDs, DB2 SSIDs, MQ SSIDs and System Logger systems) to be reported by the Report Set. CICS PA matches these specifications with your System Definitions and constructs the DD statements for the required SMF Files.

The System Selection can be specified:

1. In each report within the Report Set. This specification applies to this report only.
2. In the Global Options of the Report Set. This specification applies to all reports in the Report Set that do not have their own System Selection.
3. At run time. This overrides the Global Option and optionally the report-level specification.

The System Selection specification consists of three parts:

**System name**

The name of the system to be reported. When System name is specified, Image and Group are only used to further qualify the system. For example, report CICS system CICSP1 that runs on Image MVS1, not the one that runs on Image MVS2.

**Image** The MVS Image where the system(s) to be reported run. When specified on its own (without a System name), then all Systems running on the Image are reported. For example, report all CICS systems that run on Image MVS1.

**Group** The group of systems to be reported. When specified without System name, then all Systems defined to the Group are reported as a consolidated group. For example, report all Production MRO CICS systems.

The following sections explain how CICS PA interprets the various System Selections and which SMF files (defined in your System Definitions) are used to process the report requests.

## CICS system selection

Specifies the CICS system(s) to be reported.

**CICS APPLID**

Specifies the CICS system(s) to be reported.

If specified:

1. CICS PA looks for the first exact System Definition match. If found, the files for this CICS System Definition are used.
2. Otherwise, CICS PA looks for the first pattern System Definition match. If found, the files for this System Definition are used. For example, specifying CICSD1 will match CICS System Definition CICSD\*.
3. Otherwise, if the Image is specified, CICS PA looks for an Image System Definition match. If found, the files for the Image System Definition are used.
4. Otherwise, the CICS system is deemed to be undefined and you are prompted to correct your specification.

The APPLID operand identifies the specified CICS system. For example: APPLID(CICSD1).

If CICS APPLID is not specified, then Image or Group must be specified.

**Image** Specifies the MVS Image of the CICS systems to be reported.

1. If specified in conjunction with a CICS APPLID, then Image is only used to further qualify the CICS system to be reported.
2. If specified without a CICS APPLID, then CICS PA looks for an exact Image System Definition match. If found, the files for the Image System Definition are used and CICS PA will report against all APPLIDs with data in these files (by specifying the NOAPPLID operand).

3. Otherwise, the Image is deemed to be undefined and you are prompted to correct your specification.

**Group** Specifies the Group of the CICS system(s) to be reported.

1. If specified in conjunction with a CICS APPLID, then Group is only used to further qualify the CICS system to be reported.
2. If specified without a CICS APPLID, then CICS PA looks for an exact Group System Definition match. If found, the files for all systems in the Group are used and CICS PA will report against all APPLIDs in the Group. The APPLID operand identifies the CICS systems in the specified Group. For example: APPLID(CICSPTOR,CICSPAOR,CICSPFOR).
3. Otherwise, the Group is deemed to be undefined and you are prompted to correct your specification.

When the CICS System Selection specifies a Group, and the DB2 and Logger System Selections are not specified, then CICS PA will report against all DB2 subsystems and Loggers in this Group.

## **DB2 system selection**

Specifies the DB2 subsystem(s) to be reported by the DB2 report.

### **DB2 SSID**

Specifies the DB2 subsystem(s) to be reported by the DB2 reports.

If specified:

1. CICS PA looks for the first exact System Definition match. If found, the files for this DB2 System Definition are used.
2. Otherwise, CICS PA looks for the first pattern System Definition match. If found, the files for this DB2 System Definition are used. For example, specifying DB2P will match DB2 System Definition DB2\*.
3. Otherwise, if the Image is specified, CICS PA looks for an exact Image System Definition match. If found, the files for the Image System Definition are used.
4. Otherwise, the DB2 subsystem is deemed to be undefined and you are prompted to correct your specification.

The SSID operand of the DB2 report identifies the specified DB2 system. For example: DB2(SSID(DB2P),...).

**Image** Specifies the MVS Image of the DB2 subsystems to be reported.

1. If specified in conjunction with a DB2 subsystem ID, then Image is used to further qualify the DB2 subsystem to be reported.
2. If specified without a DB2 subsystem ID, then CICS PA looks for an exact Image System Definition match. If found, the files for the Image System Definition are used and CICS PA will report against all DB2 SSIDs used by the reported CICS systems.
3. Otherwise, the Image is deemed to be undefined and you are prompted to correct your specification.

**Group** Specifies the Group of the CICS system(s) to be reported.

1. If specified in conjunction with a DB2 SSID, then Group is only used to further qualify the DB2 subsystem to be reported.
2. If specified without a DB2 SSID, then CICS PA looks for an exact Group System Definition match. If found, all DB2 subsystems in the Group are reported.

3. Otherwise, the Group is deemed to be undefined and you are prompted to correct your specification.

The SSID operand of the DB2 report identifies the DB2 systems in the group. For example: DB2(SSID(DB2A,DB2B),...).

If you do not specify DB2 System Selection:

1. If your CICS System Selection specifies a Group that contains DB2 systems, then CICS PA will report against all DB2 systems in the Group.
2. Otherwise, the SSID operand is omitted and CICS PA assumes that the DB2 data is contained in the CICS system files and reports against all DB2 subsystems used by the CICS systems.

## **MQ system selection**

Specifies the MQ subsystem(s) to be reported by the WebSphere MQ report.

### **MQ SSID**

Specifies the MQ subsystem(s) to be reported by the WebSphere MQ reports.

If specified:

1. CICS PA looks for the first exact System Definition match. If found, the files for this MQ System Definition are used.
2. Otherwise, CICS PA looks for the first pattern System Definition match. If found, the files for this MQ System Definition are used. For example, specifying MQSX will match MQ System Definition MQ\*.
3. Otherwise, if the Image is specified, CICS PA looks for an exact Image System Definition match. If found, the files for the Image System Definition are used.
4. Otherwise, the MQ subsystem is deemed to be undefined and you are prompted to correct your specification.

The SSID operand of the WebSphere MQ report identifies the specified MQ system. For example: MQ(SSID(MQSX),...).

**Image** Specifies the MVS Image of the MQ subsystems to be reported.

1. If specified in conjunction with a MQ subsystem ID, then Image is used to further qualify the MQ subsystem to be reported.
2. If specified without a MQ subsystem ID, then CICS PA looks for an exact Image System Definition match. If found, the files for the Image System Definition are used and CICS PA will report against all MQ SSIDs used by the reported CICS systems.
3. Otherwise, the Image is deemed to be undefined and you are prompted to correct your specification.

**Group** Specifies the Group of the CICS system(s) to be reported.

1. If specified in conjunction with a MQ SSID, then Group is only used to further qualify the MQ subsystem to be reported.
2. If specified without a MQ SSID, then CICS PA looks for an exact Group System Definition match. If found, all MQ subsystems in the Group are reported.
3. Otherwise, the Group is deemed to be undefined and you are prompted to correct your specification.

The SSID operand of the WebSphere MQ report identifies the MQ systems in the group. For example: MQ(SSID(MQSX,MQSZ),...).

If you do not specify MQ System Selection:

1. If your global CICS System Selection specifies a Group that contains MQ systems, then CICS PA will report against all MQ systems in the Group.
2. Otherwise, you are prompted to specify your MQ System Selection.

## **Logger system selection**

Specifies the Logger system(s) to be reported by the System Logger report.

### **Logger**

Specifies the Logger system(s) to be reported.

If specified:

1. CICS PA looks for the first exact Logger System Definition match. If found, the files for this Logger System Definition are used.
2. Otherwise, CICS PA looks for the first pattern Logger System Definition match. If found, the files for this Logger System Definition are used.
3. Otherwise, if the Image is specified, CICS PA looks for an exact Image System Definition match. If found, the files for the Image System Definition are used.
4. Otherwise, the Logger system is deemed to be undefined and you are prompted to correct your specification.

If Logger is not specified, then Image or Group must be specified.

**Image** Specifies the MVS Image of the Logger systems to be reported.

1. If specified in conjunction with a Logger system name, then Image is only used to further qualify the Logger system to be reported.
2. If specified without a Logger system name, then CICS PA looks for an exact Image System Definition match. If found, the files for the Image System Definition are used and CICS PA will report against all Logger systems with data in the SMF files.
3. Otherwise, the Image is deemed to be undefined and you are prompted to correct your specification.

**Group** Specifies the Group of the Logger system(s) to be reported.

1. If specified in conjunction with a Logger system name, then Group is only used to further qualify the Logger system to be reported.
2. If specified without a Logger system name, then CICS PA looks for an exact Group System Definition match. If found, all Logger systems in the Group are reported.
3. Otherwise, the Group is deemed to be undefined and you are prompted to correct your specification.

If you do not specify Logger System Selection:

1. If your CICS System Selection specifies a Group that contains Logger systems, then CICS PA will report against all Logger systems in the Group.
2. Otherwise, you are prompted to specify your Logger System Selection.

## **Report Set JCL generation failure**

This panel is displayed when CICS PA is unable to proceed with JCL generation because systems to be reported are either not defined or have no SMF Files. The error messages detail the reasons and the report or extract which has the problem.

```
----- Report Set JCL Generation Failure -----  
  
Command ==> _____  
  
Report Set JCL generation failed with the following error:  
  
CPA1029E Report Set JCL generation failed. System or Group  
        has no SMF files  
CPA1030E System=CICSR2, Report=Record Selection Extract,  
        Output=CICSR2.RECSEL.EXTRACT  
  
Press Enter to edit System Definitions where you can correct  
the error that caused Report Set JCL generation to fail.  
  
Use Exit or Cancel to return.  
  
F1=Help    F3=Exit    F12=Cancel
```

*Figure 155. Report Set JCL generation failure*

To correct the System Definitions details, press Enter to link directly there. Alternatively, to correct the Report Set details, use Exit or Cancel.

This error panel can be avoided by selecting another **Missing SMF Files Option** on the Run Report Set panel.

## Report Set JCL

If you requested to edit the JCL, it is displayed in an ISPF edit session when Report Set JCL generation is complete.

You can modify the JCL and command input as required. You also have the option here to use the Edit **CREATE** command to store the JCL and command deck in your jobs library for later modification and submission independently of the Report Set.

To submit the job from the JCL Edit panel, enter **SUBmit** on the command line.



```

File Edit Confirm Menu Utilities Compilers Test Help
-----
EDIT      PROFILE.USERID.SPFTEMP2.CNTL      Columns 00001 00072
Command ==> SUB                               Scroll ==> PAGE
***** ***** Top of Data *****
000001 //USERID JOB (ACCOUNT),'NAME',REGION=4M
000002 //* CICS PA V5R2 Report JCL
000003 //CICSPA EXEC PGM=CPAMAIN
000004 //STEPLIB DD DSN=CICSPA.V5R2M0.SCPALINK,DISP=SHR
000005 //SYSPRINT DD SYSOUT=*
000006 //* SMF Input Files
000007 //SMFIN001 DD DSN=CICSP1.CMF.FILE1,
000008 //          DISP=SHR
000009 //* Command Input
000010 //SYSIN DD *
000011 * Report Set =REPORTP1
000012 * Description=Sample CICS PA Report Set
000013 * Reports for System=CICSP1
000014 *          Image =SYS1
000015 *          Description=CICS PA Demonstration System
000016 * Reports for APPLID=CICSP1 Image=SYS1
000017          CICSPA IN(SMFIN001),
000018          APPLID(CICSP1),
000019          LINECNT(60),
000020          FORMAT(':', '/'),
000021          LIST(OUTPUT(LIST0001))
000022 /*
***** ***** Bottom of Data *****

```

Figure 156. Submitting from JCL Edit

## Processing the output

View or print the generated reports using your normal facilities such as **SDSF** or **ISPF** option 3.8 **Outlist Utility**.

Process the extract data sets using a method appropriate to each. For example:

- Analyze the Cross-System Work extract data using CICS PA Performance Reports such as the List, Summary, and Totals reports.
- Analyze the Performance Extract, Statistics Extract, or System Logger Extract data using external programs such as DB2 or PC spreadsheet tools.
- Specify the Record Selection extract data sets as your SMF Files in System Definitions to reduce the volume of data processed by CICS PA.



---

## Chapter 9. Report Forms

Report Forms can be used to tailor the format and content of CICS PA reports and extracts. Specifying a Report Form is optional. If a Form is not specified, the report or extract is produced using the default format.

There are three report types. Each has different default settings, allowed values, and special requirements. The form types, applicable reports and extracts, and characteristics of each form type are:

**LIST** Can be used for:

- Performance List report
- Performance Alert reporting using the Performance List report
- Transaction Tracking List report
- Cross-System Work Extended report
- Performance Data extract
- List HDB reports

The Form defines:

- Report titles
- Column headings and content
- Selection Criteria
- Performance Alert fields and severity levels

The default format of the LIST Report Form is shown in Figure 161 on page 305.

**LISTX** Can be used for:

- Performance List Extended report
- Cross-System Work Extended report (sort sequence and limit ignored)
- Performance Data extract (sort sequence and limit ignored)

The Form defines:

- Report titles
- Column headings and content
- Sort sequence (defined by up to three fields)
- Key limit count
- Selection Criteria

The default format of the LISTX Report Form is shown in Figure 163 on page 313.

**SUMMARY**

Can be used for:

- Performance Summary report
- Performance Alert reporting using the Performance Summary report
- Performance Data extract
- Transaction Profiling report
- Transaction Tracking Summary report
- Summary HDB reports

The Form defines:

- Report titles
- Column headings and content
- Up to 8 key fields to summarize by
- Sort sequence and optional alternate sequencing on a numeric field
- Selection Criteria

- Performance Alert fields and severity levels

The default format of the SUMMARY Report Form is shown in Figure 165 on page 318.

## Maintaining Report Forms

To display the list of Report Forms in the current Report Forms data set, select option 3 **Report Forms** from the CICS PA Primary Option Menu.

**Tip:** To set or change the current Report Forms data set, use the **Options** menu on the action bar or enter **CDS** from the command line.

```

File Confirm Samples Options Help
-----
Report Forms                               Row 1 to 3 of 3
Command ==>                               Scroll ==> PAGE

Report Forms Data Set . . : xxxx.CICSPA.FORM

/ Name      Type      Description      Changed      ID
- LISTX1    LISTX     List Extended Report Form  2005/01/13 09:00 MKR08
- LIST1     LIST      List Report Form           2005/01/01 12:27 JCH02
- PSUMMY01  SUMMARY    Summary Report Form        2005/01/12 08:57 DAM13
***** End of list *****

```

Figure 157. Report Forms

From the list of Report Forms, you can select one at a time to view or modify, or you can create new Report Forms.

You can also add a selection of sample Report Forms by selecting **Samples** in the action bar or entering the **SAMPLES** command. See “Sample Report Forms” on page 294.

The Report Forms are listed with the following user-defined attributes:

**Name** 1-8 character name in ISPF member name format, used to uniquely identify the Report Form within the Report Forms data set. By default, the panel is sorted on the Name field.

**Type** The type of Report Form, either LIST, LISTX or SUMMARY.

**Description**  
Free format text up to 32 characters that describes the contents and purpose of the Report Form.

### Line Actions

- /** Display the menu of line actions.
- E** Edit the Report Form.
- S** Select the Report Form (same as Edit).
- V** View the Report Form. This looks like the Edit panel but has no 'hold' on the data and has no Save capability. SAVEAS is available.
- D** Delete the Report Form.
- R** Rename the Report Form.
- J** Run the report from the Report Form.

## Primary Commands

The following primary commands are valid for this panel:

### **NEW name type**

This command creates a new Report Form with the specified name. The type is either:

**LIST** List Report Form

**LISTX or LX**

List Extended Report Form

**SUMMARY**

Summary Report Form

**MODEL**

Model on an existing Report Form

**MODELX**

Model on an existing HDB Template

It displays the New Report Form window populated with values from your entered command or from the last Report Form you created, and prompts you for further details to define the new Report Form.

Also available from **File** in the action bar or **F6**.

See “Creating new Report Forms” on page 301 for information on how to proceed.

### **SELECT name**

This command (or **S**) selects the specified Report Form for editing. If the Report Form does not exist, it is created as if the **NEW** command was used.

Also available from **File** in the action bar.

### **SORT Name | Type | Description | Changed | Id**

This command sorts the list of Report Forms on one or two columns. The default sort field is **Name**. The sort disregards upper and lower case, and is ascending for all but the Changed column which is descending. The sort order is retained only until Exit or another SORT command is issued.

### **LOCATE string**

This command (or **L** or **LOC**) is used to locate an entry in the list based on the primary sort field. By default, LOCATE operates on the **Name** field.

The string should be no longer than the primary sort field and not enclosed in quotes. The display will scroll to the entry which matches the string, or the entry preceding it if an exact match is not found.

### **CONFIRM ON | OFF**

**CONFIRM ON** (or **CONFIRM**) instructs CICS PA to prompt for confirmation when you request to Delete a Report Form.

With **CONFIRM OFF**, Delete requests are actioned immediately. Deleted Report Forms cannot be reinstated.

This command changes the setting only for the current invocation of the Report Forms panel. On exit, it reverts to the default set by **Delete Confirmation** in CICS PA Settings.

Also available from **Confirm** in the action bar.

### **SAMPLES**

This command displays the list of Sample Report Forms. You can select one or more Forms from the list to populate your Report Forms data set.

Also available from **Samples** in the action bar.

### FIND string

This command (or F) looks for the specified character string within all columns in the displayed data. The string need only be enclosed in quotes if there are embedded spaces. The search is not case sensitive. The display scrolls to the row where the string is found and positions the cursor on the matching data. To find more occurrences, use **F5** or the **RFIND** command repeatedly.

If there is no match but the search did not begin at the start of the list, the screen does not change and the message \*Bottom of data reached\* is displayed. Use **F5** or **RFIND** to search from the top. If there is no match in the entire list, the screen does not change and the message No CHARS xxx found is displayed.

## Sample Report Forms

A set of sample Report Forms is provided with CICS PA (see Table 6 on page 295). They demonstrate how CICS PA reports can be tailored to reflect the many ways you use and configure your CICS systems. The CICS PA reports and extracts produced using these sample Report Forms will provide a detailed picture of the many aspects affecting CICS system performance.

To add the samples to your Report Forms data set, select **Samples** in the action bar of the Report Forms panel. This lists the sample Report Forms that are available for selection.

Sample Report Forms    Row 1 to 17 of 239  
Command ==> \_\_\_\_\_ Scroll ==> PAGE  
  
Select one or more sample Report Forms then press EXIT.  

Name	Type	Description
ABNDLST	LIST	Transaction Abend List
ABNDSUM	SUMMARY	Transaction Abend Summary
ACCT5SUM	SUMMARY	Accounting Summary HDB Extract
ACCTSUM	SUMMARY	Accounting Summary HDB Extract
APPLGRP1	SUMMARY	Application Grouping Example 1
APPLGRP2	SUMMARY	Application Grouping Example 2
ASSCLST	LIST	Association Data Analysis (V4)
BADCHMDS	LISTX	Top 20 Worst Change TCB Modes
BADCPU	LISTX	Top 20 Worst CPU Times
BADDB2R	LISTX	Top 20 Worst DB2 Requests (V5)
BADDB2RQ	LISTX	Top 20 Worst DB2 Requests
BADFCRQ	LISTX	Top 20 Worst File Requests
BADRESP	LISTX	Top 20 Worst Response Times
BADRFMI	LISTX	Top 20 Worst CICS RMI Times
BADRMIRQ	LISTX	Top 20 Worst CICS RMI Requests
BADSUSP	LISTX	Top 20 Worst Suspend Times
BADTDRQ	LISTX	Top 20 Worst Tdqueue Requests

F1=Help    F3=Exit    F5=Rfind    F6=Resize    F12=Cancel

Figure 158. Select Sample Report Forms

The sample Report Forms can be added to your Report Forms data set at any time regardless of its current contents. A sample Report Form will not be available for selection if a Report Form of the same name already exists. When you add a sample Report Form to your Report Forms data set, its **Changed** value is set to *yyyy/mm/dd 00:00* (identifying the date when the current set of sample Report Forms was packaged) and its **ID** value is set to **CICSPA**.

- Enter line action **S** (or any non-blank character) to select one or more samples.

- Enter **S \*** on the command line to select all the samples.
- Enter the **RESet** command to clear all line actions.
- Press **Exit** (F3) to complete your selection.
- Use **FIND** and **RFIND** (F5) to search for a character string in any column.

## Available Sample Report Forms

The full selection list of sample Report Forms is shown in the following table.

*Table 6. Sample Report Forms*

Name	Type	Description
ABNDLST	List	Transaction Abend List
ABNDSUM	Summary	Transaction Abend Summary
ACCT5SUM	Summary	Accounting Summary HDB Extract
ACCTSUM	Summary	Accounting Summary HDB Extract
APPLGRP1	Summary	Application Grouping Example 1
APPLGRP2	Summary	Application Grouping Example 2
ASSCLST	List	Association Data Analysis (V4)
BADCHMDS	ListX	Top 20 Worst Change TCB Modes
BADCPU	ListX	Top 20 Worst CPU Times
BADDB2R	ListX	Top 20 Worst DB2 Requests (V5)
BADDB2RQ	ListX	Top 20 Worst DB2 Requests
BADFCRQ	ListX	Top 20 Worst File Requests
BADRESP	ListX	Top 20 Worst Response Times
BADRFMI	ListX	Top 20 Worst CICS RMI Times
BADRMIRQ	ListX	Top 20 Worst CICS RMI Requests
BADSUSP	ListX	Top 20 Worst Suspend Times
BADTDRQ	ListX	Top 20 Worst Tdqueue Requests
BADTSRQ	ListX	Top 20 Worst Tsqueue Requests
BADWBRQ	ListX	Top 20 Worst CICS Web Requests
BADWMQRQ	ListX	Top 20 Worst WebSphere MQ Reqs
BTSACLST	List	CICS BTS Activity - Overview
BTSRQLST	List	CICS BTS Request Activity
BTSRQSUM	Summary	CICS BTS Request Activity
CC3LST	List	Channel Container Activity (V3)
CC3SUM	Summary	Channel Container Activity (V3)
CCLST	List	Channel Container Activity
CCSUM	Summary	Channel Container Activity
CEC5LST	List	Transaction CEC Analysis (V5)
CHMDSRNG	Summary	Change TCB Mode Distribution
COMMWLST	List	Transaction Comms Wait Analysis
COMMWSUM	Summary	Transaction Comms Wait Analysis
CPU3LEXT	List	CPU Analysis and Extract (V3)
CPU3SEXT	Summary	CPU Analysis and Extract (V3)

*Table 6. Sample Report Forms (continued)*

<b>Name</b>	<b>Type</b>	<b>Description</b>
CPU4LEXT	List	CPU Analysis and Extract (V4)
CPU4SEXT	Summary	CPU Analysis and Extract (V4)
CPU5LEXT	List	CPU Analysis and Extract (V5)
CPU5LST	List	Transaction CPU Analysis (V5)
CPU5SEXT	Summary	CPU Analysis and Extract (V5)
CPU5SUM	Summary	Transaction CPU Analysis (V5)
CPU85LST	List	Transaction CPU Analysis (Key 8)
CPU85SUM	Summary	Transaction CPU Analysis (Key 8)
CPU8LST	List	Transaction CPU Analysis (Key 8)
CPU8SUM	Summary	Transaction CPU Analysis (Key 8)
CPU95LST	List	Transaction CPU Analysis (Key 9)
CPU95SUM	Summary	Transaction CPU Analysis (Key 9)
CPU9LST	List	Transaction CPU Analysis (Key 9)
CPU9SUM	Summary	Transaction CPU Analysis (Key 9)
CPULEXTR	List	CPU Analysis and Extract
CPULST	List	Transaction CPU Analysis
CPULST1	List	Transaction CPU Analysis (1)
CPUSESUM	Summary	Transaction CPU Analysis (V5)
CPUSEXTR	Summary	CPU Analysis and Extract
CPUSPLST	List	Transaction CPU Analysis (V5)
CPUSPSM1	Summary	Transaction CPU Analysis (V5)
CPUSPSUM	Summary	Transaction CPU Analysis (V5)
CPUSUM	Summary	Transaction CPU Analysis
CPUSUM1	Summary	Transaction CPU Analysis (1)
CSLSALST	List	IP CICS Sockets - Listener Actvt
CSLSASUM	Summary	IP CICS Sockets - Listener Actvt
CSTRCLST	List	IP CICS Sockets - TRUE Calls
CSTRCSUM	Summary	IP CICS Sockets - TRUE Calls
CSTSKLST	List	IP CICS Sockets - Task Usage
CSTSKSUM	Summary	IP CICS Sockets - Task Usage
CSWANLST	List	Cross-System Analysis List
CSWEXLST	List	Cross-System Extract List Report
DHLST	List	CICS Document Handler Analysis
DHSUM	Summary	CICS Document Handler Analysis
DISPSUM	Summary	Transaction Dispatch/CPU Usage
EJBLST	List	Enterprise Java Bean Analysis
EJBSUM1	Summary	Enterprise Java Bean Analysis(1)
EJBSUM2	Summary	Enterprise Java Bean Analysis(2)
ENQLST	List	CICS ENQueue/Lock Delay Analysis
ENQSUM	Summary	CICS ENQueue/Lock Delay Analysis

Table 6. Sample Report Forms (continued)

Name	Type	Description
EPEC4LS1	ListX	CICS Synch Event Capture Top 20
EPEC4LST	List	CICS Event Capture Activity (V4)
EPEC4LSX	ListX	CICS Event Capture Top 20 (V4)
EPEC4SU1	Summary	Event Capture by Time-of-Day(V4)
EPEC4SUM	Summary	CICS Event Capture Activity (V4)
EXPLORE3	Summary	Explorer CSV for CICS TS V3
EXPLORE4	Summary	Explorer CSV for CICS TS V4
EXPLORE5	Summary	Explorer CSV for CICS TS V5
EXWTLST	List	Exception Wait Analysis
EXWTSUM	Summary	Exception Wait Analysis
FCLST	List	File Request Activity
FCRQRNGC	Summary	File Request Distribution
FCRQRNGP	Summary	File Request Distribution (%)
FCSUM	Summary	File Request Activity
FCTYLST	List	Transaction Facility Analysis
FCWTLST	List	File Wait Analysis
FCWTSUM	Summary	File Wait Analysis
FDSPLST	List	First Dispatch Delay Analysis
FDSPSUM	Summary	First Dispatch Delay Analysis
FEPIST	List	FEPI Request Activity
FEPISUM	Summary	FEPI Request Activity
IC3LST	List	Interval Control Activity (V3)
IC3SUM	Summary	Interval Control Activity (V3)
ICLST	List	Interval Control Activity
ICSUM	Summary	Interval Control Activity
IMSDLST	List	Transaction DBCTL Usage Analysis
IMSDBSUM	Summary	Transaction DBCTL Usage Analysis
IMSRQLST	List	Transaction DBCTL Req Analysis
IMSRQSUM	Summary	Transaction DBCTL Req Analysis
IMSSUM	Summary	IMS DBCTL PSB Usage Analysis
JCLST	List	Journaling/Logging Activity
JCSUM	Summary	Journaling/Logging Activity
JVMLST	List	Java Virtual Machine Analysis
JVMSUM	Summary	Java Virtual Machine Analysis
LOCKLST	List	CICS Lock Delay Analysis (V5)
LOCKSUM	Summary	CICS Lock Delay Analysis (V5)
MPAPPSUM	Summary	Platform - Application Summary
MPFCRQ	Summary	Platform - File Request Summary
MPMISC	Summary	Platform - CPU/LINKs/DB2 Summary
MPMISC1	Summary	Platform - Response/CPU Summary

Table 6. Sample Report Forms (continued)

	Name	Type	Description
I	MPMISC2	Summary	Platform - Misc Requests Summary
	MPSHRSTG	Summary	Platform - Shared Stg Summary
	MPT24STG	Summary	Platform - 24-bit Stg Summary
	MPT31STG	Summary	Platform - 31-bit Stg Summary
	MPT64STG	Summary	Platform - 64-bit Stg Summary
	MPTABND	List	Platform - Transaction Abend
I	MPTDRQ	Summary	Platform - TD Request Summary
I	MPTSRQ	Summary	Platform - TS Request Summary
	MPTXCLST	List	Platform - Threshold Exceeded
	MXTBYTOD	Summary	MAXTASKS Analysis by Time-of-Day
	MXTBYTSK	List	MAXTASKS Analysis by Task
	OMDLMLST	List	OMEGAMON Database Limit Warnings
	OMOEMLST	List	OMEGAMON Third Party Support
	OMOEMSUM	Summary	OMEGAMON Third Party Support
	OMRLMLST	List	OMEGAMON Resource Limit Warnings
	PC3LST	List	Program Request Channel Activity
	PC3SUM	Summary	Program Request Channel Activity
	PCLST	List	Program Request Activity
	PCSUM	Summary	Program Request Activity
	PGAPLSUM	Summary	Transactions by Application Prog
	PGDPLSUM	Summary	DPL Program Usage by Connection
	PGUSESUM	Summary	Transactions by Initial Program
	PHCSUM1	Summary	Previous Hop by OAPPLID
	PHCSUM2	Summary	Previous Hop by OAPPLID/APPLID
	PHCSUM3	Summary	Previous Hop by OAPPLID/OTRAN
	PHCSUM4	Summary	Previous Hop by OTRAN
	PHILIST1	ListX	Previous Hop List by TRAN
	PHILIST2	ListX	Previous Hop List by PHTRAN
	PHISUM1	Summary	Previous Hop Interdependency
	PHPSUM1	Summary	Previous Hop by OAPPLID
	PHPSUM2	Summary	Previous Hop by OAPPLID/APPLID
	PHPSUM3	Summary	Previous Hop by OAPPLID/OTRAN
	PHPSUM4	Summary	Previous Hop by OTRAN
	PSTORLST	List	Program Storage Analysis
	PSTORSUM	Summary	Program Storage Analysis
	RESPPEAK	Summary	Response Time Peak Percentiles
	RESPRNGC	Summary	Response Time Distribution
	RESPRNGM	Summary	Response Time Distribution (C+%)
	RESPRNGP	Summary	Response Time Distribution (%)
	RESPWLMP	Summary	Response Time Distribution (%)



*Table 6. Sample Report Forms (continued)*

<b>Name</b>	<b>Type</b>	<b>Description</b>
RMIDB2LS	List	CICS RMI Analysis - DB2 Overview
RMIDB2SM	Summary	CICS RMI Analysis - DB2 Overview
RMIDBLST	List	CICS RMI Analysis - DB2 Overview
RMIDBSUM	Summary	CICS RMI Analysis - DB2 Overview
RMILST1	List	CICS RMI Analysis - Detail (1)
RMILST2	List	CICS RMI Analysis - Detail (2)
RMIMQLST	List	CICS RMI Analysis - MQ Overview
RMIMQSUM	Summary	CICS RMI Analysis - MQ Overview
RMIMSLST	List	CICS RMI Analysis - IMS Overview
RMIMSSUM	Summary	CICS RMI Analysis - IMS Overview
RMIOVLST	List	CICS RMI Analysis - Overview
RMIOVSUM	Summary	CICS RMI Analysis - Overview
RMISUM1	Summary	CICS RMI Analysis - Summary (1)
RMISUM2	Summary	CICS RMI Analysis - Summary (2)
RTETRSUM	Summary	Transaction Routing Analysis (2)
SSTG5LST	List	Shared Storage Analysis (V5)
SSTG5SUM	Summary	Shared Storage Analysis (V5)
SSTORLST	List	Shared Storage Analysis
SSTORSUM	Summary	Shared Storage Analysis
STG24LST	List	Storage Usage - Below 16MB
STG31LST	List	Storage Usage - Above 16MB
STG64LST	List	Storage Usage - Above the Bar
STG64SUM	Summary	Storage Usage - Above the Bar
SUMBYATD	Summary	Summary by Application Tran ID
TCB3LST	List	CICS TCB Usage and Delays (V3)
TCB3SUM	Summary	CICS TCB Usage and Delays (V3)
TCB4LST	List	CICS TCB Usage and Delays (V4)
TCB4SUM	Summary	CICS TCB Usage and Delays (V4)
TCB5LST	List	CICS TCB Usage and Delays (V5)
TCB5SUM	Summary	CICS TCB Usage and Delays (V5)
TCLDLSUM	Summary	Tclass Delays by Tranclass Name
TCLST1	List	Terminal Control Activity (1)
TCLST2	List	Terminal Control Activity (2)
TCPIPSUM	Summary	Transactions by TCP/IP Service
TCPLST	List	CICS Support for TCP/IP Analysis
TCPSUM	Summary	CICS Support for TCP/IP Analysis
TCSUM2	Summary	Terminal Control Activity (2)
TDLST	List	Transient Data Activity
TDSUM	Summary	Transient Data Activity
TRAPLSUM	Summary	Transactions by Application Tran

Table 6. Sample Report Forms (continued)

Name	Type	Description
TRAR5SUM	Summary	Transactions by CICS release (V5
TRARLSUM	Summary	Transactions by CICS release
TRARTSUM	Summary	Transaction Routing Analysis (3)
TRATDSUM	Summary	Transactions by Applid and TOD
TRORGSUM	Summary	Transactions by Origin Type
TRPGMSUM	Summary	Transactions by Program Name
TRRTESUM	Summary	Transaction Routing Analysis (1)
TRTCLSUM	Summary	Transactions by Tranclass Name
TRTD5SUM	Summary	Transactions by Time-of-Day (V5)
TRTE5SUM	Summary	Transaction Usage by Terminal ID
TRTESUM	Summary	Transaction Usage by Terminal ID
TRTODSUM	Summary	Transactions by Time-of-Day
TRTRASUM	Summary	Transaction Routing Analysis (4)
TRUSRSUM	Summary	Transactions by Userid
TSLST	List	Temporary Storage Activity
TSSUM	Summary	Temporary Storage Activity
TSWTLST	List	Temporary Storage Wait Analysis
TSWTSUM	Summary	Temporary Storage Wait Analysis
UOWLST	List	Transaction Network Unit-of-Work
USTG5LS1	List	User (Task) Storage Analysis (1)
USTG5LS2	List	User (Task) Storage Analysis (2)
USTG5SUM	Summary	User (Task) Storage Analysis (V5
USTORLST	List	User (Task) Storage Analysis
USTORSUM	Summary	User (Task) Storage Analysis
WB3LST	List	CICS Web Support Analysis (V3)
WB3SUM	Summary	CICS Web Support Analysis (V3)
WBAT4SUM	Summary	URIMAP ATOMSERVICE Analysis (V4)
WBAT5SUM	Summary	URIMAP ATOMSERVICE Analysis (V5)
WBLST	List	CICS Web Support Analysis
WBPG4SUM	Summary	URIMAP PROGRAM Analysis (V4)
WBPG5SUM	Summary	URIMAP PROGRAM Analysis (V5)
WBPL4SUM	Summary	URIMAP PIPELINE Analysis (V4)
WBPL5SUM	Summary	URIMAP PIPELINE Analysis (V5)
WBR3LST	List	CICS Web Support Repository Use
WBR3SUM	Summary	CICS Web Support Repository Use
WBS3LST	List	CICS Web Support Analysis (V3)
WBS3SUM	Summary	CICS Web Support Analysis (V3)
WBSUM	Summary	CICS Web Support Analysis
WBSV3LST	List	CICS WEBSERVICE Usage (V3)
WBSV3SUM	Summary	CICS WEBSERVICE Usage (V3)

Table 6. Sample Report Forms (continued)

Name	Type	Description
WBSV4LST	List	CICS INVOKE SERVICE Usage (V4)
WBSV4SUM	Summary	CICS INVOKE SERVICE Usage (V4)
WBSV5LST	List	CICS INVOKE SERVICE Usage (V5)
WBSV5SUM	Summary	CICS INVOKE SERVICE Usage (V5)
WBUR4LST	List	Web URIMAP Usage Analysis (V4)
WBUR4SUM	Summary	Web URIMAP Usage Analysis (V4)
WBUR5SUM	Summary	Web URIMAP Usage Analysis (V5)
WBWS4SUM	Summary	URIMAP WEBSERVICE Analysis (V4)
WBWS5SUM	Summary	URIMAP WEBSERVICE Analysis (V5)

## Creating new Report Forms

You can create a new Report Form in either of the following ways:

- In the command line, enter **NEW** followed by the name of the new Report Form and initialization details using the following syntax:

```

▶▶—NEW—newname—LIST—
                  LISTX|LX—
                  SUMMARY—
                  MODEL—
                  MODEL—

```

- Select **File** from the action bar, then choose **New**.
- Press **New** (F6).

The New Report Form panel is displayed as shown in Figure 159 on page 302. This panel allows you to initially populate your Report Form with fields for a particular CICS System (including any user fields), Version (VRM), or fields in selected categories. Alternatively, you can model the new Report Form on an existing Report Form or HDB Template.

File Systems Options Help	
-----	
New Report Form	
Command ==>	
Specify new Report Form options.	
Name . . .	LIST2__ Version (VRM) . . . __ +
System Selection:	Field Categories:
APPLID . . . .	CICST1__ + _ Select to specify Field Categories
MVS Image . . .	_____
Form Type or Model:	
1. List	4. Model (Report Form)
2. List Extended (Sorted)	5. Model (HDB Template)
3. Summary	
Model . . . . .	LIST1__ +
Report Forms Data Set . .	'xxxx.CICSPA.FORM' _____ +
Repository . . . . .	'CICSPA.XYX.REPOSTRY' _____ +

Figure 159. Specifying a New Report Form

The options are:

**Name** The name of the new Report Form. A 1-8 character name in ISPF member name format. The name must be unique within the Report Forms data set.

#### APPLID, Image, Version (VRM)

Specify the CICS System or CICS Version (VRM) that this Report Form applies to.

- If you specify the CICS System (APPLID, or APPLID and MVS Image), CICS PA can extract the associated (active) Dictionary entries for that CICS system, including any user fields. If not specified, CICS PA will assume the default Form, and user fields will not be available.

The CICS system must be defined in System Definitions, either Personal or Shared depending on your current setting. To select one from a list, use **Prompt** (F4). To link directly to System Definitions or switch between Personal and Shared Systems, use **Systems** in the action bar.

- Alternatively, if you specify the VRM, CICS PA uses it to populate the Form with fields applicable to that release of CICS. The supported releases are:

<b>640</b>	CICS Transaction Server for z/OS Version 3 Release 1
<b>650</b>	CICS Transaction Server for z/OS Version 3 Release 2
<b>660</b>	CICS Transaction Server for z/OS Version 4 Release 1
<b>670</b>	CICS Transaction Server for z/OS Version 4 Release 2
<b>680</b>	CICS Transaction Server for z/OS Version 5 Release 1
<b>690</b>	CICS Transaction Server for z/OS Version 5 Release 2

If a CICS system (APPLID/Image) is specified and a VRM can be derived from the MCT load library or SDFHLOAD library, then that VRM is used. If a VRM cannot be derived from the system definition then the VRM value specified in this panel is used.

If you do not specify either a CICS System or a VRM, then CICS PA populates the Form with fields applicable to the latest supported release of CICS.

#### Field Categories

Enter / (or press **F11**) to display the selection list of field categories that you can use to initially populate your new Report Form. For example, you

can initialize your Form with Task and Terminal Control fields by selecting DFHTASK and DFHTERM from the list. The default is all categories except CROSSYS, DBCTL, and OMCICS.

Within the selected categories, the fields added to your Report Form depend on the specified CICS APPLID or VRM. If APPLID is specified, CICS PA obtains the fields from the CMF Dictionary for that APPLID. Otherwise the VRM is used. If APPLID and VRM are not specified, the default is 690.

See Figure 160 on page 304 for an example of the Field Categories selection list.

### Form Type or Model

Select the type of Report Form or model which dictates how the new Form is to be initialized (such as the fields, order, sort sequence). Type is important since a Form can only be used by reports and extracts of compatible type:

**1. List** LIST report forms can be used for the Performance List report and similar list-style reports and extracts: For the names of compatible reports and extracts, see “LIST Report Form” on page 305.

**2. List Extended (Sorted)**

LISTX report forms are similar to LIST report forms but also allow up to three sort fields and a processing limit to be specified. For the names of compatible reports and extracts, see “LISTX Report Form” on page 312.

**3. Summary**

SUMMARY report forms can be used for the Performance Summary report and other summary reports and extracts. For the names of compatible reports and extracts, see “SUMMARY Report Form” on page 317.

**4. Model (Report Form)**

If the new Report Form is to be modelled on an existing one, specify the name of the model Report Form and data set where it is stored. **Prompt** (F4) is available for both the Report Form data set name and the Report Form member name.

**5. Model (HDB Template)**

If the new Report Form is to be modelled on an existing HDB Template, specify the name of the model HDB Template and Repository where it is stored. **Prompt** (F4) is available for both the Repository data set name and the HDB Template name.

For HDB reporting and extract to CSV, it is useful to model a Report Form on an HDB Template. This ensures that the fields requested in the Form match the fields collected in the HDB.

When you have specified all required details, press Enter to create the Report Form.

## Select field categories

To display the list of available CICS field categories, enter / to select Field Categories or press **F11** from the New Report Form panel.

Select Field Categories

Command ==> \_\_\_\_\_

CMF Groups:

- DFHAPPL - Application naming - DFHBTS - BTS - DFHCHNL - CHANNEL option / DFHCICS - CICS task information - DFHDATA - Data processing - DFHDEST - Transient Data - DFHDOCH - Document Handler - DFHEJBS - EJB Server - DFHFEP1 - Front End (FEPI) - DFHFILE - File Control	- DFHJOUR - Journal - DFHMAPP - BMS Maps / DFHPROG - Program Control - DFHRMI - Resource Manager (RMI) - DFHSOCK - Secure Sockets / DFHSTOR - Storage Control - DFHSYNC - Syncpoint processing / DFHTASK - Task Control - DFHTEMP - Temporary Storage / DFHTERM - Terminal Control - DFHWEBB - Web Interface
--	--

Region Type: - AOR - Application-owning - FOR - File-owning - TOR - Terminal-owning - DB2 - AOR with DB2	User Fields: - DBCTL - IMS DBCTL - CROSSYS - Cross-System - OMCICS - OMEGAMON
--	--

Figure 160. Select field categories

This panel displays the field categories that you can select to populate a new Report Form. The categories reflect the various ways of using and configuring your CICS systems. You can choose just the ones that you require. Only categories applicable to the specified CICS version are available for selection. If not specified, 690 is assumed.

Enter / to select one or more field categories, then press **Next** (F11) or **Exit** (F3). The fields in the selected categories, and relevant to the specified CICS version, will appear in the new Report Form.

Selecting no categories has the same effect as selecting all categories except DBCTL, CROSSYS, and OMCICS.

To limit the Report Form to fields that are relevant to particular types of CICS region (such as application-owning regions), select one or more region type. Selecting a region type excludes from the Report Form any fields that are not relevant to that region type, as defined in the sample monitoring control tables provided by CICS (in sample library SDFHSAMP members DFHMCTx\$).

## Primary Commands

### SELECT

This command selects all field categories.

### RESET

This command (or **RES**) resets all field categories by clearing the selection line actions.

---

## Specifying Report Form contents

The Report Form **Edit** panel is displayed when you do either of the following actions from the Report Forms panel:

- Create a new Report Form.  
Use the **NEW** command, select **File->New** in the action bar, or press **New** (F6). Specify the new Report Form options then press Enter.
- Select an existing Report Form.  
Enter line action **E** or **S** against a Report Form, or use the **SELECT** command.

Alternatively, you can enter line action **V** to display the Report Form View panel. Viewing a Report Form works in every way like Edit except there is no exclusive hold on the data and changes cannot be saved. However you can use **SAVEAS**.

There are three different Report Form panels because the contents and processing differs slightly for the different Report Form types: **LIST**, **LISTX**, and **SUMMARY**. However, most of their operation is similar.

## LIST Report Form

The LIST Report Form can be used to tailor the format and content of the following reports and extracts:

- Performance List report
- Cross-System Work report
- Transaction Tracking List Report
- Performance extract
- List HDB reports

The Report Form defines the fields to be included, the order of the columns, and a title for the report.

The Report Form panel has two views as there are too many columns of information to display in a single screen view. When you select a Report Form to Edit or View, the view shown in Figure 161 is displayed by default.

```

File Edit Confirm Upgrade Options Help
-----
                        EDIT LIST Report Form - SAMPLIST                      More: >
Command ==> _____ Scroll ==> PAGE

Description . . . . List Report Form_____ Version (VRM): 690

Selection Criteria:
_ Performance *                               Page width . . 132_

Field
/ Name +      Type      Fn Description
---
TRAN          _____ Transaction identifier
---
STYPE         _____ Transaction start type
---
TERM          _____ Terminal ID
---
USERID        _____ User ID
---
RSYSID        _____ Remote System ID
---
PROGRAM       _____ Program name
---
TASKNO        _____ Transaction identification number
---
STOP          TIMET      Task stop time
---
RESPONSE      _____ SEV  Transaction response time
---
DISPATCH     TIME       Dispatch time
---
CPU           TIME       CPU time
---
SUSPEND       TIME       Suspend time
---
DISPWAIT      TIME       Redispach wait time
---
FCWAIT        TIME       File I/O wait time
---
FCAMCT        _____ File access-method requests
---
IRWAIT        TIME       MRO link wait time
---
EOR           _____ ----- End of Report -----
---
EOX           _____ ----- End of Extract -----
---
ABCODEC       _____ Current ABEND code
F1=Help      F3=Exit      F4=Prompt   F5=Rfind    F7=Backward F8=Forward
F10=Actions  F11=Right   F12=Cancel

```

Figure 161. LIST Report Form (with Default Form)

Scroll **Right** (F11) to toggle between the views.

File Edit Confirm Upgrade Options Help

EDIT LIST Report Form - SAMPLIST
More: >

Command ==>
Scroll ==> PAGE

Description . . . . List Report Form

Title . . First half title
Second half title

Field	Name	Type	Length	Dictionary	Definition	- User	Field -
/						Offset	Length
—	TRAN		4	TRAN	DFHTASK C001	—	—
—	STYPE		2	TTYE	DFHTASK C004	—	—
—	TERM		4	TERM	DFHTERM C002	—	—
—	USERID		8	USERID	DFHCICS C089	—	—
—	RSYSID		4	RSYSID	DFHCICS C130	—	—
—	PROGRAM		8	PGMNAME	DFHPRG C071	—	—
—	TASKNO		8	TRANNUM	DFHTASK P031	—	—
—	STOP	TIMET	12	STOP	DFHCICS T006	—	—
—	RESPONSE		8	RESP	CICSPA D901	—	—
—	DISPATCH	TIME	8	USRDISPT	DFHTASK S007	—	—
—	CPU	TIME	8	USRCPUT	DFHTASK S008	—	—
—	SUSPEND	TIME	8	SUSPTIME	DFHTASK S014	—	—
—	DISPWAIT	TIME	8	DISPWTT	DFHTASK S102	—	—
—	FCWAIT	TIME	8	FCIOWTT	DFHFILE S063	—	—
—	FCAMCT		8	FCAMCT	DFHFILE A070	—	—
—	IRWAIT	TIME	8	IRIOWTT	DFHTERM S100	—	—
—	EOR					—	—
—	EOX					—	—
—	ABCODEC		4	ABCODEC	DFHPRG C114	—	—

F1=Help F3=Exit F4=Prompt F5=Rfind F7=Backward F8=Forward  
F10=Actions F11=Right F12=Cancel

The LIST Report Form consists of the following fields:

### Form Description

Up to 32 characters of text to describe the purpose of the Report Form. This description is shown on the Report Forms panel to help you identify the Forms in the list. It is initially set to **List Report Form**.

### Version (VRM)

This identifies the CICS release that this Report Form was created for. It determines which CMF fields are available for selection in this Report Form.

### Selection Criteria

Optionally, you can specify Selection Criteria to filter the data on time periods and field values to restrict the reporting to only the data that is of interest to you.

When a report specifies a Report Form and both have Selection Criteria specified, records must match both criteria to be included in the report.

**Line Actions:** The available line actions are:

- /** Display the selection list of line actions.
- S** Select (edit) the Selection Criteria. See “Specifying Selection Criteria” on page 156 for information on specifying Selection Criteria.
- A** Activate the Selection Criteria so they are included for reporting. Selection Criteria can only be activated if you have specified at least one Select Statement and it is not excluded. An asterisk \* indicates they are active.



- D** Deactivate the Selection Criteria. Any you might have specified here will not be used in reporting.

### Page Width

Page width of the report, in the range 80 to 8000. The default is **132**.

When you increase the page width, you can include more fields in the report. Move EOR down the list or move fields above EOR to include the fields of interest. CICS PA automatically adjusts the EOR marker when the fields overflow the page width.

When you view the report output (using SDSF), scroll right to see the additional fields. Note that when you print the report, data that exceeds the maximum printer page width is truncated.

**Title** Title of the report. Specify up to 128 characters of text to describe the report. CICS PA concatenates the two lines of 64 exactly as entered to make one line which prints at the top of each page of the report below the heading. The default is blank (no title).

If the report uses a Report Form, and a title is specified on both, the title on the report takes precedence.

This option generates the TITLE1('left-half') and TITLE2('right-half') operands.

The title is ignored for extracts.

### Field rows

One row for each field. The order of the fields in the Report Form dictates the order of the columns in the report or extract. The fields have the following attributes: Field Name, Type (clock and time stamp fields only), Description, Length, Dictionary Definition, User Field Offset and Length (character user fields only).

### Field Name

One of the following values:

- The CICS PA field name. For CICS CMF fields, this is usually the Informal name or similar. The names for user fields are derived from the MCT. Use line action **S** or **Prompt** (F4) to select from a list of fields applicable to this Form type and CICS version.
- The Application Group name. For details, see Chapter 11, “Application Grouping,” on page 335.

Type an Application Group name in the Field Name column and **APG** in the Type column, and then press Enter. Otherwise, if you press Enter without APG in the Type column, the panel attempts to interpret the Application Group name as a CMF data field.

When you add an Application Group to a Report Form, CICS PA adjusts the EOR marker to allow for the maximum width of an Application name (32 characters). However, when producing a report, CICS PA adjusts the Application Group column width to fit the longest Application name in the report.

Application Groups are stored in a repository. Report Forms are independent of repositories, so the panel does not validate the Application Group name.

- The special entry **EOR**.

EOR is managed by CICS PA. It signals the end of the report line. The fields listed above EOR fit on the report line and are included in the

report in the same order as they appear in the list. Those below EOR will not be reported and are ignored.

CICS PA automatically sets EOR when the Report Form is created and resets it if necessary when the Form is changed to ensure that the maximum page width of 132 is not exceeded. In positioning EOR, CICS PA allows for one blank separator between each field.

To produce a report line shorter than 132, either move EOR towards the top of the Form, delete unwanted fields, or move them below EOR.

- The special entry **EOX**.

EOX signals the end of the extract record. There are no restrictions on record length so EOX can be positioned anywhere in the list. EOX is initially positioned just below EOR. Fields above EOX are included in the extract, those below EOX are ignored. If EOX is not specified, EOR is used.

### Format Type

Either:

- The value **APG**, indicating that the Field Name refers to the name of an Application Group

or

- The presentation format of the field.

For numeric (A) fields, optionally specify one of the following:

**K** Divide value by 1000, typically for count fields.

**M** Divide value by 1000000, typically for count fields.

**KB** Kilobytes (divide by 1024), typically for storage fields.

**MB** Megabytes (divide by 1024x1024), typically for storage fields.

For clock (S) fields, you must specify either:

**TIME** Accumulation of elapsed time in seconds with requested precision of 0.0001 to 0.000001. Default: TIME with PRECISION(4).

### COUNT

Number of occurrences of the condition.

For time (T) fields START and STOP, you must specify one of:

**TIMET** Time in the format *hh:mm:ss.thm* (default)

**TIMEM** Time in the format *hh:mm*

**TIMES** Time in the format *hh:mm:ss*

**TIMEP** Time in one of the following formats, according to the requested precision:

**4 (default)**

*hh:mm:ss.thmi*

**5** *hh:mm:ss.thmij*

**6** *hh:mm:ss.thmiju*

**DATE** Date in the format *mm/dd/yyyy*

**DATEISO** Date in the format *yyyy-mm-dd*

**DATEM** Date in the format *mm/dd*

**DATEYR** Date in the format *mm/dd/yy*

### Fn (Function)

Field function. Specify **SEV** to indicate that the field is an alert reporting field. That is, the report column will contain the alert severity level when an alert is detected in this transaction field, otherwise this column will contain blanks.

#### Note:

1. SEV is only valid for CMF Clock (type S), Count (type A), and CICS PA derived (type D) fields.
2. If a SEV field is defined in the Form but not in the alert definition, it will always be blank in the report.
3. If an alert field is defined in the alert definition but there is no equivalent SEV field in the Form, no threshold checking will be performed for that field.
4. Report Forms created before the introduction of Performance Alerts are automatically upgraded to include Fn (function). This occurs automatically when the Form is edited using the CICS PA dialog.

Figure 161 on page 305 shows that alerts for fields RESPONSE and CPU(TIME) will be reported in the respective columns in the report.

### Field Description

This is a short description of the field. Enter line action **H** (Help) to display a more detailed description in a pop-up window.

### Length

The length of the field in the report or extract. This is used to calculate the width of the print line.

### Dictionary Definition

The description of the CMF data field in the format *informalname owner xnnn* where:

- *informalname* is the CMF field name
- *owner* is the CICS component that 'owns' the field
- *x* indicates the data type:
  - A - 32- or 64-bit count
  - C - character string
  - D - CICS PA derived time
  - P - packed decimal number
  - S - clock (time-count)
  - T - STCK time stamp
  - X - CICS PA calculated count
- *nnn* is the field identifier

Some special fields, such as APPLID and RESPONSE, are not defined in the CMF Dictionary and are given an owner of 'CICSPA'. They are either derived from the fixed section of the CMF record (for example, APPLID), or calculated from two or more other CMF fields (for example, RESPONSE).

### User Field Offset and Length

This is used for character user fields when only part of the field is to be reported. **Offset** is the position of the first character and **Length** is the number of characters from this position to be reported. For example, if the user field contains the value ABCDEFG, then specifying offset 1 and length 4 gives the output ABCD. Both values are required for character user fields and default to the entire field (offset 1 and maximum length).

CICS PA JCL generation translates these values to  
FIELDS(Character(Substr(offset,length),...

## Line Actions

The following line actions are valid on this panel:

- /** Display the menu of line actions.
- S** Select a field name from a list of all CMF fields appropriate to the type of Report Form and CICS release. See "Performance field selection" on page 312 for an example of the field selection panel.
- I** Insert a blank row after this row for entry or selection of another field.
- R** Repeat this row.
- RR** Repeat a block of rows bounded by two RRs.
- C** Copy this row.
- CC** Copy a block of rows bounded by two CCs.
- M** Move this row.
- MM** Move a block of rows bounded by two MMs.
- A** Move/Copy after this row.
- B** Move/Copy before this row.
- D** Delete this row.
- DD** Delete a block of rows bounded by two DDs.
- H** Field Help. Display a detailed explanation of the field. This is the same field selection panel displayed by line action **S**: see the example in Figure 76 on page 165.

### Note:

1. Line operations can span the EOR and EOX rows. CICS PA will reset EOR after the operation has completed to ensure the page width is not exceeded. Only one EOR and one EOX is retained, that closest to the top of the list. If EOX is deleted, EOR is assumed to define the length of the extract.
2. Fields can appear more than once in a Report Form with different types specified. For example: FCWAIT(TIME), FCWAIT(COUNT).
3. Deleted user fields (LIST and SUMMARY Forms) cannot be recovered.

## Primary Commands

The following primary commands are valid for the LIST, LISTX, and SUMMARY Report Form panels:

### FIND string

This command (or **F**) looks for the specified character string within the Field Name, Description, and Dictionary Definition columns. The string need only be enclosed in quotes if there are embedded spaces. The search is not case sensitive. The display scrolls to the row where the string is found and positions the cursor on the matching data. To find more occurrences, use **F5** or the **RFIND** command repeatedly.

If there is no match but the search did not begin at the start of the list, the screen does not change and the message \*Bottom of data reached\* is

displayed. Use **F5** or **RFIND** to search from the top. If there is no match in the entire list, the screen does not change and the message No CHARS xxx found is displayed.

#### **RUN or JCL**

Specify run-time options before submitting the Report Form JCL.

**SAVE** This command is only available from Edit mode and saves any changes you have made. To save any changes made in View mode, use **SAVEAS**.

Also available from **File** in the action bar.

#### **SAVEAS formname | datasetname(formname)**

This command is available from both Edit and View mode to save the contents of this Report Form under another name, either in the current data set (assumed if no data set name is provided) or in another suitable data set (if the name of a valid PDS is provided).

Also available from **File** in the action bar.

#### **RESET**

This command (or **RES**) removes all outstanding line actions and deletes any blank rows.

Also available from **Edit** in the action bar.

#### **CONFIRM ON | OFF**

**CONFIRM ON** (or **CONFIRM**) instructs CICS PA to prompt for confirmation when you request to Cancel from the Report Form panel when there have been updates.

With **CONFIRM OFF**, Cancel requests are actioned immediately, discarding any changes.

This command changes the setting only for the current Edit/View session. On exit, it reverts to the value set by **Cancel Confirmation** in CICS PA Settings.

Also available from **Confirm** in the action bar.

#### **UPGRADE vrm**

This command is used to upgrade the Report Form to the specified CICS version (vrm) provided it is a later release. CMF Fields for all CICS releases after the current release and up to the specified release are added to the bottom of the Form.

Also available from **Upgrade** in the action bar.

## **Upgrading Report Forms**

Report Forms are release-dependent. When you define a new Report Form you specify the CICS System or CICS Version (VRM) so that CICS PA can initialize the Form with fields appropriate to that release. However, you can later upgrade the Report Form to a later release by using **Upgrade** in the action bar of the Report Form panels. This facility is available for all Report Form types.

- \*. Upgrade to CICS version 640
- \*. Upgrade to CICS version 650
- 3. Upgrade to CICS version 660
- 4. Upgrade to CICS version 670
- 5. Upgrade to CICS version 680
- 6. Upgrade to CICS version 690

Figure 162. Upgrading your Report Form

Select **Upgrade** in the action bar or enter the **UPGRADE** command to introduce the new CMF fields of a later release of CICS into your Report Form. The new fields are inserted at the bottom of the Form as candidate fields. Upgrading does not affect the fields currently in the Form, nor does it affect the format of reports or extracts that use this Form. To then incorporate a new field into your report or extract, move it above the EOR or EOX marker respectively.

You can upgrade your Report Form to a CICS Version (VRM) that is not marked by an asterisk \*. To do this, select the VRM and press Enter. Otherwise, press Cancel to retain the Report Form at the current level.

## Performance field selection

Performance Field Selection allows you to select a field name from a list of available fields for insertion into your Report Form. This is the same facility as that used when specifying Selection Criteria. For more information, see:

- "Field selection" on page 162
- "Select a field" on page 163
- "Performance field help" on page 164

---

## LISTX Report Form

The LISTX Report Form can be used to tailor the format and content of the following reports and extracts:

- Performance List Extended report
- Cross-System Work report (sort sequence and limit are ignored)
- Performance extract (sort sequence and limit are ignored)

Like the LIST Report Form, LISTX defines the fields to be included, the order of the columns, and a title for the report. LISTX can also define a sort sequence for up to three fields and, for one of the sort fields, a limit on the number of records to be processed.

The Report Form panel has two views as there are too many columns of information to display in a single screen view. Scroll **Right** (F11) to toggle between the views.

When you select to Edit or View a Report Form, the first view shown in Figure 163 on page 313 is displayed by default.

```

File Edit Confirm Upgrade Options Help
-----
EDIT LISTX Report Form - XMPLISTX
Command ==> _____ More: >
Scroll ==> PAGE

Description . . . List Extended Report Form _____ Version (VRM): 690

Selection Criteria:
_ Performance * Page width . . 132_

Field
/ Name + S Type Limit Description
---
TRAN A Transaction identifier
---
STYPE * Transaction start type
---
USERID * User ID
---
RSYSID * Remote System ID
---
PROGRAM * Program name
---
TASKNO * Transaction identification number
---
STOP * TIMET Task stop time
---
RESPONSE * Transaction response time
---
DISPATCH * TIME Dispatch time
---
CPU * TIME CPU time
---
SUSPEND * TIME Suspend time
---
DISPWAIT * TIME Redispach wait time
---
FCWAIT * TIME File I/O wait time
---
FCAMCT * File access-method requests
---
IRWAIT * TIME MRO link wait time
---
EOR ----- End of Report -----
---
EOX ----- End of Extract -----

F1=Help F3=Exit F4=Prompt F5=Rfind F7=Backward F8=Forward
F10=Actions F11=Right F12=Cancel

```

```

File Edit Confirm Upgrade Options Help
-----
EDIT LISTX Report Form - XMPLISTX
Command ==> _____ More: >
Scroll ==> PAGE

Description . . . List Extended Report Form _____

Title . . First half title _____
Second half title _____

Field
/ Name + S Type Limit Length Dictionary Definition
---
TRAN A 4 TRAN DFHTASK C001
---
STYPE * 2 TTYPE DFHTASK C004
---
USERID * 8 USERID DFHCICS C089
---
RSYSID * 4 RSYSID DFHCICS C130
---
PROGRAM * 8 PGMNAME DFHPRG C071
---
TASKNO * 8 TRANNUM DFHTASK P031
---
STOP * TIMET 12 STOP DFHCICS T006
---
RESPONSE * 8 RESP CICS PA D901
---
DISPATCH * TIME 8 USRDISPT DFHTASK S007
---
CPU * TIME 8 USRCPUT DFHTASK S008
---
SUSPEND * TIME 8 SUSPTIME DFHTASK S014
---
DISPWAIT * TIME 8 DISPWTT DFHTASK S102
---
FCWAIT * TIME 8 FCIWTT DFHFILE S063
---
FCAMCT * 8 FCAMCT DFHFILE A070
---
IRWAIT * TIME 8 IRIOWTT DFHTERM S100
---
EOR -----
---
EOX -----

F1=Help F3=Exit F4=Prompt F5=Rfind F7=Backward F8=Forward
F10=Actions F11=Right F12=Cancel

```

Figure 163. LISTX Report Form (with Default Form)

The LISTX Report Form consists of the following fields:

#### Form Description

Up to 32 characters of text to describe the purpose of the Report Form.

This description is shown on the Report Forms panel to help you identify the Forms in the list. It is initially set to **List Extended Report Form**.

#### **Version (VRM)**

This identifies the CICS release that this Report Form was created for. It determines which CMF fields are available for selection in this Report Form.

#### **Selection Criteria**

Optionally, you can specify Selection Criteria to filter the data on time periods and field values to restrict the reporting to only the data that is of interest to you.

When a report specifies a Report Form and both have Selection Criteria specified, records must match both criteria to be included in the report.

**Line Actions:** The available line actions are:

- /** Display the selection list of line actions.
- S** Select (edit) the Selection Criteria. See "Specifying Selection Criteria" on page 156 for information on specifying Selection Criteria.
- A** Activate the Selection Criteria so they are included for reporting. Selection Criteria can only be activated if you have specified at least one Select Statement and it is not excluded. An asterisk \* indicates they are active.
- D** Deactivate the Selection Criteria. Any you might have specified here will not be used in reporting.

#### **Page Width**

Page width of the report, in the range 80 to 8000. The default is **132**.

When you increase the page width, you can include more fields in the report. Move EOR down the list or move fields above EOR to include the fields of interest. CICS PA automatically adjusts the EOR marker when the fields overflow the page width.

When you view the report output (using SDSF), scroll right to see the additional fields. Note that when you print the report, data that exceeds the maximum printer page width is truncated.

**Title** Title of the report. Specify up to 128 characters of text to describe the report. CICS PA concatenates the two lines of 64 exactly as entered to make one line which prints at the top of each page of the report below the heading. The default is blank (no title).

If the report uses a Report Form, and a title is specified on both, the title on the report takes precedence.

This option generates the TITLE1('left-half') and TITLE2('right-half') operands.

The title is ignored for extracts.

#### **Field rows**

One row for each field. The order of the fields in the rows dictates the order of the columns in the report or extract. The fields have the following attributes: Name, Sort Sequence (only certain fields), Type (only clock and time stamp fields), Limit (only one of the sort fields), Description, Length, Dictionary Definition.



## Field Name

One of the following values:

- The CICS PA field name. For CICS CMF fields, this is usually the Informal name or similar. The names for user fields are derived from the MCT. Use line action **S** or **Prompt** (F4) to select from a list of fields applicable to this Form type and CICS version.
- The Application Group name. For details, see Chapter 11, “Application Grouping,” on page 335.

Type an Application Group name in the Field Name column and **APG** in the Type column, and then press Enter. Otherwise, if you press Enter without APG in the Type column, the panel attempts to interpret the Application Group name as a CMF data field.

When you add an Application Group to a Report Form, CICS PA adjusts the EOR marker to allow for the maximum width of an Application name (32 characters). However, when producing a report, CICS PA adjusts the Application Group column width to fit the longest Application name in the report.

Application Groups are stored in a repository. Report Forms are independent of repositories, so the panel does not validate the Application Group name.

- The special entry **EOR**.

EOR is managed by CICS PA. It signals the end of the report line. The fields listed above EOR fit on the report line and are included in the report in the same order as they appear in the list. Those below EOR will not be reported and are ignored.

CICS PA automatically sets EOR when the Report Form is created and resets it if necessary when the Form is changed to ensure that the maximum page width of 132 is not exceeded. In positioning EOR, CICS PA allows for one blank separator between each field.

To produce a report line shorter than 132, either move EOR towards the top of the Form, delete unwanted fields, or move them below EOR.

- The special entry **EOX**.

EOX signals the end of the extract record. There are no restrictions on record length so EOX can be positioned anywhere in the list. EOX is initially positioned just below EOR. Fields above EOX are included in the extract, those below EOX are ignored. If EOX is not specified, EOR is used.

## S (Sort Sequence)

Specify a sort sequence of **A** (ascending) or **D** (descending) for one to three fields listed in the order of the required sort precedence. At least one sort field must be specified. The default is **TRAN ascending**.

Candidate sort fields are indicated by an asterisk \*. To change a candidate sort field to an active sort field, move it above EOR and overwrite the asterisk with an **A** or **D**. To remove a sort field, either move it below EOR, delete it, or overwrite the sort sequence with a blank or asterisk.

For one sort field only, you can specify a limit on the number of records to process at that level in the sort order.

## Format Type

Either:

- The value **APG**, indicating that the Field Name refers to the name of an Application Group

or

- The presentation format of the field.

For numeric (A) fields, optionally specify one of the following:

**K** Divide value by 1000, typically for count fields.

**M** Divide value by 1000000, typically for count fields.

**KB** Kilobytes (divide by 1024), typically for storage fields.

**MB** Megabytes (divide by 1024x1024), typically for storage fields.

For clock (S) fields, you must specify either:

**TIME** Accumulation of elapsed time in seconds with requested precision of 0.0001 to 0.000001. Default: TIME with PRECISION(4).

**COUNT**

Number of occurrences of the condition.

For time (T) fields START and STOP, you must specify one of:

**TIMET** Time in the format *hh:mm:ss.thm* (default)

**TIMEM** Time in the format *hh:mm*

**TIMES** Time in the format *hh:mm:ss*

**TIMEP** Time in one of the following formats, according to the requested precision:

**4 (default)**

*hh:mm:ss.thmi*

**5** *hh:mm:ss.thmij*

**6** *hh:mm:ss.thmiju*

**DATE** Date in the format *mm/dd/yyyy*

**DATEISO** Date in the format *yyyy-mm-dd*

**DATEM** Date in the format *mm/dd*

**DATEYR** Date in the format *mm/dd/yy*

**Limit** For one sort field only, you can specify a limit on the number of records to process at that level in the sort order.

For example, to produce a report of the worst 10 response times for each transaction id, specify the following at the top of the Form:

```

File Edit Confirm Upgrade Options Help
-----
                        EDIT LISTX Report Form - SAMPLX                      Row 1 to 6 of 6
Command ==> _____ Scroll ==> PAGE

Description . . . . List Extended Report Form _____ Version (VRM): 690

Selection Criteria:
_ Performance * _____ Page width . . 120_

Field
/ Name + S Type Limit Description
-- TRAN A _____ Transaction identifier
-- RESPONSE D 10 Transaction response time
-- CPU * TIME CPU time
-- PROGRAM * Program name
-- EOR ----- End of Report -----
-- APPLID * CICS Generic APPLID

```

Figure 164. LISTX Report Form (showing Sort Sequence and Limit)

### Field Description

This is a short description of the field. Enter line action **H** (Help) to display a more detailed description in a pop-up window.

### Length

The length of the field in the report or extract. This is used to calculate the width of the report line.

### Dictionary Definition

The description of the CMF data field in terms of the CMF informal name, CICS owner, data type, and field identifier. See “LIST Report Form” on page 305 for further information.

**Line Actions:** For the list of valid line actions for the LISTX Report Form panel, see “LIST Report Form” on page 305.

**Primary Commands:** For the list of valid primary commands for the LISTX Report Form panel, see “LIST Report Form” on page 305.

## SUMMARY Report Form

The SUMMARY Report Form defines the format and content of the following reports and extracts:

- Performance Summary report
- Transaction Profiling report
- Transaction Tracking Summary report
- Performance extract
- Summary HDB reports

The Report Form defines the fields to be included, the order of the columns, sort sequence, statistical functions, and a title for the report.

The Report Form panel has four views as there are too many columns of information to display in a single screen view. Scroll **Right** (F11) to toggle between the views.

When you select to Edit or View a Report Form, the view shown in Figure 165 on page 318 is displayed by default. This first view displays field descriptions. The second view displays data dictionary information for each field. The third view is relevant only when you use the RNG (Range) function. The fourth view displays

the alert reporting fields.

File Edit Confirm Upgrade Profiling Options Help

-----

EDIT SUMMARY Report Form - SAMPSUMM

More: >

Command ==>> Scroll ==>> PAGE

Description . . . . Summary Report Form

Version (VRM): 690

Selection Criteria:

Performance

Page width . . 132\_

Field	Sort					
/ Name +	K O	Type	Fn	Description		
TRAN	K A			Transaction identifier		
TASKCNT				Total Task count		
ALERT			SEV	Total Alert count or percentage		
RESPONSE			AVE	Transaction response time		
RESPONSE			MAX	Transaction response time		
RESPONSE			SEV	Transaction response time		
DISPATCH		TIME	AVE	Dispatch time		
CPU		TIME	AVE	CPU time		
CPU		TIME	SEV	CPU time		
SUSPEND		TIME	AVE	Suspend time		
SUSPEND		TIME	MAX	Suspend time		
DISPWAIT		TIME	AVE	Redispatch wait time		
FCWAIT		TIME	AVE	File I/O wait time		
FCAMCT			AVE	File access-method requests		

F1=Help F3=Exit F4=Prompt F5=Rfind F7=Backward F8=Forward  
F10=Actions F11=Right F12=Cancel

Figure 165. SUMMARY Report Form (with Default Form)

File Edit Confirm Upgrade Profiling Options Help

-----

EDIT SUMMARY Report Form - SAMPSUMM

More: >

Command ==>> Scroll ==>> PAGE

Description . . . . Summary Report Form

Title . . First half title

Second half title

Field	Sort									
/ Name +	K O	Type	Fn	Length	Dictionary	Definition	- User Field -	Offset	Length	
TRAN	K A			8	TRAN	DFHTASK C001				
TASKCNT				8	TASKCNT	CICSPA X902				
ALERT			SEV	8	ALERT	CICSPA A915				
RESPONSE			AVE	8	RESP	CICSPA D901				
RESPONSE			MAX	8	RESP	CICSPA D901				
RESPONSE			SEV	8	RESP	CICSPA D901				
DISPATCH		TIME	AVE	8	USRDISPT	DFHTASK S007				
CPU		TIME	AVE	8	USRCPUT	DFHTASK S008				
CPU		TIME	SEV	8	USRCPUT	DFHTASK S008				
SUSPEND		TIME	AVE	8	SUSPTIME	DFHTASK S014				
SUSPEND		TIME	MAX	8	SUSPTIME	DFHTASK S014				
DISPWAIT		TIME	AVE	8	DISPWTT	DFHTASK S102				
FCWAIT		TIME	AVE	8	FCIOWTT	DFHFILE S063				
FCAMCT			AVE	8	FCAMCT	DFHFILE A070				

F1=Help F3=Exit F4=Prompt F5=Rfind F7=Backward F8=Forward  
F10=Actions F11=Right F12=Cancel

```

File Edit Confirm Upgrade Profiling Options Help
-----
EDIT SUMMARY Report Form - SAMPSUMM More: >
Command ==> _____ Scroll ==> PAGE

Description . . . . Summary Report Form _____ Version (VRM): 690

Selection Criteria:
_ Performance _____ Page width . . 132_

/ Field Sort
/ Name + K O Type Fn From To Report
---
TRAN K A
TASKCNT
ALERT SEV
RESPONSE AVE
RESPONSE MAX
RESPONSE SEV
DISPATCH TIME AVE
CPU TIME AVE
CPU TIME SEV
SUSPEND TIME AVE
SUSPEND TIME MAX
DISPWAIT TIME AVE
FCWAIT TIME AVE
FCAMCT AVE
F1=Help F3=Exit F4=Prompt F5=Rfind F7=Backward F8=Forward
F10=Actions F11=Right F12=Cancel

```

```

File Edit Confirm Upgrade Profiling Options Help
-----
EDIT SUMMARY Report Form - SAMPSUMM More: >
Command ==> _____ Scroll ==> PAGE

Description . . . . Summary Report Form _____ Version (VRM): 690

Selection Criteria:
_ Performance _____ Page width . . 132_

/ Field Sort
/ Name + K O Type Fn ---- Alert ----
/ Name + K O Type Fn Severity Report
---
TRAN K A
TASKCNT
ALERT SEV WARNING PERCENT
RESPONSE AVE
RESPONSE MAX
RESPONSE SEV CRITICAL COUNT
DISPATCH TIME AVE
CPU TIME AVE
CPU TIME SEV WARNING COUNT
SUSPEND TIME AVE
SUSPEND TIME MAX
DISPWAIT TIME AVE
FCWAIT TIME AVE
FCAMCT AVE
F1=Help F3=Exit F4=Prompt F5=Rfind F7=Backward F8=Forward
F10=Actions F11=Right F12=Cancel

```

The SUMMARY Report Form consists of the following fields:

### Form Description

Up to 32 characters of text to describe the purpose of the Report Form.  
This description is shown on the Report Forms panel to help you identify the Forms in the list. It is initially set to **Summary Report Form**.

**Version (VRM)**

This identifies the CICS release that this Report Form was created for. It determines which CMF fields are available for selection in this Report Form.

**Selection Criteria**

Optionally, you can specify Selection Criteria to filter the data on time periods and field values to restrict the reporting to only the data that is of interest to you.

When a report specifies a Report Form and both have Selection Criteria specified, records must match both criteria to be included in the report.

**Line Actions:** The available line actions are:

- /** Display the selection list of line actions.
- S** Select (edit) the Selection Criteria. See "Specifying Selection Criteria" on page 156 for information on specifying Selection Criteria.
- A** Activate the Selection Criteria so they are included for reporting. Selection Criteria can only be activated if you have specified at least one Select Statement and it is not excluded. An asterisk \* indicates they are active.
- D** Deactivate the Selection Criteria. Any you might have specified here will not be used in reporting.

**Page Width**

Page width of the report, in the range 80 to 8000. The default is 132.

When you increase the page width, you can include more fields in the report. Move EOR down the list or move fields above EOR to include the fields of interest. CICS PA automatically adjusts the EOR marker when the fields overflow the page width.

When you view the report output (using SDSF), scroll right to see the additional fields. Note that when you print the report, data that exceeds the maximum printer page width is truncated.

**Title** Title of the report. Specify up to 128 characters of text to describe the report. CICS PA concatenates the two lines of 64 exactly as entered to make one line which prints at the top of each page of the report below the heading. The default is blank (no title).

If the report uses a Report Form, and a title is specified on both, the title on the report takes precedence.

This option generates the TITLE1('left-half') and TITLE2('right-half') operands.

The title is ignored for extracts.

**Field rows**

One row for each field. The order of the fields in the rows dictates the order of the columns in the report or extract. The fields have the following attributes: Name, Sort Sequence (only certain fields), Type (clock and time stamp fields only), Statistical Function (clock and count fields only), Description, Length, Dictionary Definition, Offset and Length (character user fields only).

**Field Name**

One of the following values:

- The CICS PA field name. For CICS CMF fields, this is usually the Informal name or similar. The names for user fields are derived from the MCT. Use line action **S** or **Prompt** (F4) to select from a list of fields applicable to this Form type and CICS version.
- The Application Group name. For details, see Chapter 11, “Application Grouping,” on page 335.

Before entering an Application Group name, enter APG in the Type column. Otherwise, the panel attempts to interpret the Application Group name as a CMF data field.

**Note:** When you add an Application Group to a Report Form, CICS PA adjusts the EOR marker to allow for the maximum width of an Application name (32 characters). However, when producing a report, CICS PA adjusts the Application Group column width to fit the longest Application name in the report.

- The special entry **EOR**.

EOR is managed by CICS PA. It signals the end of the report line. The fields listed above EOR fit on the report line and are included in the report in the same order as they appear in the list. Those below EOR will not be reported and are ignored.

CICS PA automatically sets EOR when the Report Form is created and resets it if necessary when the Form is changed to ensure that the maximum page width of 132 is not exceeded. In positioning EOR, CICS PA allows for one blank separator between each field.

To produce a report line shorter than 132, either move EOR towards the top of the Form, delete unwanted fields, or move them below EOR.

- The special entry **EOX**.

EOX signals the end of the extract record. There are no restrictions on record length so EOX can be positioned anywhere in the list. EOX is initially positioned just below EOR. Fields above EOX are included in the extract, those below EOX are ignored. If EOX is not specified, EOR is used.

### Sort Sequence

SUMMARY Sort fields are identified by **K** in the **Sort K** column. The report can be ordered in ascending or descending sequence, as specified in the **Sort O** column, **A** and **D** respectively. **P** in the **Sort O** column also indicates the key field is a Primary key field and will be sorted in Ascending sequence.

Sort fields identify the grouping required for summarization, and can be START and STOP time, or any character field, including character user fields.

A Sort Order of \* (asterisk) identifies a candidate sort field, and is ignored for reporting purposes.

To activate a candidate sort field, move it to the top of the Form and set Sort Sequence to A or D.

Key fields above EOR must appear first in the list of fields. The only fields that can appear ahead of a key field are TASKCNT or TASKTCNT. Key fields below EOR are ignored. Up to 8 key fields can be specified, and at least one must be specified. The order of the key fields in the list defines the sort and summarization precedence, with the first key field being the major sort field.

If you create a Report Form that consists entirely of key fields, with or without the special fields TASKCNT or TASKTCNT, then reports or extracts that you create using this Report Form will contain additional default fields. To suppress these default fields, specify at least one other field that is not a key field: for example, the numeric field RESPONSE. For more information, see “Customizing or suppressing default fields” on page 432.

### Alternate Sequencing

In addition to the Sort Key fields, one numeric field can be selected as Ascending or Descending to activate Alternate Sequencing. This will change the order of report lines from Sort Key to numeric field sequence. For example, specify Alternate Sequencing of D for RESPONSE time to see the transactions with the highest response time at the top of the report. Note that grouping by Sort Key for summarization remains unaffected.

### Primary key

Any key field is eligible to be a Primary key field. Primary key fields must be grouped together before other nonprimary key fields. There can be up to 8 Primary key fields but their total length must be no more than 255 characters. Primary key fields cannot be totaled. They are always printed in ascending order in the Summary Report.

Primary fields can be used to specify an enhanced Summary report that is summarized at the Platform, Application, Operation, and Version levels. The Application Platform report has two parts: a key section and a data section. The key section is based on one or more AC (Application Context) key fields and the data section of the report is based on the Summary Form.

### Format Type

Either:

- The value **APG**, indicating that the Field Name refers to the name of an Application Group
- or
- The presentation format of the field.

For numeric (A) fields, optionally specify one of the following units:

- K** Divide value by 1000, typically for count fields.
- M** Divide value by 1000000, typically for count fields.
- KB** Kilobytes (divide by 1024), typically for storage fields.
- MB** Megabytes (divide by 1024x1024), typically for storage fields.

For clock (S) fields, you must specify either:

**TIME** Accumulation of elapsed time in seconds with requested precision of 0.0001 to 0.000001. Default: TIME with PRECISION(4).

### COUNT

Number of occurrences of the condition.

For time (T) fields START and STOP, you must specify one of:

### TIMET

Time in the format *hh:mm:ss.thm*

### TIMEM

Time in the format *hh:mm*



### TIMES

Time in the format *hh:mm:ss* (default)

**DATE** Date in the format *mm/dd/yyyy*

### **DATEISO**

Date in the format *yyyy-mm-dd*

### **DATEM**

Date in the format *mm/dd*

### **DATEYR**

Date in the format *mm/dd/yy*

### **DATETIM**

Date and Time in the format *yyyy-mm-dd hh:mm:ss*

### **Fn (Function)**

The required statistical representation of clock and count fields. The valid functions are:

**AVE** Average value (this is the default).

**DEV** Standard deviation.

**MAX** Maximum value.

**MIN** Minimum value.

**TOT** Total.

*nnn* Peak percentile (50-100).

**SEV** Alert severity. Identifies the alert reporting fields, including the ALERT field.

You must also specify the parameters for this function: the alert severity level CRITICAL, WARNING, or INFO, and whether to report COUNT or PERCENT. Press the Right (F11) key until the Alert columns scroll into view:

—— Alert ——  
Severity Report  
——— ———

**Tip:** If you type SEV in the Fn column and then press Enter, the panel scrolls the Alert columns into view for you.

You can only enter values in the Alert columns if you have entered the SEV function in the Fn column.

Specifying the SEV function with Alert Severity and Report parameters generates the  
`fieldname(SEV(CRITICAL|WARNING|INFO,COUNT|PERCENT))` operand.

Note: The SEV function is only supported by the Performance Summary report and extract. If a Summary Form containing SEV fields is used in any other report, such as Profiling, the SEV function is ignored and the Field will adopt its default function.

**RNG** Range. This function calculates the number of tasks where the value of a field falls within a specified range or matches a single value. You can display the result in the report either as a count or as a percentage of tasks. You can use this function to produce distribution reports that answer questions such as: How many transactions had a response time between 0.4 and 0.6 seconds? What percentage of transactions had a response time of 1 second or longer?

To specify the parameters for this function, press the Right (F11) key until the Range columns scroll into view:

Range		
From	To	Report

**Tip:** If you type RNG in the Fn column and then press Enter, the panel scrolls the Range columns into view for you.

You can only enter values in the Range columns if you have entered the RNG function in the Fn column.

Specifying the RNG function with a Report value of COUNT (the default value) generates the RNGCOUNT() operand; a Report value of PERCENT generates the RNGPERCENT() operand.

#### From and To (RNG function only)

Specify a range of values or a single value:

- To specify a single value, in the From column enter an equal sign (=) followed immediately by the value you want to match (for example, =0). Leave the To column blank.
- To specify a range with only an upper limit or a lower limit, in the From column enter one of the following comparison operators:

> >= < <=

followed immediately by the limit value (for example, >1.0). Leave the To column blank.

- To specify a range with upper and lower limits, enter the lower limit value in the From column and the upper limit value in the To column, with no comparison operators. To fall within the range, a field value must be greater than or equal to the lower limit, and less than the upper limit:

*lower limit <= field value < upper limit*

For time fields, values with a decimal point (such as 1.0) are interpreted as seconds; integers (such as 1000) are interpreted as milliseconds.

#### Report (RNG or SEV function)

Specifies whether to display the result in the report as a count or as a percentage. Valid values are **COUNT** and **PERCENT**. If you leave this column blank, the default value is COUNT for distributions (RNG function) and PERCENT for alerts (SEV function).

#### Tips:

1. If you type C or P and then press Enter, the panel automatically completes the value for you.
2. COUNT and PERCENT generate identical column headings. To distinguish between columns for percentages and counts, check the column values under the headings: percentages appear with a decimal point, whereas counts are integers with no decimal point.

#### Alert Severity (SEV function only)

The threshold level for Performance Alert reporting, either **CRITICAL**, **WARNING**, or **INFO**.

#### Field Description

This is a short description of the field. Enter line action **H** (Help) to display a more detailed description in a pop-up window.

## Length

The length of the field in the report or extract. This is used to calculate the width of the print line.

## Dictionary Definition

The description of the CMF data field in terms of the CMF informal name, CICS owner, data type, and field identifier. See “LIST Report Form” on page 305 for further information.

## User Field Offset and Length

For character user fields when only part of the field is to be reported.

**Offset** is the position of the first character and **Length** is the number of characters (1-8) to be reported. For example, if the user field contains the value ABCDEFG, then specifying offset 4 and length 3 gives the output DEF. Both values are required for character user fields and default to offset 1 and maximum field length, limited to eight characters for the Performance Summary report.

CICS PA JCL generation translates these values to  
FIELDS(Character(SUBSTR(offset,length),...

```
File Edit Confirm Upgrade Profiling Options Help
-----
EDIT SUMMARY Report Form - SUMMUFLD
Command ==> _____ Scroll ==> PAGE
Description . . . . Summary Report Form _____ Version (VRM): 690
Selection Criteria:
_ Performance _____ Page width . . 132_

Field      Sort
/ Name +   K 0 Type  Fn Description
--- WBTOTAL_ -   AVE  Web Total requests
--- CLOCK1_ -  TIME  AVE  User field: CMF ID=USERNM1 S001
. . . . .
--- FIELD1_ K *      User field: CMF ID=USERNM2 C001
***** End of list *****
```

```
File Edit Confirm Upgrade Profiling Options Help
-----
EDIT SUMMARY Report Form - SUMMUFLD
Command ==> _____ Scroll ==> PAGE
Description . . . . Summary Report Form _____
Title . . First half title _____
          Second half title _____

Field      Sort
/ Name +   K 0 Type  Fn Length Dictionary Definition - User Field -
--- WBTOTAL_ -   AVE  8 WBTOTWCT DFHWEBB A235  _____
--- CLOCK1_ -  TIME  AVE  8 CLOCK1  USERNM1 S001  _____
. . . . .
--- FIELD1_ K *      12 FIELD1  USERNM2 C001  1_  8_
***** End of list *****
```

Figure 166. SUMMARY Report Form (with User Fields)

## Line Actions

For the list of valid line actions for the SUMMARY Report Form panel, see “LIST Report Form” on page 305.

## Primary Commands

The following primary command is available only on the SUMMARY Report Form panel:

### PROFILE

Applies only to the Transaction Profiling report. Inserts the special field PROFILE into the Form, immediately below the key fields. The PROFILE field accounts for the width of the headings (such as Report, Baseline, Delta, and Change%) that the Transaction Profiling report inserts after the key fields in the Form.

Also available from **Profiling** in the action bar.

For a list of other valid primary commands for the SUMMARY Report Form panel, see "LIST Report Form" on page 305.

---

## Chapter 10. Object Lists

An Object List defines a list of field values that can be used when specifying Selection Criteria for filtering the data for your reports and extracts. A typical use might be to define all the transaction IDs that belong to a particular application system. Object Lists enable you to define a group of related values once, then use it in many reports by simply specifying the name of the Object List in your Selection Criteria. This avoids duplicating the same list of values in different reports.

For example, instead of specifying Select Statements that include transactions B001,B002,B003,..., you predefine an Object List called BTRANS that has values B001,B002,B003,... Now when you specify the Select Statement, you simply specify BTRANS to include those transactions.

One Object List must only include values of the same type. They can be one of the following data types:

- Character field values. For example, Transaction IDs or User IDs
- Elapsed time ranges. For example, Response time from 100 to 200 milliseconds
- Count ranges. For example, File Control request count from 10 to 20

---

### Object Lists versus Resource Lists

CICS PA supports two similar types of list: Object Lists and Resource Lists. Both types define lists of field values that you can refer to by name, avoiding duplicating the same list of values in different places. However, they are used for different functions, are defined using different menu options, and are stored in different locations:

*Table 7. Differences between Object Lists and Resource Lists*

Type	Function	Menu option from the CICS PA Primary Option Menu	Storage location
Object Lists	Selection Criteria for filtering the data for reports and extracts	Option 4 <b>Object Lists</b> (see “Maintaining Object Lists” on page 328)	Object Lists data set
Resource Lists	<ul style="list-style-type: none"><li>• Selection Criteria for filtering data to be loaded into an HDB</li><li>• Resource field values for Application Grouping</li><li>• Resource field values for Statistics Alerts</li></ul>	<ul style="list-style-type: none"><li>• Option 5 <b>Historical Database</b> (edit a Template, edit its Selection Criteria, then select <b>Object Lists ► Resource Lists</b> from the action bar of the Performance Select Statement; see “Resource Lists” on page 647)</li><li>• Option 8 <b>Resource Definitions</b> then option 2 <b>Application Grouping</b> (see Chapter 11, “Application Grouping,” on page 335)</li></ul>	Repository

Several panels contain the action bar choice **Lists**: this links directly to the panel for creating and maintaining Object Lists or Resource Lists, as a quicker alternative to navigating via the Primary Option Menu.

You can copy an Object List to a Resource List. For details, see “Maintaining Object Lists” on page 328.

## Maintaining Object Lists

To display the list of Object Lists:

1. Use the **Options** menu on the action bar to nominate the Object Lists data set (if one has not yet been nominated, or you want to change the data set).
2. Select option 4 **Object Lists** from the CICS PA Primary Option Menu.

```
File  Confirm  Options  Help
-----
                                Object Lists                                Row 1 to 5 of 5
Command ==> _____ Scroll ==> _____

Object Lists Data Set . . : xxxx.CICSPA.OBJL

/   Name                Description                Changed                ID
-   FINANCE             Finance Transactions         2005/01/03 12:27 JCH02
-   FINRESP             Finance Transaction Response Time 2004/12/27 09:00 MKR08
-   HQTERMS              Terminals at headquarters      2005/01/02 08:57 DAM13
-   HQUSERS              Users at headquarters          2005/01/05 10:49 SEC22
-   STOCK               Stock Transactions             2005/01/05 16:57 DOC17
***** End of list *****
```

Figure 167. Object Lists

This panel lists all the Object Lists in the current Object Lists data set and allows you to select one at a time to view or modify.

The Object Lists are listed with the following user-defined attributes:

**Name** 1-8 character name in ISPF member name format, used to uniquely identify the Object List within the Object Lists data set. By default, the panel is sorted on the Name field.

**Description**

Free format text up to 32 characters that describes the contents and purpose of the Object List.

**Line Actions:** The following line actions can be entered against an Object List:

- /** Display the menu of line actions.
- E** Edit the Object List.
- S** Select the Object List (same as Edit).
- V** View the Object List. This looks like the Edit panel but has no 'hold' on the data and has no Save capability. SaveAs is available.
- D** Delete the Object List.
- R** Rename the Object List.
- C** Copy the Object List to a Resource List.

Copying an Object List expands and copies the values of any sublists that the Object List refers to. Resource Lists do not support sublists.

You cannot copy an Object List if any of the following conditions is true:

- The Object List refers to a nonexistent sublist.
- The Object List refers to itself as a sublist.
- The Object List specifies a value in the 2nd Value field. Resource Lists do not support ranges.

**Primary Commands:** The following primary commands are valid for this panel:

**NEW name [MODEL dsn(modelname)]**

This command creates an Object List. The new Object List can be modeled

on one of your existing Object Lists or it can be initialized by selecting one of the sample object lists included with CICS PA. If the model is in the current Object Lists data set, specify just the name of the Object List. If it is in another data set, specify the name of the data set and the Object List in the format **datasetname(modelname)**. If you do not specify a model name in the NEW command, the New Object List window is displayed.

Also available from **File** in the action bar.

See “Creating new Object Lists” for information on how to proceed.

#### SELECT name

This command (or **S**) selects the specified Object List for editing. If the Object List does not exist, it is created as if the **NEW** command was used.

Also available from **File** in the action bar.

#### SORT Name | Description | Changed | Id

This command sorts the list of Object Lists on one or two columns. The default sort field is **Name**. The sort disregards upper and lower case, and is ascending for all but the Changed column. The sort order is retained only until Exit or another SORT command is issued.

#### LOCATE string

This command (or **L** or **LOC**) is used to locate an entry in the list based on the primary sort field. By default, LOCATE operates on the **Name** field. The string should be no longer than the primary sort field and not enclosed in quotes. The display will scroll to the entry which matches the string, or the entry preceding it if an exact match is not found.

#### CONFIRM ON | OFF

**CONFIRM ON** (or **CONFIRM**) instructs CICS PA to prompt for confirmation when you request to Delete an Object List.

With **CONFIRM OFF**, Delete requests are actioned immediately. Deleted Object Lists cannot be reinstated.

This command changes the setting only for the current invocation of the Object Lists panel. On exit, it reverts to the default set by **Delete Confirmation** in CICS PA Settings.

Also available from **Confirm** in the action bar.

---

## Creating new Object Lists

To create a new Object List, do either of the following steps:

- In the command line, enter **NEW** followed by the name of the new Object List and an optional model Object List using the following syntax:

```

>>—NEW—newname—┐
                  │
                  └─MODEL—modelname—┐
                              │
                              └─datasetname(modelname)─┐

```

- Select **File** from the action bar, then choose **New**.

If you did not specify a model name in the NEW command, a pop-up dialog window is displayed as shown in Figure 168 on page 330. If you specified a model name, the New Object List panel is bypassed.

New Object List

Command ==> \_\_\_\_\_

Specify the name of the new Object List and optional model.

Name . . . **ASSETS**\_\_\_\_\_

Model . . **STOCK**\_\_\_\_\_

\_ Initialize with a sample object list

Figure 168. Specifying a New Object List

This panel allows you to create a new Object List. You must give the new Object List a name.

The new Object List can be modeled on one of your existing Object Lists or it can be initialized by selecting a sample object list. If you do not specify a model name or a sample, the object list will be initialized empty.

**Name** The name of the new Object List. A 1-8 character name in ISPF member name format. The name must be unique within the Object Lists data set.

**Model**

You can specify the name of an existing Object List as a model so that your new Object List is initialized with its contents. If the model is in the current Object Lists data set, specify just the name of the Object List. If it is in another data set, specify both the data set name and the Object List name in the format *datasetname(modelname)*.

**Initialize with a sample object list**

Enter / to select one of the sample object lists included with CICS PA.

When you have specified the required details, press Enter to create the Object List. You can change or delete any of the values that are copied from the model or sample and add new values.

---

## Specifying values in Object Lists

The Object List Edit panel is displayed when, from the Object Lists panel, you do either of the following steps:

- Create a new Object List.  
Use the **NEW** command or select **File->New** in the action bar.
- Select an existing Object List.  
Enter line action **E** or **S** against an Object List or use the **SELECT** command.

Alternatively, you can enter line action **V** to display the Object List View panel.

Use this panel to specify values in an Object List. The Object List can then be 'reused' many times in **Selection Criteria** in Report Sets.

You can specify any number of values in an Object List. You can also specify any number of Object Lists as sublists to form a meaningful hierarchical grouping of values. The order of entries in the list is of no consequence to CICS PA reporting.

You must specify separate Object Lists for character field values and numeric field values:



- For a **character field value** you can specify up to eight characters of free text entered in the **1st Value** column. Masking characters % and \* are allowed. Or in the **Sublist** column, specify the name of another Object List containing character values. Character field values are typically names. For example, for USERID, TRAN, or PROGRAM fields. There is no validation by the dialog of Object List character field values. However, at run time they are validated against the fields in the Selection Criteria. If the value length is shorter than the field length, it is padded to the right. If the value length is longer than the field length, a command error occurs.

```

File Edit Confirm Options Help
-----
                                EDIT Object List - BILLING                Row 1 to 4 of 4
Command ==> _____ Scroll ==> PAGE

Description . . . . Billing Transactions_____

Specify the Object List values:

/ 1st Value  2nd Value  Sublist
- BIL1      _____  _____
- BIL2      _____  _____
- %TRA*     _____  _____
- _____  _____  _____
***** End of list *****

```

Figure 169. Specifying Values for Character Fields in an Object List

- For a **numeric field value** you can specify an integer in the range 0 to 999999999. Enter single values in the **1st Value** column. For value ranges (spans), enter the 'From' value as the **1st Value** and the 'To' value as the **2nd Value**. Masking is not supported. Or in the **Sublist** column, specify the name of another Object List containing numeric values. Numeric values are for Decimal, Count, or Clock field types. For example, CPU, RESPONSE, TASKNO, FCAMCT, DISPWAIT fields.

**Note:** A Clock type field has two parts: an elapsed time in units of thousandths of a second, and a count of the number of occurrences of the condition. Integer values are appropriate for both parts.

```

File Edit Options Help
-----
                                EDIT Object List - BILRESP                Row 1 to 3 of 3
Command ==> _____ Scroll ==> PAGE

Description . . . . Billing Transact'n Response Time

Specify the Object List values:

/ 1st Value  2nd Value  Sublist
- 100      200      _____
- _____  _____  B1RESP_____
- _____  _____  B2RESP_____
***** End of list *****

```

Figure 170. Specifying Values for Numeric Fields in an Object List

The field lengths and formats are available in the Performance Select Statement, where Object Lists are used.

The Object List panel consists of the following fields:

## Description

Up to 32 characters of text to describe the purpose of the Object List. This description is shown on the Object Lists panel to help you distinguish between the Object Lists displayed. It is initially set to **CICS PA Object List**.

## 1st Value

A field value.

- If this is an Object List for **character field values**, the value can be up to eight characters of any nature. Masking characters % and \* are allowed. The percent % is for a single character substitution and the asterisk \* is for many or none. For example, you might specify %%T\* to select all programs which have T as the third character of their name. LETTERS, PETE, KAT, and KAT99 match this pattern.
- If this is an Object List for **numeric field values** for Decimal, Count, or Clock type fields, the value can be up to nine digits. The 1st value represents a single value if the 2nd value is blank, otherwise it represents the 'From' value in a range (span). Masking is not supported for numeric fields.

## 2nd Value

The 'To' value for a range (span) of numeric values for Decimal, Count, or Clock type fields. The value can be up to nine digits.

For character type fields, this value must be blank as value ranges are not supported.

## Sublist

The name of an Object List in the current Object Lists data set. The values in the sublist are inserted at JCL generation time. An Object List and its sublists must contain values for the same type of field, either all character type or all numeric type.

This facility enables reuse of Object Lists and allows you to build up a hierarchy of lists of related values.

When CICS PA generates the Report Set JCL, the values in the sublist are listed in the **SELECT** statements along with the explicitly specified values. The order in which the values are listed in the **SELECT** statement is the same order as they are specified on the Object List panel(s), however this order is of no consequence to the reporting process.

## Line Actions

/	Display the menu of line actions
I	Insert a new row
R	Repeat this row
C	Copy this row
M	Move this row
A	Move/Copy after this row
B	Move/Copy before this row
D	Delete this row

## Primary Commands

**SAVE** This command is only available from Edit mode and saves any changes you have made. To save any changes made in View mode, use **SAVEAS**.

Also available from **File** in the action bar.

**SAVEAS objlname | datasetname(objlname)**

This command is available from both Edit and View mode to save the contents of this Object List under another name, either in the current data set (assumed if no data set name is provided) or in another suitable data set (if the name of a valid PDS is provided). If you then Cancel from this panel, the contents of the current Object List remain unchanged.

Also available from **File** in the action bar.

**RESET**

This command (or **RES**) removes all outstanding line actions and deletes any blank rows.

Also available from **Edit** in the action bar.

**CONFIRM ON | OFF**

**CONFIRM ON** (or **CONFIRM**) instructs CICS PA to prompt for confirmation when you request to Cancel from the Object List panel when there have been updates.

With **CONFIRM OFF**, Cancel requests are actioned immediately, discarding any changes.

This command changes the setting only for the current Edit/View session. On exit, it reverts to the default set by **Cancel Confirmation** in CICS PA Settings.

Also available from **Confirm** in the action bar.



---

## Chapter 11. Application Grouping

Application Grouping enables you to create form-based performance reports or extracts that relate data to logical business units or functions known as *Applications*. In this context, an Application is a name that you associate with a set of performance data field values. For example, you can associate the Application name “Accounting” with the CICS transaction ID (TRAN) field values DEPT, WDRW, and ACC\* (that is, matching any transaction ID beginning with the characters ACC). Then you can create reports or extracts that refer to the performance data for those transaction IDs as belonging to the “Accounting” Application.

To use Application Grouping, you need to follow these steps:

1. **Define an Application Group** using option 8 **Resource Definitions** from the CICS PA Primary Option Menu.

An Application Group consists of one or more Applications that you want to present together, in a single report or extract. Before adding Applications to an Application Group, you must specify a performance data field, such as CICS transaction ID (TRAN), whose values will define the Applications. This is known as the *resource field* for the Application Group. All Applications in an Application Group refer to values of the same resource field. The resource field can be any character user field (defined in an MCT) or one of a limited set of predefined CMF character fields.

Each Application consists of a name and a set of resource field values that you want to associate with that Application name. You can either specify these values individually, or you can refer to a Resource List that contains the values. If you want to define the same Application in several Application Groups, then rather than specifying its field values separately in each Application Group, consider defining and referring to a Resource List.

For more information, see “Defining Application Groups” on page 336.

2. **Add the Application Group to a Report Form** using option 3 **Report Forms** from the CICS PA Primary Option Menu:
  - a. Insert a new field in the Report Form
  - b. In the Field Name column, enter the Application Group name
  - c. In the Type column, enter **APG**

Report Forms are independent of repositories (where Application Groups are stored), so CICS PA does not validate that the Application Group name that you enter has been defined. For details on editing a Report Form, see “Specifying Report Form contents” on page 304.

3. **Use the Report Form to create a report or an extract** using one of the following options from the CICS PA Primary Option Menu:
  - Option 2 **Report Sets**, to create a report or an extract from SMF files. For details, see Chapter 8, “Report Sets,” on page 143.  
or
  - Option 5 **Historical Database**, to create a report or an extract from an HDB. For details, see Chapter 22, “Using the HDB dialog,” on page 627.  
or
  - Option 7 **Profiling**, to create a Transaction Profiling report. For details, see “Transaction Profiling report” on page 185.

The Application Group name appears in the report or extract as a column heading. If a row of data matches a resource field value specified by an Application in the Application Group, the column displays the Application name. For example, you might define an Application Group named CRITICAL that consists of your mission-critical Applications, where each Application is defined by a set of transaction IDs.

Application Grouping is especially useful for summarizing the performance of Applications that involve several transaction IDs. If you specify an Application Group as a key field in a SUMMARY Report Form, the report or extract groups and then summarizes the input records for each Application. If you specify TRAN as a key field after the Application Group, then, after the summary for each Application, the report or extract shows summaries for each transaction ID of that Application. For example, suppose you have associated the Application name "Application A" with transaction IDs matching the masked value A\* (that is, transaction IDs beginning with the character A):

CRITICAL Group	Tran	#Tasks	Avg Response	
			Time	
Application A	A1	4	.0500	
Application A	A2	3	.0200	
Application A	A3	5	.0700	
Application A		12	.0508	<i>(combined summary for A1, A2, and A3)</i>
Application B	B1 ...			

By contrast, adding an Application Group to a LIST Report Form simply adds a column to the resulting report or extract, annotating each row with the associated Application name, with the same number of report lines as before: it does not perform any grouping or sorting.

Typically, you use Application Grouping to group input records for Applications based on CICS transaction IDs, as shown in the previous example. However, you can also use Application Grouping to group input records for other purposes, based on other performance fields. For example, you could define an Application Group where each "Application" is defined by the set of user IDs in a division of your enterprise. You can use this Application Group to track CICS usage patterns of staff in each division.

For examples of reports that use Application Grouping, see Figure 195 on page 413 and Figure 215 on page 447.

---

## Defining Application Groups

To define an Application Group:

1. Select option 8 **Resource Definitions** from the CICS PA Primary Option Menu.  
If you have not yet defined a repository, you can do so from here. Specify the name of an existing repository, or if you specify a new data set name, CICS PA prompts you to create a new repository. For details, see "Repository" on page 629.
2. If you already know that you want to refer to Resource Lists when defining Application Groups, use option 1 to define the Resource Lists first. For details on defining Resource Lists, see "Resource Lists" on page 647.

Otherwise, select option 2 **Application Groups** to display the Application Groups panel:

```

File Options Help
-----
Application Groups Row 1 to 1 of 1
Command ==> _____ Scroll ==> PAGE

Select to edit Application Group (APG). Enter NEW command to define a new APG.

/ Name Description Changed ID
_ BUSFUNC Business functions 2008/05/06 12:46 GXH
***** Bottom of data *****

```

Figure 171. Application Groups

- To define a new Application Group, enter **NEW** on the command line, and then enter a name for the Application Group in the pop-up window.

An Application Group name consists of 1-8 characters. The first character must be an alphabetic character (A-Z) or a national character (@, #, or \$). The remaining characters can be alphabetic, national, or numeric (0-9) characters. Do not specify a name that matches a CMF field name or the leading characters of a CMF field name. For example, do not specify APP, because it matches the leading characters of the CMF field name APPLID, among others. However, APPG is valid.

Report or extracts for this Application Group will contain a column heading consisting of the Application Group name followed by the word "Group".

To edit an existing Application Group, enter line action **S** next to the Application Group.

```

File Edit Confirm Lists Options Help
-----
EDIT Application Group - BUSFUNC Row 1 to 2 of 2
Command ==> _____ Scroll ==> PAGE

Description . . . Business functions
Resource field . . TRAN + User field offset Length

Specify the Application names and their resource values.

/ Application Name Values List +
_ Statistics collection $* (2)
_ Accounting A*
_ CICS-supplied transactions
_ Delivery D*
_ Finance F*
_ Unassigned transactions *
***** Bottom of data *****

```

Figure 172. Editing an Application Group

Before adding Applications to an Application Group, you must specify the resource field whose values will define the Applications. All Applications in an Application Group must refer to values of the same resource field, such as the CICS transaction ID (TRAN).

The order of the Applications on this panel is significant. Reports or extracts associate input records with the first matching Application. In the following example, Application B never appears in a report, because input records always match Application A first:

Application Name	Values
Application A	AP*
Application B	APB*

To enable matches with Application B, you would move Application B before Application A in the list. Report rows that do not match any Application contain **\*noapg\*** in the Application Group column. To specify a different label for these rows, insert an Application name such as “No match” at the end of the list, with a single asterisk (\*) as its value:

Application Name	Values
Application B	APB*
Application A	AP*
No match	*

This Application matches any records that have not already matched an Application in the list. If you do not want these rows to appear in a report, then, when requesting the report, specify selection criteria either to only include records that match the Applications or to exclude records that do not match any Application.

The Application Group details are:

#### Description

Free-format text of up to 36 characters describing the Application Group. This description appears on the Application Groups panel to help identify each Application Group, but it does not appear in reports or extracts.

#### Resource field

The name of the CMF character field whose values identify the Applications. For example, to identify Applications by their CICS transaction IDs, specify TRAN as the resource field name. The resource field can be either a user character field (specified in the MCT) or one of a limited set of predefined CMF character fields:

##### Field name

	Description
<b>TRAN</b>	Transaction identifier
<b>TERM</b>	Terminal ID
<b>USERID</b>	User ID
<b>PROGRAM</b>	Program name
<b>APPLID</b>	CICS Generic APPLID
<b>APPLPROG</b>	Application naming Program
<b>APPLTRAN</b>	Application naming Tran ID
<b>FCTY</b>	Transaction Facility name
<b>OTRAN</b>	Originating Transaction identifier
<b>OUSERID</b>	Originating User ID
<b>OAPPLID</b>	Originating CICS APPLID
<b>OFCTY</b>	Originating Transaction Facility name
<b>PHTRAN</b>	Previous Hop Data Transaction ID
<b>PHAPPLID</b>	Previous Hop Data APPLID



## PSBNAME

PSB Name

## OMEGWORK

OMEGAMON User work area

To select from the list of predefined fields, press **Prompt** (F4). If you specify a user field name, you must also specify an offset and a length, indicating the part of the field you want to compare with the Application values.

### User field offset and length

If you specify a user field in **Resource field** then you must also specify an offset and a length. These identify the part of the user field that you want to compare with the Application values. The offset is the position of the first character and the length is the number of characters from this position. To compare the entire field, specify offset 1 and the maximum field length. For example, if the user field contains the value ABCDEFG, specifying offset 1 and length 4 gives the output ABCD, which is then compared with the Application values.

If you specify a predefined CMF field in **Resource field** you cannot specify an offset or a length. The entire field value is always compared with the Application values.

### Application name

Free-format text of up to 32 characters, including mixed-case characters and blanks. This name appears in reports and extracts on rows that match the Application values, under the column heading for the Application Group.

### Values

For each Application, you must specify one or more values of the resource field that identify the performance records belonging to the Application. You can specify these values in either of two ways:

- Refer to a Resource List that contains the values.
- Specify the values individually.

The Values column shows only the first value of an Application. You can edit the first value directly in the Values column. If an Application has more than one value, the number of values appears in parentheses (n) next to the first value. To edit these other values, enter line action **S**. This displays the Value List panel, showing all of the values for the Application:

Command ==> \_\_\_\_\_

Application Name: Statistics collection

Specify Resource Values.

\$*	_____	#*	_____	_____	_____
	_____		_____	_____	_____
	_____		_____	_____	_____

If more than 16 values are required, you must use a Resource List.

Press END (F3) to save the values, CANCEL (F12) to abort.

Figure 173. Editing the resource field values for an Application

Masking characters % (exactly one character) and \* (any number of characters) are allowed. For example, specify TR\* to match all values starting with TR. To specify a null value, type two single quotes ' ' or " ". You can specify up to 16 individual values for an Application. If you need to enter more than 16 values, define a Resource List.

#### **(Resource) List**

A Resource List is a set of values that you can refer to by name. If you want to define the same Application in several Application Groups, then rather than specifying its field values separately in each Application Group, consider defining and referring to a Resource List. If you want to specify more than 16 values for an Application, then you must use a Resource List, even if you do not intend to refer to the Resource List in other Application Groups.

To select a Resource List, press **Prompt** (F4).

To define a Resource List, select **Lists** in the action bar. After defining the Resource List, you return to this Application Group panel, so that you can refer to the newly defined Resource List. For more details, see "Resource Lists" on page 647.

#### **Note:**

- a. Resource Lists and Application Groups are both stored in a repository. An Application Group can only refer to Resource Lists that are stored in the same repository as the Application Group.
- b. Application Groups cannot refer to Object Lists. Object Lists are stored in the Control Data Set specified in your CICS PA Profile. For details, see "Object Lists versus Resource Lists" on page 327.

---

## Chapter 12. CPU service units

The CPU Service Unit (SU) is a conversion of the CMF CPU time using a conversion factor that is specific to the processor where the transaction is executed.

CPU service unit factors provide a standardized unit for measuring CPU consumption that allows for the inherent differences in processors. By specifying the CPU SU conversion factor in CICS PA, CMF CPU times can be converted to a common unit of measurement: service units. This allows you to more accurately compare workload performance when it is being performed on different processors, and to provide consistent measurement for SLA and chargeback.

### Reporting with the CPUSU derived field

The derived field CPUSU is available in List, ListX, and Summary Forms and List and Summary Templates.

You can report and extract converted values from HDBs either by specifying CPUSU in the Template and thereby loading it in the HDB or by specifying it in the Form. If the HDB is loaded with the CPUSU value, it will be reported and extracted as for any other field. In this case, the specification of the conversion factor in either the definition or file will be ignored. If on the other hand derived field CPUSU was not loaded into the HDB but is specified in the Form and the CPU field is in the HDB, the conversion factor will be used to calculate CPUSU value.

#### Attention:

1. Reporting CPUSU for a Summary HDB that was not loaded with the CPUSU value has a potential risk which might render the CPUSU value incorrect. This will occur when the summarized data in the HDB comes from Images with different CPU SU conversion factors. This means that a single CPU SU conversion factor does not apply to all transactions in the summarized data. To avoid this problem, ensure that all summarized transactions are eligible to use the same CPU SU conversion factor.
2. The specification of the CPUSU value in functions such as Selection Criteria and Form Range must include a decimal point. Not specifying a decimal value will result in the value being interpreted as a decimal fraction.

### Rules for applying conversion factors

CPU SU conversion factors can be specified in two places:

1. As an image-specific value defined in the repository (Definition)
2. As a file-specific value specified in the CICSPA command suboperand SUFACTOR (File).

The following rules govern their application.

1. File and Definition conversion factors cannot be combined in the execution of a single CICSPA command. If File conversion factors are specified, any Definition conversion factors are all ignored.
2. File conversion factors are specific to each file and can be specified for individual IN ddnames or log stream names.

3. If an IN ddname is a concatenation of multiple SMF files, the specified conversion factor will apply to all files in the concatenation.
4. If multiple SUFACTOR operands refer to the same ddname or HDB name, only the first SUFACTOR conversion factor will be used for the input.
5. If one or more file SUFACTOR values are specified then any ddname or input without an SUFACTOR takes the current processor default.
6. In case of HDB reporting, the SUFACTOR will be available as an operand and will apply to all containers included in the report. In other words, there will not be a container-specific conversion factor specified or applied.

## Defining CPU service unit conversion factors

The CPU Service Unit Conversion Factors definition allows you to specify a conversion factor for each individual image.

### About this task

When you open the CPU Service Unit Conversion Factors panel CICS PA calculates and displays a conversion factor for the current image. You can use the following line actions to insert, delete, and update individual entries in this panel:

- I**      Insert a conversion factor.
- D**      Delete a conversion factor.
- U**      (Use) Apply the conversion factor for the current Image to this entry.

In this way you can enter any image name. It does not have to be defined in personal systems or shared systems.

Alternatively, you can press the **Prompt** key in the Image Name field to apply this factor or another value to multiple selected images.

### Procedure

1. Select option 8 **Resource Definitions** from the CICS PA Primary Option Menu.
2. Select option 4 **SU Conversion Factors**. The CPU Service Unit Conversion Factors panel is displayed:

File Systems Edit Options Help
Row 1 to 1 of 1

Command ==> \_\_\_\_\_
Scroll ==> PAGE

Specify the CPU Service Unit conversion factor for each Image.

The Conversion Factor for current Image WXY2 is 22289.563

Image	Conversion	Description
/ Name +	Factor	

\*\*\*\*\* Bottom of data \*\*\*\*\*

Figure 174. CPU SU Conversion Factors

3. Press the **Prompt** key in the Image Name field. The Image Selection panel is displayed:

```

Image Selection
Row 1 to 4 of 4
Command ==> _____ Scroll ==> PAGE
Select option and one or more Images then press EXIT.

1 1. Leave CPU SU factor blank
2. Set to current Image CPU SU factor
3. Set to CPU SU factor . . . . . _____

Image      Description
. AB01      ** New Image system **
. FTF1      ** New Image system **
. MV2A      System added by take-up
. MV2B      System added by take-up
. MV2C      System added by take-up
. WXY1      System added by take-up
. ZT01      System added by take-up
***** Bottom of data *****

```

Figure 175. CPU SU Image Selection

This panel lists the images defined in Personal System and Shared System definitions that are available for selection. If the same image is defined in both Personal Systems and Shared Systems the description is taken from the Personal System definition. Any images that are already listed on the CPU Service Unit Conversion Factors panel are omitted.

4. Type line action **S** to select one or more images for which you want to provide a CPU SU conversion factor.
5. Enter an option number to specify the conversion factor for the selected images.
  - 1 Do not initialize the selected images. This leaves the conversion factor for the selected images blank so that you can specify them individually in the CPU Service Unit Conversion Factors panel.
  - 2 Initialize the selected images using the conversion factor value for the current system.
  - 3 Initialize the selected images using a specified conversion factor value that you provide. The value must be a decimal number or integer in the range 1 - 999999999 (nine 9s).
6. Press **Enter** to apply the conversion factor to the selected images.
7. Press **Exit** (F3) to complete your selection and return to the CPU Service Unit Conversion Factors panel.



---

## Chapter 13. Performance alerts

Performance alert reporting provides you with the ability to monitor and report adverse transaction performance conditions based on predefined thresholds. It complements statistics alert reporting to support your requirements for performance compliance and problem detection.

A performance alert can also be specified in a List HDB definition, resulting in associated performance alert data being loaded into separate containers. This allows analysis of the alerts using the CICS PA plug-in and standard List HDB reports, as well as DB2.

CICS CMF data is measured against user-defined performance thresholds and only transactions that fail alert thresholds are reported or flagged in the report. The Performance List and Summary reports and extracts compare nominated fields in each transaction's resource values against those defined in the alert definition. Only matching transactions are compared against the corresponding threshold values and the non-compliant transactions are reported.

Existing Reports Sets can be used to satisfy both your standard and alert reporting needs, including performance extracts into CSV data sets or loaded into DB2 tables.

Performance alert definitions are stored in the Repository. A performance alert definition is stored as two related parts, a template and a set of threshold values based on the template.

Using a Report Form to format your report is optional. This is because you can also use the performance alert template to format your report.

The performance alert definition allows you to define resource fields and values for transaction filtering. Transaction filtering associates specific threshold values with specific transactions. The resource fields are type character identification fields such as TRAN, APPLID, and USERID, or Application Group. You can specify from 1 to 3 resource fields with a value for each.

Each set of resource fields has an associated set of data fields with severity threshold values. This means that in a single alert definition, you can define different severity threshold values for different resources. This is shown in the following example.

TRAN	APPLID	USERID	Info RESPONSE TIME	Warning RESPONSE TIME	Critical RESPONSE TIME
HR*	PROD*			*1.1	
HRP*	PRODHR	PER*	<0.7	<1.0	>=1.0
HRP*	PRODHR	SYD*	<0.1	<0.5	>=0.5
HRP*	PRODHR	NY*	<0.4	<0.7	>=0.7

Figure 176. Example: Performance alert definition

This example shows three different resources each with a different set of threshold values. It also shows an adjustment value for the Response Time Warning column.

This is a shortcut method of applying global adjustment to threshold values without editing every value in the definition. The adjustment value is applied to every threshold value in the column.

The structure of the alert definition is based on a template which defines the resource fields, data fields, severities and layout of the alert definition. The template provides flexibility to construct and modify the alert definition to include the resource and data fields you want. The layout of the template is particularly important as it acts as a pseudo Report Form when no Form is specified in the report, and therefore the field order determines the report layout.

A performance alert definition has the following attributes:

- Template containing a maximum of three resource field names that are used to identify selected transactions for alert comparison. The template must contain at least one resource field, such as TRAN.
- Alert Values definition containing resource field values, such as FINC.
- Template containing at least one CMF data field name, such as RESPONSE. These are the fields for which performance threshold values are specified for transaction comparison.
- For each CMF data field, the Alert Values definition contains the threshold value for at least one of the Critical, Warning and Informational levels.
- Optionally, the template can contain additional CMF report fields if you intend to use the performance alert definition as a Report Form. These optional fields are not displayed in the Alert Values definition.

To create a performance alert report or extract, follow these steps:

1. **Define a performance alert definition.**

To begin:

- a. Select option 8 **Resource Definitions** from the CICS PA Primary Option Menu.
- b. Select option 3 **Performance Alerts** from the Resource Definitions Menu.

For more information, see “Defining performance alerts” on page 347.

2. **Use the performance alert definition to create a Performance List or Summary report.**

To create a Performance List or Summary alert report:

- a. Select option 2 **Report Sets** from the CICS PA Primary Option Menu.
- b. Select or create a report set.
- c. Expand the **Performance Reports** category, and then select **List or Summary**.

For more information, see “Performance List report” on page 170 or “Performance Summary report” on page 179.

3. **Use the performance alert definition to create a Performance List or Summary extract.**

To create a Performance List or Summary alert extract file:

- a. Select option 2 **Report Sets** from the CICS PA Primary Option Menu.
- b. Select or create a report set.
- c. Expand the **Extracts** category, and then select **Performance**.

For more information, see “Performance Data extract” on page 257.

For examples of performance alert reports and extracts, see “Performance alert examples” on page 352.



## Defining performance alerts

To create a performance alert definition:

1. Select option 8 **Resource Definitions** from the CICS PA Primary Option Menu.
2. On the Resource Definitions Menu, specify the data set name of the Repository, then select option 3 **Performance Alerts**.

This displays the Performance Alert Definitions panel:

```
File Options Help
-----
                                Performance Alert Definitions          Row 1 to 3 of 3
Command ==> NEW_____ Scroll ==> PAGE_____

Edit Alert Template (T) or Alert Values (S). Enter NEW command to define a new
Alert Definition.

/ Name                Description                Changed                ID
-- PRODXCP            Production System 1 Alerts  2008/05/01 16:34  AXS
-- PROD2XCP           Production System 2 Alerts  2008/05/01 16:34  AXS
-- PROD3XCP           Production System 3 Alerts  2008/05/01 16:34  AXS
***** Bottom of data *****
```

Figure 177. Performance Alert Definitions

3. To define a new Alert Definition, enter **NEW** on the command line, and then enter a name for the Alert Definition in the pop-up window. You can bypass the prompt by specifying the name in the command. For example, **NEW PROD4XCP**.

Alternatively, you can create a new Alert Definition modeled on an existing one. Enter line action **C** next to the definition you want to copy. In the pop-up window, enter the name of the new definition and destination repository. If a definition of the same name already exists in the destination repository, it will not be overwritten unless you select the option **Replace Alert Definition if it exists**.

An Alert Definition name consists of 1-8 characters. The first character must be an alphabetic character (A-Z) or a national character (@, #, or \$). The remaining characters can be alphabetic, national, or numeric (0-9) characters.

4. The definition has two parts: the template, which is defined first, and the alert values based on the template.

The following line actions can be entered against an Alert Definition:

/ Display the menu of line actions.

**S or E** Select to edit the alert values.

**T or TE**

Edit the alert template.

**V** View the alert values.

**TV** View the alert template.

**D** Delete the alert definition. Note that deleting an alert definition does not affect any existing HDB container data sets that are based on it.

**C** Copy the alert definition to this or another repository.

5. To edit the template of an existing Alert Definition, enter line action **T** next to the Alert Definition. If you do not intend to make and save changes, enter line action **TV** to view the template.

The Alert Template edit panel has four views. To cycle through the views, press **Right** (F11).

File
Edit
Confirm
Options
Help

EDIT Performance Aert Template - PROD4XCP
Row 1 of 18 More: >

Command ==>
Scroll ==> CSR\_

Description . Performance Alert Definition
Page width . . 104

Field	Sort			----- Alert -----	
/ Name +	K	O	Type	Function	Severity Report
TRAN	K	A		RESOURCE	
TASKCNT					
ALERT				SEV	CRITICAL PERCENT
ALERT				SEV	WARNING PERCENT
RESPONSE				AVE	
RESPONSE				SEV	CRITICAL PERCENT
RESPONSE				SEV	WARNING PERCENT
RESPONSE				MAX	
CPU			TIME	AVE	
CPU			TIME	SEV	CRITICAL PERCENT
CPU			TIME	SEV	WARNING PERCENT
CPU			TIME	MAX	
EOR					
APPLID	K	*		RESOURCE	
ALERT				SEV	INFO PERCENT
RESPONSE				SEV	INFO PERCENT
CPU			TIME	SEV	INFO PERCENT
EOX					

\*\*\*\*\* Bottom of data \*\*\*\*\*

Figure 178. Performance Alert Template edit panel - initial view

Enter a description and specify template details:

Description

Free-format text of up to 36 characters describing the alert definition. This description appears on the Performance Alert Definitions panel to help identify each definition, but it does not appear in reports.

The template details are:

Field Name

The name of any CMF field. Fields that do not have SEV nor RESOURCE in the Function field will be treated as normal report fields when the template is used in place of a Report Form when reporting. Fields that have SEV or RESOURCE can also be used for reporting as described below.

Relevant to: List and Summary reports.

List report: Only the first of multiple entries for the same field+type+alert function is reported.

Summary report: Field name **ALERT** provides the total count or percentage of transactions for each alert severity level (Critical, Warning, or Info) for the summary key. If no alerts are specified, the ALERT field name is ignored.

**Sort K** Relevant to: Summary reports. Same function as in a Summary Report Form.

Sort O

Relevant to: List and Summary reports.

List report:

\* Field is excluded from the report.

A, D or blank

Field is included in the report.

Summary report: Same function as in a Summary Report Form.

**Type** Relevant to: List and Summary reports. Same function as in the Report Form.

**Function**

Relevant to: List and Summary reports. Same function as in the Report Form with the following additional values:

**RESOURCE**

Indicates the resource field to be included in the alert values definition. At least one and a maximum of three RESOURCE fields must be specified. If a RESOURCE field is type APG (Application Group), it must be the first RESOURCE field specified.

**SEV** Indicates an alert field to be included in the alert values definition.

**Alert Severity**

Relevant to: Summary reports. Field alert severity, either CRITICAL, WARNING, or INFO.

**Alert Report**

Relevant to: Summary reports. Field alert reporting type:

**COUNT**

Total number of field alerts for the severity.

**PERCENT**

Percentage of field alerts for the severity based on the number of transactions processed.

**Page width**

Relevant to: List and Summary reports. This is a calculated, display-only field showing the width of the report page containing all the fields above the EOR indicator. It is displayed when you press Enter or scroll right (F11) or left (F10). It is automatically adjusted as you add or delete fields above EOR.

Note: The page width automatically adjusts to the calculated total length of the fields above EOR (plus one space between fields). This is in contrast to the way it works in Report Forms where you can specify the page width and EOR automatically moves to fit within the specified width.

The following line actions can be entered against a row in the template:

- / Display the menu of line actions.
- S Select a field name from a scrolling prompt list of fields with long descriptions.
- I Insert a new entry.
- R Repeat this entry.
- C Copy this entry.
- M Move this entry.
- A Copy/Move after this entry.
- B Copy/Move before this entry.
- D Delete this entry. When you delete alert fields from the template, associated alert values are also deleted.
- H Field help with long description.

**RR, CC, MM, DD**

Block commands: Repeat, Copy, Move, Delete

When the template specification is complete, press F3 to save changes.

6. To specify the threshold values, enter line action **S** or **E** next to the alert definition. If you do not want to make and save changes, enter line action **V** to view the definition.

The Alert Values edit panel might have too many columns to display in a single view. Scroll **Right** (F11) or **Left** (F10) to see all columns.

```

File Edit Options Help
-----
EDIT Performance Alert Values - EMERALDS      Row 1 of 8 More: >
Command ==> _____ Scroll ==> CSR_

1          2          Critical      Warning      Critical 3
TRAN      APPLID    SUSPEND      SUSPEND      CPU
/          /         COUNT        COUNT        TIME 4
H* 5      /         /         *5 7      /
HRP* 6    PROD    >10      >5      >0.5
HRP* 6    PROD    >7       >3      >0.5 8
HRP*      PROD    >5       >2      >0.5
HR*      TEST    >15      >10     >0.5
H*      TEST    >20      >15     >0.5
H*      TEST    >17      >12     >0.5
H*      FINANCE >23      >15     >0.5
H*      >27      <10     <0.5
***** Bottom of data *****

```

Figure 179. Performance Alert Values edit panel (with filter)

The fields and their order in the panel are determined by the Template and are altered with changes to the Template. Only fields with Function RESOURCE and SEV from the Template are displayed here. Report fields are excluded.

This panel is used to specify the resource and threshold values associated with the resource and alert fields in the Template. In addition, the panel allows for global adjustment of threshold column values for easy alteration of thresholds.

Complete the performance alert definition by specifying threshold values:

- 1 Resource fields.
- 2 Alert fields.
- 3 Field severity specified in the template. Possible values are: **Critical**, **Warning**, **Info**.
- 4 Field type. **TIME** or **COUNT** for **S** type fields, **APG** for Application Group fields, blank for all others. If there are no S type or APG fields specified, this row is not displayed.
- 5 Filter. Optional value used to filter the display to only show matching alert resource values. The filter value is not saved when you exit the panel. If two or three filter values are specified, they are AND'd.
- 6 Resource field value. Used to select the transactions to compare with the associated thresholds. Resource values support wild characters (for example, PRODC\*) and application group names. A blank resource value field will not be checked and is the same as specifying \* (asterisk).

Resource field columns remain fixed while other columns are scrollable left and right. At least one resource value must be specified in each row.

- 7 Threshold adjustment value. This is a number with or without a

preceding operator. It is used to adjust all threshold values in the column. Supported mathematical operators are: + - \* / (add, subtract, multiply, divide). Supported comparison operators are: = < > =< >= <> != .

If you specify a number with a mathematical operator, all threshold values in the column are adjusted by performing the specified mathematical operation. For example, \*2 will double all values in the column. If the adjusted result is negative, it is set to zero.

If you specify a number without a mathematical operator, it replaces all threshold values in the column.

If you specify both a mathematical operator and a comparison operator in the adjustment value, the comparison operator is ignored.

Press Enter to do the adjustment. The adjustment field is then cleared.

Enter **RESET** in the adjustment field to clear all threshold values in the column.

**8** Threshold value for the alert field and severity combination. Attributes are:

- The field can contain numeric characters only and comparison operators = < > =< >= <> != . The default operator is >.
- Supports a decimal point. For example, 0.000001
- The maximum length for the number, including the decimal point, is 9 characters. For example, 999999999 is valid, but 9999999.00 is invalid.
- Storage fields will allow all currently supported unit values: **K, M, G, T, P**. The value specified will be multiplied by the unit using 1024 base. This is the same implementation as statistics alerts.
- Time fields of type seconds and milliseconds will both specify base unit of seconds. That is, a 500 millisecond threshold will be specified as 0.5.

The following line actions can be entered against a row of values:

/	Display the menu of line actions
I	Insert a new row
R	Repeat this row
C	Copy this row
M	Move this row
A	Copy/Move after this row
B	Copy/Move before this row
D	Delete this row

When the definition is complete, press F3 to save changes.

7. The definition can now be used for performance alert reporting in List or Summary reports or extracts.

The EDIT Performance Alert Values panel allows you to specify the actual resource fields values and alert fields thresholds that constitute the alert.

You can specify different thresholds for different resource values, thus allowing you to measure different resources within the same alert report run.

The resource values are AND'd. That is, a transaction's resource values must match ALL the resource values in the alert entry to be eligible for threshold checking.

The order of the resource fields is only important when the alert definition is used in place of a Form in the report. For the List report, the resource fields will be reported in the order and position they are defined in the Template. If printed in the Summary report, they will determine the summary key, hence the summarized data values. The Summary report will generate errors if the resource fields do not conform to summary key rules.

Since you can specify one, two, or three resource fields in the Template, this panel is dynamic in terms of the number of resource field columns.

The order of the alert entries is important since a transaction's field values will only be compared against the thresholds for the first alert entry that matches the transaction's resource values. Once the resource values combination is matched, no other alert entries are checked, regardless of whether the matched entry generates an alert. Only when the resource values do not match, then the next entry in the alert definition is checked against the transaction. This makes it extremely important to define the resource values in the correct order when using wild characters in the resource values.

If a row contains all \* (asterisk) resource values, it should be placed last in the list as it will be a catchall for transactions that don't match previous resource values. If it is placed before rows with resource values, it will render the subsequent rows irrelevant as it will match all transactions.

The threshold levels within a single field are hierarchical. That is, Critical severity is checked before Warning, which is checked before Information, with only the first exceeded threshold level reported.

Each alert field is independent of all other fields, with each field checked and reported separately.

The order of the alert fields is only important when the alert definition is used in place of a Form in the report.

---

## Performance alert examples

Performance alerts are shown in the following report examples. Extract data sets can be created with record layouts the same as the report columns.

**Note:** The minimum Severity level selected for reporting is used to report transactions that have at least that level of reporting in *any* of the severity fields. This could result in transactions being reported with severity lower than the specified severity when the transaction also has one or more severity fields that meets the specified severity criteria. For example, if the user specifies SEVERITY(CRITICAL) for the report, only transactions with Critical severity are reported, however, if a transaction also exceeds Warning or Info thresholds, the lower severity will be also reported.

### Example 1

```
CICSPA LIST(OUTPUT(LIST0001),  
            ALERTDEF(EXAMPLE1),  
            SEVERITY(ALL))
```

LIST0001 Printed at 16:50:15 10/13/2009

Data from 07:50:50 3/26/2009

APPLID IYK2Z1V2

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Tran	SC	Term	Userid	RSID	Program	TaskNo	Stop	Response	Response	Sev	Dispatch	User	CPU	Suspend	Suspend	Sev	DispWait	FC	Wait
							Time	Time	Time	Time	Time	Time	Time	Count	Count	Time	Time		
CSSY	U		CBAKER		DFHAPATT	20	07:50:50.574	.0038			.0001	.0001		1		.0000	.0000		
CSSY	U		CBAKER		DFHAPATT	21	07:50:50.576	.0060			.0002	.0002		3		.0000	.0000		
CSSY	U		CBAKER		DFHAPATT	22	07:50:50.582	.0105			.0016	.0004		5		.0041	.0000		
CSSY	U		CBAKER		DFHAPATT	19	07:50:50.606	.0364	Info		.0238	.0012		6	Info	.0053	.0000		
CSSY	U		CBAKER		DFHAPATT	17	07:50:50.661	.0913	Warning		.0272	.0016		10	Warning	.0537	.0000		
CGRP	U		CBAKER		DFHZCGRP	13	07:50:50.713	.1452	Warning		.0274	.0015		6		.1134	.0000		
CSSY	U		CBAKER		DFHAPATT	16	07:50:50.721	.1520	Warning		.0269	.0019		18	Warning	.1096	.0000		
CSSY	U		CBAKER		DFHAPATT	14	07:50:50.733	.1648	Warning		.0258	.0012		6		.1353	.0000		
CSSY	U		CBAKER		DFHAPATT	18	07:50:50.844	.2747	Warning		.0565	.0033		16	Warning	.2072	.0000		
CSSY	U		CBAKER		DFHAPATT	12	07:50:50.894	.3263	Warning		.0551	.0047		39	Warning	.2422	.0000		
CSSY	U		CBAKER		DFHAPATT	11	07:50:50.909	.3409	Warning		.0617	.0060		13	Warning	.2649	.0000		
CSSY	U		CBAKER		DFHAPATT	15	07:50:51.042	.4730	Warning		.0764	.0093		73	Critical	.1103	.0000		
CPLT	U		CBAKER		DFHSIPLT	8	07:50:56.495	5.9899	Critical		1.0481	.0619		93	Critical	.0031	.0210		
CSSY	U		CBAKER		DFHAPATT	11	07:50:56.552	5.9837	Critical		2.2985	.5642		1188	Critical	.3840	.5694		

Figure 180. Performance Alerts - List report with SEVERITY(ALL)

**Example 2**

CICSPA LIST(OUTPUT(LIST0002),  
ALERTDEF(EXAMPLE2),  
SEVERITY(INFO))

LIST0002 Printed at 16:50:15 10/13/2009

Data from 07:50:50 3/26/2009

APPLID IYK2Z1V2

Page

1

Tran	SC	Term	Userid	RSID	Program	TaskNo	Stop	Response	Response	Sev	Dispatch	User	CPU	Suspend	Suspend	Sev	DispWait	FC	Wait
							Time	Time	Time	Time	Time	Time	Time	Count	Count	Time	Time		
CSSY	U		CBAKER		DFHAPATT	19	07:50:50.606	.0364	Info		.0238	.0012		6		.0053	.0000		
CSSY	U		CBAKER		DFHAPATT	17	07:50:50.661	.0913	Warning		.0272	.0016		10	Info	.0537	.0000		
CGRP	U		CBAKER		DFHZCGRP	13	07:50:50.713	.1452	Warning		.0274	.0015		6		.1134	.0000		
CSSY	U		CBAKER		DFHAPATT	16	07:50:50.721	.1520	Warning		.0269	.0019		18	Info	.1096	.0000		
CSSY	U		CBAKER		DFHAPATT	14	07:50:50.733	.1648	Warning		.0258	.0012		6		.1353	.0000		
CSSY	U		CBAKER		DFHAPATT	18	07:50:50.844	.2747	Warning		.0565	.0033		16	Info	.2072	.0000		
CSSY	U		CBAKER		DFHAPATT	12	07:50:50.894	.3263	Warning		.0551	.0047		39	Warning	.2422	.0000		
CSSY	U		CBAKER		DFHAPATT	11	07:50:50.909	.3409	Warning		.0617	.0060		13	Info	.2649	.0000		
CSSY	U		CBAKER		DFHAPATT	15	07:50:51.042	.4730	Warning		.0764	.0093		73	Critical	.1103	.0000		
CPLT	U		CBAKER		DFHSIPLT	8	07:50:56.495	5.9899	Critical		1.0481	.0619		93	Critical	.0031	.0210		
CSSY	U		CBAKER		DFHAPATT	11	07:50:56.552	5.9837	Critical		2.2985	.5642		1188	Critical	.3840	.5694		

Figure 181. Performance Alerts - List report with SEVERITY(INFORMATIONAL)

**Example 3**

CICSPA SUMMARY(OUTPUT(SUMM0001),  
EXTERNAL(CPAXW001),  
TOTALS(8),  
INTERVAL(00:01:00),  
ALERTDEF(EXAMPLE3))

SUMM0001 Printed at 11:04:36 10/14/2009

Data from 07:50:50 3/26/2009 to 07:54:28 3/26/2009

Page

1

Tran	#Tasks	Crit	Warn	Info	Avg	Crit	Warn	Info	Avg	Avg	Crit	Warn	Info
		Alert	Alert	Alert	Response	Response	Response	Response	User	CPU	Suspend	Suspend	Suspend
					Time	Time	Time	Time	Time	Count	Count	Count	Count
CATA	1	0%	0%	100%	.0097	0%	0%	100%	.0028	6	0	0	1
CEDA	1	100%	0%	0%	163.3748	100%	0%	0%	.3450	414	1	0	0
CEJR	15238	1.1%	5.7%	21.4%	.4349	0.9%	3.7%	18.8%	.2348	73	324	876	3482
Total	15240	1.2%	5.6%	21.4%	.4349	10%	3.7%	18.7%	.2348	73	325	876	3483

Figure 182. Performance Alerts - Summary report





---

## Chapter 14. Statistics alert reporting

Statistics alert reporting enables you to define conditions, in terms of CICS Transaction Server or CICS Transaction Gateway statistics field values, that interest you. You can then use those conditions to report on CICS statistics stored in SMF files or historical databases.

CICS PA supports specifying an alert definition in the statistics HDB definition. You select the required Statistics reports to be collected in this HDB. When a CICSTS or CICS TG alert report is activated to collect in this HDB, you can use the AO line action (Activate Alert-only collection) to collect only the reports that related to this Alert. "Alert only" reports are only collected if Alert is triggered.

You can collect records that trigger alert conditions in the CICS TS and CICS TG Alert reports, or restrict existing reports to only those records which triggered alert conditions, or you can do both. Where both the alert and the original report record are collected you can hyperlink between them by use of a PF key.

A statistics alert definition can also be used to specify selection criteria for a Statistic List report. The records selected for inclusion in the report are derived from the fields and formulae contained in the alert definition and an additional Severity level option defined in the Statistic List report.

For each condition, you define an arithmetic formula that uses CICS statistics field names as variables. The formula can be as simple as a single field name, or it can be a combination of field names, arithmetic operators, and numbers. For example, the following formula calculates current active user transactions (statistics field XMGCAT) as a percentage of the maximum task limit (XMGMXT):

$\text{XMGCAT} / \text{XMGMXT} * 100$

(All fields in a formula must belong to the same statistics record.)

You can define up to three thresholds for a formula, indicating the severity of the condition: critical, warning, or information. A threshold consists of a comparison operator and a numeric value. For example, to trigger alerts of increasing severity, you could define the following thresholds:

**Critical**

>95

**Warning**

>80

**Info (Information)**

>50

CICS PA reports only the highest severity for a condition: for example, if the formula value is 85, the report contains only a warning alert, not a critical alert or an information alert.

You define conditions in sets; each set is known as a statistics alert definition. When you request a report, you select which statistics alert definition you want to use. This enables you to create reports that target different types of statistics, such as Java-related statistics, or general performance tuning statistics.

To create a statistics alert report, you need to follow these steps:

1. Define a statistics alert definition using option 8.5 from the CICS PA Primary Option Menu.

For more information, see “Defining statistics alerts.”

2. Use the statistics alert definition to create a Statistics Alert report.

To create a Statistics Alert report from SMF files:

- a. Select option 2 **Report Sets** from the CICS PA Primary Option Menu.
- b. Select or create a report set.
- c. Expand the **Statistics Reports** category, and then select **Alert**.

For more information, see “Statistics Alert reports” on page 226.

To create a Statistics Alert report from an HDB, you can use either of two options of the CICS PA Primary Option Menu:

- Via the Historical Database option:
  - a. Select option 5 **Historical Database** from the CICS PA Primary Option Menu.
  - b. Select option 4 **Report** from the Historical Database Menu.  
This displays a list of all HDBs in the Repository, including performance HDBs.
  - c. Select the statistics HDB you want to use.
  - d. Select **Request batch Alert report** from the Statistics HDB Reporting Menu.
- Via the Statistics option:
  - a. Select option 6 **Statistics** from the CICS PA Primary Option Menu.
  - b. Select option 3 **Historical Databases for CICS Statistics** from the CICS Statistics Reporting Menu.  
This displays a list of statistics HDBs in the Repository.
  - c. Select the statistics HDB you want to use.
  - d. Select **Request batch Alert report** from the Statistics HDB Reporting Menu.

For examples of Statistics Alert reports, see “STATSALERT examples” on page 501.

## Defining statistics alerts

To create a statistics alert definition:

1. Select option 8 **Resource Definitions** from the CICS PA Primary Option Menu.
2. Select option 5 **Statistics Alerts** from the Resource Definitions Menu.

This displays the Statistics Alert Definitions panel:

File Options Help
Row 1 to 1 of 1

Statistics Alert Definitions
Scroll ==> PAGE

Select to edit a definition. Enter NEW command to create a new definition.

/ Name	Description	Changed	ID
_SAMPLE	Sample alert definition	2009/02/17 09:10	AXS

\*\*\*\*\* Bottom of data \*\*\*\*\*

Figure 183. Statistics Alert Definitions

3. To define a new Alert Definition, enter **NEW** on the command line, and then enter a name for the Alert Definition in the pop-up window. To populate the new Alert Definition with sample Conditions, select the option **Initialize with**

**sample scenarios.** These samples demonstrate a variety of typical Conditions that you might want in an Alert Definition for general performance reporting. Alternatively, you can create a new Alert Definition modeled on an existing one. Enter line action **C** next to the definition you want to copy. In the pop-up window, enter the name of the new definition and destination repository. If a definition of the same name already exists in the destination repository, it will not be overwritten unless you select the option **Replace Alert Definition if it exists**.

An Alert Definition name consists of 1-8 characters. The first character must be an alphabetic character (A-Z) or a national character (@, #, or \$). The remaining characters can be alphabetic, national, or numeric (0-9) characters.

4. To edit an existing Alert Definition, enter line action **S** next to the Alert Definition. If you do not want to make and save changes, enter line action **V** to view the Alert Definition.

The Alert Definition edit panel has two views: expanded and compressed. The following figure shows the expanded view. The compressed view is similar, but shows only the alert text that describes each condition. To switch between views, press **Left** (F10) or **Right** (F11).

File Edit Lists Options Help

EDIT Statistics Alert Definition - SAMPLE
Row 1 of 226 More: >

Command ==>
Scroll ==> PAGE

Description . . . CICS TS Sample Alerts\_\_\_\_\_

Specify the Conditions for this Alert Definition.

_ Alert	Transaction dumpcode taken_____		
_ Formula	TDRTTKN_____		
_ Critical	_____	Warning >0_____	Info _____ +
_ Res	_____		List _____ +
_ APPLID	_____		

Alert	Transaction dumps requested_____		
Formula	TRANS_DUMP_TAKEN_____		
Critical	_____	Warning >0_____	Info _____ +
Res	_____		List _____ +
APPLID	_____		

Figure 184. Alert Definition edit panel - expanded view

The details for an Alert Definition consist of a description, and a list of Conditions:

#### Description

Free-format text of up to 36 characters describing the definition. This description appears on the Statistics Alert Definitions panel to help identify each definition, but it does not appear in reports.

The details for each Condition are:

**Alert** Free-format text of up to 50 characters describing the Condition. This text appears in Statistics Alert reports when the Condition occurs (that is, when the Formula value meets a Critical, Warning, or Info threshold).

#### Formula

The expression that you want CICS PA to evaluate and compare with the thresholds (Critical, Warning, and Info).

This expression can be:

- A statistics field name, such as XMGTAMXT
- A combination of statistics field names, numeric values (decimal points allowed), ( ) (parentheses), and the operators + (add), - (subtract), \* (multiply), and / (divide)

For example, the following expression calculates peak in-use IP connection receive sessions as a percentage of the maximum limit:

`ISR_PEAK_RECEIVE_SESSIONS / ISR_RECEIVE_SESSIONS * 100`

All field names in an expression must be from the same statistics report. You can either type field names directly into the expression, or press **Prompt** (F4) to select from a list of fields; selecting a field name appends it to the expression.

If you press **Prompt** (F4) in a Formula field that does not yet contain any field names, CICS PA displays a hierarchical list of CICS Transaction Server and CICS Transaction Gateway statistics reports. Enter line action **S** next to the statistics report containing the fields you want to use; this displays the list of fields in the statistics report.

**Tip:** If you are editing an existing Formula and you are not familiar with the statistics field names it contains, press **Prompt** (F4). This displays a list of field names and short descriptions. To see a longer description for a particular field, move your cursor to the line action field for that field, and then press **Help** (F1).

### **Critical, Warning, Info**

Specify one to three thresholds for Formula values that will trigger an Alert.

Each threshold represents a different severity level:

#### **Critical**

A problem has occurred that needs immediate attention

#### **Warning**

A problem might occur unless action is taken

**Info** Not a problem: reported for reference only

CICS PA reports only the highest matching severity level.

A threshold consists of a numeric value optionally preceded by one of the following comparison operators:

>	Greater than (default)
=	Equal to
<	Less than
<=	Less than or equal to
>=	Greater than or equal to
<>	Not equal to
≠	Not equal to (alternative form)
!=	Not equal to (alternative form)

To specify large values, append one of the following unit symbols: K (kilo), M (mega), G (giga), T (tera), or P (peta); where, for example, 1K = 1024 and 2.5M = 2.5 \* 1024 \* 1024.

For example, to trigger an Alert when the Formula value is greater than or equal to 32768, specify `>=32K`

Specify times in seconds, even for fields stored as milliseconds:

- For a threshold of 500 milliseconds, specify 0.5
- For a threshold of 2 minutes 15 seconds, specify 135

If you specify thresholds with unit symbols, then Statistics Alert reports show actual Formula values with the same unit symbols.

For Info thresholds only: to trigger an Alert regardless of the Formula value, specify a threshold of \*. This information Alert is reported only if neither the critical nor the warning threshold is triggered.

#### **Res or List**

Optional. Limits the reporting of this Condition to specific CICS resources. CICS PA reports the Condition only if the Res (Resource value), or a value in the selected Resource List, matches the value of an “identification field” (key fields and other record identification fields) in the Statistics report identified by the Formula.

You can specify either a Resource value or a Resource List, but not both. (A Resource List is a set of Resource values that you can refer to by name.)

Masking characters % (exactly one character) and \* (zero or more characters) are allowed in a Resource value.

For example, suppose the Formula contains fields from the Dispatcher TCB Modes report. To report the Condition only for TCB mode names that begin with the letter L, enter L\* in the Resource field. To report the Condition for TCB mode names that begin with either the letter L or the letter J, in the List field you need to specify the name of a Resource List, that you have previously defined, that contains the values L\* and J\*. To define a Resource List, select **Lists** in the action bar. For more details, see “Resource Lists” on page 647.

You can specify a Resource or a Resource List only when the Formula refers to a tabular (multi-record) Statistics report, such as Dispatcher TCB Modes (one record per TCB mode). You cannot specify them for label-based (single-record) reports.

Enter line action **I** to indicate that only records that have a resource field value that matches the specified value or values in the specified Resource List are to be assessed by this Alert. Enter line action **X** to indicate that records that have resource field values that match the specified value or values in the specified Resource List are *not* to be assessed by this Alert. **I** is the default.

#### **Note:**

- a. Resource Lists and Alert Definitions are both stored in a repository. An Alert Definition can only refer to Resource Lists that are stored in the same repository as the Alert Definition.
- b. Alert Definitions cannot refer to Object Lists. Object Lists are stored in the Control Data Set specified in your CICS PA Profile. For details, see “Object Lists versus Resource Lists” on page 327

#### **APPLID**

Optional. Enter an APPLID to limit the reporting of this Condition to a particular CICS system or systems. Masking characters % (exactly one character) and \* (zero or more characters) are allowed. For example, enter CICS%T to limit the reporting of this Condition to CICS systems with APPLID CICSAT, CICS1T, CICSBT, CICS2T, etc.

CICS PA uses this field to filter statistics records from a Statistics Alert report; it does not use this field to select which SMF files to use as input for the report. This is different to specifying an APPLID in a shared or personal CICS system definition. When you request a Statistics Alert report in a Report Set (that is, using data in SMF files), CICS PA selects SMF files based on the (personal or shared) system definitions that you have specified, including the APPLID of any CICS system definitions. Consequently, any APPLID that you specify in an Alert Definition might already have been filtered out by file selection.

Enter line action **I** to indicate that only records that have an APPLID that matches the specified value are to be assessed by this Alert. Enter line action **X** to indicate that records that have an APPLID that matches the specified value are *not* to be assessed by this Alert. **I** is the default.

An Alert Definition can contain many Conditions. To find a particular Condition in an Alert Definition, enter the command **FIND *string***, where *string* is a character string that appears in one of the Condition field values. If you enter the **FIND** command on the compressed view of the panel, the command searches only the fields displayed on the compressed view.

Each Condition can be either active (the default state) or inactive. When you request a Statistics Alert report, CICS PA ignores any inactive Conditions. If you want to temporarily exclude a Condition from reporting, then rather than deleting it, make it inactive. This allows you to reinstate the Condition later, rather than having to enter its details again. To switch a Condition between active and inactive states, enter line action **X** next to the Condition.

If you request a report sorted by Alert, CICS PA sorts the Alerts in the report according to the order of the Conditions on this panel. Otherwise, the order of the Conditions on this panel is not significant. You can use line actions, that are described here, to move Conditions into the order that you prefer.

## Line Actions

The following line actions can be entered against a Condition:

- /** Display the menu of line actions.
- S or E** Switch to expanded view, and then scroll the display to this Condition, ready for editing.
- I** Insert a new Condition.
- R** Repeat this Condition.
- C** Copy this Condition.
- M** Move this Condition.
- A** Copy/Move after this Condition.
- B** Copy/Move before this Condition.
- D** Delete this Condition.
- X** Switch this Condition between active and inactive states.

## Chapter 15. Statistics forms

Statistics forms are used to tailor the content of compatible Statistics List reports.

The statistics form allows you to:

- Select and activate statistics types (STIDs) to include in Statistics List reports
- Select fields within the statistics type form
- Specify the order of the fields in the report

Forms are saved in the current Repository and then are available to be selected in the Statistics List report definition in the Report Set or HDB Reporting function. The resulting reports appear in List format based on the active Form and the definition for each report.

To create a Statistics List report based on a report form, follow these steps:

1. Define a statistics form using option 8.6 from the CICS PA Primary Option Menu.
2. Use the edit function to specify the contents of the form.
3. Create or edit a Statistics List report and select this report form from the list of available report forms in the repository.

### Defining statistics forms

A statistics form comprises a set of statistics type records for the applicable CICS TS and CICS TG versions. Each statistics type has a default set of fields which can be modified.

#### Procedure

To create a statistics form definition:

1. Select option 8 **Resource Definitions** from the CICS PA Primary Option Menu.
2. Select option 6 **Statistics Forms**. The Statistics Form Definitions list panel displays all of the statistics form definitions in the current Repository:

```
File Options Help
-----
Statistics Form Definitions          Row 1 to 4 of 4
Command ==> _____ Scroll ==> PAGE

Select to edit a definition. Enter NEW command to create a new definition.

/ Name           Description           Changed           ID
- NESFM1                               2014/03/10 14:22 SYB1
- SWSFM3                               2014/03/10 14:38 SYB1
- RIPAI    IP alerts                    2013/11/15 15:28 AMS
- DAILY02  Res=Inc + APPLID=n/a         2013/11/07 15:48 AMS
***** Bottom of data *****
```

Figure 185. Statistics Form Definitions

3. To define a new statistics form, enter **NEW** on the command line. In the pop-up window, enter a name for the statistics form. If necessary, select the

versions (VRM) of CICS TS and CICS TG that you wish to report on using this form. There are slight differences in the reports and fields that are available in each CICS release.

**Tip:** You can use the **Upgrade** action bar menu to upgrade a statistics form to another version of CICS TS or CICS TG.

4. Press **Enter** to create the definition and proceed to the EDIT Statistics Reports Form panel. See “Selecting statistics forms STIDs and fields.”
5. Press **Exit** (F3) to finish defining the form and return to the Statistics Form Definitions panel.

## What to do next

Create or edit a Statistics List report and use this report form to specify the contents and layout of the report.

**Tip:** You can use the **C** line action to copy a statistics form within the same repository or to another repository. This makes the form available to be used with Statistics reports in other repositories. You can retain the same name or specify a new name during the copy.

---

## Selecting statistics forms STIDs and fields

To specify the contents and layout of a statistics form, activate the statistics types (STIDs) that you want to report and optionally modify which fields are included and the order in which they are to appear.

### About this task

You will use the EDIT Statistics Reports Form panel to specify the contents of a statistics form and to activate statistics types for inclusion in batch reporting. This panel is displayed when you create a new statistics form or when you select an existing form from the Statistics Form Definitions list. The EDIT Statistics Reports Form panel lists the available statistics types for the CICS versions that are specified in the form definition:



```

File Edit Upgrade Options Help
CPASTFTR EDIT Statistics Reports Form - DAILY Line 1 of 115
Command ==> Scroll ==> CSR

Description VRM TS: 690 TG: 900

** Report ** 1 Active 2 Modified

- - CICS Performance Analyzer No No
  - Alert No No
3 - - Regions No No
    - Transaction Manager No No
      - CICS Dispatcher No No
        - Dispatcher Overview No No
          4 - Dispatcher TCB Modes No No
            Dispatcher TCB Pools No No
            MVS TCB Overview No No
            MVS TCBs No No
        - CICS Storage No No
          - Storage Overview No No
            DSAs No No
            Domain Subpools No No
            Task Subpools No No
        - CICS Dumps No No
          - Transaction Dump Overview No No
            Transaction Dumps No No
            System Dump Overview No No
            System Dumps No No
            Enqueue Pools No No
            BUNDLE Resources No No
        - Connectivity No No
          - VTAM No No
            Terminal Autoinstall No No
:

```

Figure 186. EDIT Statistics Reports Form

- 1 The Active indicator shows which statistics types have been selected for reporting. Line action **A** activates a statistics type. Line action **D** deactivates a statistics type.
- 2 The Modified indicator shows that the form for a statistics type has been changed from the default.
- 3 Line action **S** against a category expands or collapses the category to show or hide the statistics types it contains.
- 4 Line action **S** against a statistics type selects the form for modification, allowing you to include, omit, and rearrange fields.

**Note:** Only activated statistics types are generated in the report. If you modify a statistics type you must also activate it to have it appear in a Statistics report that is based on this form.

## Procedure

1. Enter the **S** line action against a statistics type to open its form for modification.

```

File Edit Options Help
FORM      PROGRAM Resources                               Line 1 of 11
Command ==>                                     Scroll ==> CSR

/ Heading                                     Usage Column  Max Report
- Program Name                               _____ 8      8
- Load Requests                             _____ 10     20
- Fetches                                     _____ 10     32
- Total Fetch Time                           _____ 19     53
- RPL Offset                                 _____ 10
- New Copies                                 _____ 10
- Program Size                               _____ 10     65
- Times Removed by Compression                _____ 11
- Location                                    _____ 8      75
- Program Library Name                       _____ 8      85
- Program Library DSname                     _____ 44     44     131
***** End of Form *****

```

Figure 187. Form for a statistics type

The default Form layout is shown for the selected statistics type.

The order of the fields in the Form dictates the order of the fields in the report. You can move the fields to the required position. You can **OMIT** fields that you do not want reported. For long character fields in tabular reports, you can truncate the field in the report by specifying a **column width**.

The **O** line action toggles the state of a field. That is, reentering the **O** line action against an omitted field restores it. The RESET FORM command reverts the form to its default layout.

2. Press **Exit** (F3) to finish modifying the statistics type form and return to the EDIT Statistics Reports Form panel.
3. Enter the **A** line action against the statistics type that you just modified. This activates the statistics type for inclusion in batch reporting.

**Tip:** Use the **A** line action against an unmodified statistics type to activate it for batch reporting using its default layout.

4. When you have finished modifying and activating other statistics types, press **Exit** (F3) to save all your changes to the form and return to the Statistics Form Definitions panel.

---

## Part 4. Requesting reports using batch commands

These topics provide a description of the command language together with sample JCL to produce many of the reports and extracts.



---

## Chapter 16. JCL for reports and extracts

The CICS PA dialog automatically generates the JCL and batch commands to produce requested reports and extracts within a Report Set using specified SMF input files. The JCL can be directly submitted, or edited before submitting.

You can save the JCL in an external library to edit and submit independently of the CICS PA dialog. Alternatively, you can set up the JCL independently of the dialog, but this bypasses the comprehensive validation provided by the dialog.

---

### JCL generation

The following JCL is an example of the job stream for requesting reports and extracts from CICS PA. The sample library **SCPASAMP** provided with CICS PA includes JCL members to generate all the CICS PA reports and extracts. See Chapter 18, “Sample library,” on page 545 for a complete list of these job streams.

```
//CPASAMP JOB (Job Accounting)
/*
//CICSPA EXEC PGM=CPAMAIN,PARM='UPPER'
//STEPLIB DD DSN=CICSPA.V5R2M0.SCPALINK,DISP=SHR
//CMDLIB DD DSN=CICSPA.CMDLIB,DISP=SHR
//CPAHDBRG DD DSN=USER.CICSPA.XYX.REPOSTRY,DISP=SHR
/*
/* CICS PA messages
//SYSPRINT DD SYSOUT=*
/*
/* SMF Files for APPLID=CICSP
//SMFIN001 DD DSN=CICS.APPL1.FILE1,DISP=SHR
//          DD DSN=CICS.APPL1.FILE2,DISP=SHR,UNIT=AFF=SMFIN001
/*
/* Report output files - dynamically allocated by CICS PA,
/* or you can specify them in the JCL
//MYLIST DD SYSOUT=*
/*
/* Extract data sets
//CPAOXSYS DD DSN=CICSPA.CROSSSYS.EXTRACT,
//          UNIT=SYSDA,SPACE=(CYL,(10,10)),DISP=(NEW,CATLG)
//CPAOEXPT DD DSN=CICSPA.PERF.EXTRACT,
//          UNIT=SYSDA,SPACE=(CYL,(10,10)),DISP=(NEW,CATLG)
//CPAORSEL DD DSN=CICSPA.RECSEL.EXTRACT,
//          UNIT=SYSDA,SPACE=(CYL,(10,10)),DISP=(NEW,CATLG)
/*
/* External work files for use by reports that invoke SORT
//CPAXW001 DD UNIT=SYSDA,SPACE=(CYL,(10,10)),DISP=(NEW,DELETE)
//CPAXW002 DD UNIT=SYSDA,SPACE=(CYL,(10,10)),DISP=(NEW,DELETE)
//CPAXW003 DD UNIT=SYSDA,SPACE=(CYL,(10,10)),DISP=(NEW,DELETE)
//CPAXW004 DD UNIT=SYSDA,SPACE=(CYL,(10,10)),DISP=(NEW,DELETE)
//CPAXW005 DD UNIT=SYSDA,SPACE=(CYL,(10,10)),DISP=(NEW,DELETE)
/*
/* Sort work files
//CPASWK01 DD UNIT=SYSDA,SPACE=(CYL,(10,10)),DISP=(NEW,DELETE)
//CPASWK02 DD UNIT=SYSDA,SPACE=(CYL,(10,10)),DISP=(NEW,DELETE)
//CPASWK03 DD UNIT=SYSDA,SPACE=(CYL,(10,10)),DISP=(NEW,DELETE)
//CPASWK04 DD UNIT=SYSDA,SPACE=(CYL,(10,10)),DISP=(NEW,DELETE)
//CPASWK05 DD UNIT=SYSDA,SPACE=(CYL,(10,10)),DISP=(NEW,DELETE)
//SYSOUT DD SYSOUT=*
```

Figure 188. JCL for generating CICS PA reports and extracts (part 1 of 2)

```

/* Command input
//SYSIN DD *
* Report Set : SAMPLE
* Description: Sample CICS PA Report Set
  CICS PA SMFSTART(2012/01/12,),
          SMFSTOP(2012/01/13,)
* Reports for APPLID=CICSP
  CICS PA IN(SMFIN001),
          APPLID(CICSP),
          LIST(OUTPUT(MYLIST),
              SELECT(PERFORMANCE(INCL(USERID(MYID))))),
          LISTX,
          SUMMARY,
          TOTAL,
          WAITANALYSIS,
          PROFILING
          CROSS,
          TRANGROUP,
          BTS,
          WORKLOAD,
          TRACKINGLIST
          TRACKINGSUMMARY
          LISTEXCEPTION,
          SUMEXCEPTION,
          RESUSAGE,
          STATISTICSLIST,
          STATSALERT,
          CTGSTATISTICS,
          DB2,
          MQ,
          OMEGAMON,
          LOGGER,
          EXTRACTPERFORMANCE,
          RECSEL
          HDB(LOAD(hdbname)
          EXTRACTSTATISTICS)
/*
/* Dictionary records
//CPADICTR DD DISP=SHR,DSN=CICSPA.CICSP.DICT
//

```

Figure 189. JCL for generating CICS PA reports and extracts (part 2 of 2)

---

## JOB, EXEC and DD statements

The job stream to generate batch reports and extract data sets consists of the following statements:

### JOB

**Job Statement Information** from the CICS PA Settings profile options.

**PGM=CPAMAIN,PARM='parameter list'**

Request CICS PA reporting with optional parameters:

### UPPER

**UPPER** translates all report output to upper case. This parameter is generated if you specify YES for **Reports in Upper Case** in the CICS PA Settings profile options. The default is mixed case (**UPPER** not specified).

### STEPLIB DD

This is the library containing the CICS PA modules. It is specified in **CICS PA Load Library** in the CICS PA Settings profile options.

**CMDLIB DD**

This is the optional CICS PA command library containing pre-coded batch commands which can be inserted in the SYSIN command stream using the COPY or INCLUDE command.

**CPAHDBRG DD**

This identifies the Repository data set. The Repository is a VSAM KSDS that is the repository for all definitions associated with an HDB. It is also the repository for shared system definitions and Application Groups. It is required for all HDB command requests, including Load, Report, Extract, and Take-up.

**CPAHBCD DD**

This identifies the Repository container data sets. This DD is written in the context of an HDB load step and is expected to be read by a subsequent DB2 load step.

**CPAALTCDD DD**

This identifies the Performance Alerts container data sets. This DD is written in the context of an HDB load step and is expected to be read by a subsequent DB2 load step.

**CPAHBDL DD**

This identifies the Repository container data sets. This DD is used in the context of a DB2 load step where the HDB container data sets are not required to be kept (that is, the data retention period is 0).

**CPAMANCD DD**

This identifies the HDB manifest container data set. The manifest is a catalog of HDBs. It is used by the CICS PA plug-in. This DD is used in the context of a manifest build step.

**MANB0001 DD**

This DD is used in the context of a manifest build step. It lists the HDBs that were included in the manifest.

**SYSPRINT DD**

CICS PA message data set. This DD statement defines the file used by CICS PA for its messages and run time information. It must be specified and should be checked for error messages.

**SYSIN DD**

Command input. This DD statement contains the CICS PA commands.

The CICS PA dialog automatically builds these commands at job submission time, based on the reports and extracts activated in the Report Set.

**Report Output Files DD**

These DD statements define the report output files. These files are specified using the **OUTPUT(ddname)** operand.

If a ddname is not specified, CICS PA assigns a default ddname in the form *xxxxnnnn*, where *nnnn* is a sequential number 0001-9999 to uniquely identify the report, and *xxxx* identifies the type of report:

**LIST** Performance List report

**LSTX** Performance List Extended report

**SUMM**

Performance Summary report

**TOTL** Performance Totals report

**WAIT** Wait Analysis report

**PROF** Transaction Profiling report  
**CROS** Cross-System Work report  
**TRGP** Transaction Group report  
**CBTS** BTS report  
**WKLD**  
     Workload Activity report  
**TTLS** Transaction Tracking List  
**TTSU** Transaction Tracking Summary  
**XLST** Exception List report  
**XSUM**  
     Exception Summary report  
**FILE** File Usage Summary report  
**TEMP** Temporary Storage Usage Summary report  
**DPLS** Distributed Program Link Usage Summary report  
**RESU** Transaction Resource Usage List report  
**STAL** Statistics Alert reports  
**STTG** CICS Transaction Gateway Statistics reports  
**DB2R** DB2 report  
**MQ00** WebSphere MQ report  
**OMEG**  
     OMEGAMON reports  
**LOGR** System Logger report  
**CROX** Cross-System Work Extract Recap report  
**EXPT** Performance Data Extract Recap report  
**RSEL** Record Selection Extract Recap report  
**HDBL** HDB Load Recap report  
**LOEX** System Logger Extract Recap report  
**STEX** Statistics Extract Recap report

For example, if two LIST reports were requested without the OUTPUT operand specified, CICS PA writes the output to files with ddnames LIST0001 and LIST0002.

If a Report Output File is not specified in the JCL, CICS PA will dynamically allocate it with the same attributes as SYSPRINT, regardless of whether the OUTPUT operand was specified.

#### **LSxxxxnn DD|LGxxxxnn DD**

These DD statements define the output files where the report for each statistics type ID (STID) is written: LS for CICS TS statistics or LG for CICS TG statistics. *xxxx* is the STID. *nn* is a 2-digit sequence number that ensures each ddname is unique.

#### **TSxxxxnn DD|TGxxxxnn DD**

These DD statements define the output data sets where each statistics extract is



written: TS for CICS TS statistics or TG for CICS TG statistics. *xxxx* is the STID.  
*nn* is a 2-digit sequence number that ensures each ddname is unique.

#### **CPAOxxxx DD**

These DD statements define the Extract output data sets. The Extract Output Files are specified using the **DDNAME(ddname)** operand. CICS PA will accept any ddname via the DDNAME operand; it need not be prefixed by CPAO. However, if the DDNAME operand is omitted, CICS PA expects that the default Extract Output ddname is specified in the JCL. See Table 8 on page 372 for the default ddname for each type of Extract.

The CICS PA dialog automatically generates the DD statements at Report Set run time. When generating the JCL, CICS PA assigns a default ddname **CPAOxxnn** where nn is a sequential number **01-99** to ensure ddnames are unique, and xx indicates the type of extract data set:

**XS** Cross-System Work Extract data set  
**EX** Performance Data Extract data set  
**RS** Record Selection Extract data set  
**LE** System Logger Extract data set

If the extract data set is not cataloged, CICS PA uses the allocation details specified for **Extract Data Sets** in the Reporting Allocation Settings profile options. If the data set is already cataloged, CICS PA uses **DISP=MOD** or **DISP=OLD** to either append or overwrite the data set contents according to your specification on the Extract panel. Alternatively, you can use a GDG to create a new data set each time the Extract is run.

#### **SMFINnnn DD**

SMF data set. These DD statements define the SMF data sets to be processed by CICS PA. CICS PA commands refer to these DD statements via the **INPUT** operand (see “INput” on page 398). This determines which SMF Files are processed by the reports.

The CICS PA dialog automatically generates these DD statements at job submission time, based on the CICS APPLIDs selected for reporting and their associated SMF Files.

SMF File ddnames need not be prefixed by SMFIN. CICS PA will accept any ddname via the INPUT operand.

#### **CPADICTR DD**

Dictionary data set. These DD statements define the data sets which contain Dictionary records. It is only required if you want to include User Fields in your reporting.

Usually, the SMF File contains a Dictionary record to define the format of its performance records. If the Dictionary record is missing from the file, CICS PA will look in the CPADICTR data sets to find a Dictionary record for the particular CICS system (APPLID or APPLID/MVS) so report processing can proceed. If not present, CICS PA will use the default Dictionary record for the CICS system being processed.

---

## **External sorting**

Some CICS PA reports and extracts sort records to produce their output. CICS PA uses the SORT utility (DFSORT or equivalent product) to perform External Sorting. See Table 8 on page 372 for a list of reports that use SORT.

External Work data sets are used to save records that are to be sorted. If the **EXTERNAL** operand is not specified, CICS PA assigns an External Work File from

a pool specified in the JCL. External Work Files in the pool are identified with unique ddnames prefixed by **CPAXW**. Each report that requires an External Work File and does not specify the EXTERNAL operand is assigned one from the pool. You must ensure that there are enough External Work Files in the pool to handle all the reports that need one.

*Table 8. CICS PA reports, default ddnames, and external sort requirements*

Report or Extract	Description	Default Report Output ddname	Default Extract Output ddname	External Sort Required?
LIST	Performance List Report	LISTnnnn	N/A	N
LISTX	Performance List Extended Report	LSTXnnnn	N/A	Y
SUMMARY	Performance Summary Report	SUMMnnnn	N/A	Optional
TOTAL	Performance Totals Report	TOTLnnnn	N/A	N
WAITANALYSIS	Wait Analysis Report	WAITnnnn	N/A	N
PROFILING	Transaction Profiling Report	PROFnnnn	N/A	Optional
CROSS	Cross-System Work Report	CROSnnnn	N/A	Y
TRANGROUP	Transaction Group Report	TRGPnnnn	N/A	Y
BTS	BTS Report	CBTSnnnn	N/A	Y
WORKLOAD	Workload Activity Report	WKLDnnnn	N/A	Depends
TRACKINGLIST	Transaction Tracking List Report	TTLNnnnn	N/A	Y
TRACKINGSUMMARY	Transaction Tracking Summary Report	TTSUnnnn	N/A	Y
LISTEXCEPTION	Exception List Report	XLSTnnnn	N/A	N
SUMEXCEPTION	Exception Summary Report	XSUMnnnn	N/A	N
RESUSAGE	Transaction Resource Usage Reports (File Usage Summary, Temporary Storage Usage Summary, DPL Usage Summary, List)	FILEnnnn, TEMPnnnn, DPLSnnn, RESUnnnn	N/A	N
STATISTICSLIST	Statistics List Report	LSxxxxnn	N/A	N
STATSALERT	Statistics Alert Reports	STALnnnn	N/A	Y
CTGSTATISTICS	CICS TG Statistics reports (Activity Summary, Usage and Capacity report, Configuration Summary, Client Workload report, CICS Workload report)	STTGnnnn	N/A	N
DB2	DB2 Report	DB2Rnnnn	N/A	Y
MQ	WebSphere MQ Report	MQ00nnnn	N/A	N
LOGGER	System Logger Report	LOGRnnnn	N/A	Depends
OMEGAMON	OMEGAMON Reports	OMEGnnnn	N/A	N
CROSS	Cross-System Work Extract	XSYSnnnn	CPAOXSYS	Y
EXTRACTPERFORMANCE	Performance Data Extract	EXPTnnnn	CPAOEXPT	Depends
RECSEL	Record Selection Extract	RSELnnnn	CPAORSEL	N
LOGGER	System Logger Extract	LOEXnnnn	CPA0EXPT	Y
EXTRACTSTATISTICS	Statistics Extract	STEXnnnn	TSxxxxnn, TGxxxxnn	N

The following DD statements are required for External Sorting:

**CPAXWnnn DD**

External Work Files. These DD statements define the External Work Files used by the reports that sort their records. CICS PA commands refer to these DD statements via the **EXTERNAL** operand (see “EXTERNAL” on page 391).

The CICS PA dialog automatically generates these DD statements at job submission time, based on the **External Work Data Sets** specification in the Reporting Allocation Settings profile options.

External Work ddnames need not be prefixed by CPAXW. CICS PA will accept any ddname via the EXTERNAL operand.

**CPASWKnn DD**

Sort Work Data Sets. These DD statements define the Sort Work Files used by DFSORT (or equivalent product) on behalf of the reports that sort their records. **nn** is the Sort Work File sequence number.

The CICS PA dialog automatically generates four DD statements at job submission time, based on the **Sort Work Data Sets** specification in the Reporting Allocation Settings profile options.

**SORTLIB DD**

This is the library in which DFSORT (or equivalent product) is installed, and can be omitted if SORT is installed in the link-list.

**SYSOUT DD**

Sort Message Data Set. This DD statement defines the file used for SORT messages. It is required if DFSORT is used.

---

## Using sysout2pdf to output batch reports as PDF

The sysout2pdf z/OS UNIX utility converts “traditional” plain text z/OS batch reports, such as reports generated by CICS PA, into PDF files. You can write plug-in filters for sysout2pdf to manipulate the report contents, highlight text, or add PDF navigation features such as bookmarks. You can also use sysout2pdf to send the PDF using email.

### Preparing to use sysout2pdf

This topic explains the prerequisites for using sysout2pdf.

- sysout2pdf must be configured as part of the installation of CICS PA and according to the instructions in the *Program Directory*.
- sysout2pdf and Apache Formatting Objects Processor (FOP) must be installed under z/OS UNIX. Read the technote “Installing sysout2pdf and FOP on z/OS UNIX”, which is published on the IBM support web site at the following address:

[www.ibm.com/support/docview.wss?uid=swg21449724](http://www.ibm.com/support/docview.wss?uid=swg21449724)

**Note:** sysout2pdf was developed and tested on z/OS V1.9 using FOP 0.85 and 1.0.

- Your z/OS UNIX system must have a JAVA\_HOME environment variable that refers to a Java Runtime Environment (JRE), 1.5.x or later.

- Your TSO user ID (that is, the TSO user ID under whose authority your batch jobs run) must have an OMVS segment defined in RACF®, and must have permission to:
  - Execute the sysout2pdf z/OS UNIX shell script.
  - Read the specified z/OS UNIX input file (batch report).
  - Write files to the z/OS UNIX file path for the output PDF.
- If you want to use sysout2pdf to send PDF attachments by email, then sendmail must be configured on your z/OS UNIX system.

## Using sysout2pdf

This topic shows how to extend existing JCL that generates a batch report to use sysout2pdf.

Suppose you already have some JCL that generates a batch report. Now you want to use sysout2pdf to send you the report as a PDF using email. You need to make the following two changes to your JCL:

- Replace the parameters of the DD statement for the report data set with parameters that direct the report to a z/OS UNIX file.
- Append a BPXBATCH job step that calls the sysout2pdf z/OS UNIX shell script.

### Example

1. Specify the following DD statement for the batch report:

```
//WAIT0001 DD PATH='/u/myhome/temp/wait analysis.txt',
//          PATHOPTS=(OWRONLY,OCREAT,OTRUNC),FILEDATA=TEXT,
//          PATHMODE=(SIRUSR,SIWUSR,SIRGRP,SIROTH)
```

The PATH parameter must refer to a z/OS UNIX directory that exists, and that you are permitted to write to.

The PATHOPTS parameter specifies the access and status options for the file specified on the PATH operand. If the file exists, it will be overwritten. If it does not exist it one will be created. The file will be opened for writing.

The FILEDATA parameter specifies that the data is to be treated as text.

The PATHMODE parameter specifies the file permissions: in this example, the file owner has read and write permission; other users have read permission only.

2. Append the following job step:

```
//BPXBATCH EXEC PGM=BPXBATCH,REGION=0M
//STDENV DD *
FOP_HOME=/usr/local/fop
/*
//STDPARM DD *
sh /usr/local/sysout2pdf/sysout2pdf
-mailto username@example.com
-subject "CICS PA: Wait Analysis"
-body "PDF attached"
-from "CICS PA"
-mailin
-rmin
-rmpdf
-filter cpa-wait
"/u/myhome/temp/wait analysis.txt"
/*
//STDOUT DD SYSOUT=*
//STDERR DD SYSOUT=*
```

The last argument that you supply to the shell script (in the STDPARM DD statement) must match the z/OS UNIX file path that you specified in the DD statement for the batch report. (Notice that STDPARM allows you to split the command-line arguments across multiple lines.)

The path following the sh command refers to the location of the sysout2pdf shell script.

This example sends an email containing both the PDF and (as instructed by the -mailin option) the original plain-text input file (the batch report), and then removes both the input file and the generated PDF file (as instructed by the -rmin and -rmpdf options). The PDF contains bookmarks defined by the filter file cpa-wait (in the filters directory next to the sysout2pdf shell script). You might prefer not to send the PDF using email, and instead open it directly in a PDF reader application on your PC (say, via an SMB connection to z/OS UNIX).

## Syntax

sysout2pdf options can be used to control the name, content, and formatting of the PDF output. The order of the options is not significant but *infile* must be specified after any options. If the mailto option is used you can specify the headers and body text for the generated email message.

### sysout2pdf

```
[-body email_body_text]  
[-date prefix|suffix]  
[-dateformat string]  
[-filter file]  
[-fold width]  
[-from address]  
[-mailin]  
[-mailto address]  
[-nocc]  
[-nocleanup]  
[-nulltospace]  
[-param name value]  
[-pdf file]  
[-rmin]  
[-rmpdf]  
[-style file]  
[-subject email_subject]  
infile
```

## Options

### -body *email\_body\_text*

Body text of the email (currently supports plain text only).

### -date *prefix|suffix*

Prefixes or suffixes the generated PDF file name with the current date. Does not apply if you specify a -pdf option (to explicitly specify the PDF file path).

### -dateformat *string*

The date format string used by the -date option. For allowed values, see the z/OS UNIX **date** command.

Default prefix date format string:

```
" +%Y-%m-%d -"
```

Default suffix date format string:

```
" +-%Y-%m-%d"
```

For example, if you specify `-date` suffix, and the input file is `myreport.txt`, and today is 30 November 2010, then the PDF will be named `myreport-2010-11-30.pdf`

**-filter *file***

A program (such as a shell script) that reads the input file from stdin, edits it, and then writes it to stdout.

Use this option to customize `sysout2pdf` for particular reports: for example, to highlight specific string patterns in different colors or to add bookmarks. See the examples in the `filters` directory.

Initially, `sysout2pdf` treats the value of this argument as a file path; however, if the file path does not exist, `sysout2pdf` treats the value as the name of a file in the `filters` directory next to the `sysout2pdf` shell script.

For example, if the `sysout2pdf` shell script is in the directory `/bin/sysout2pdf`, then the following argument:

```
-filter cpa-wait
```

has the same effect as:

```
-filter /bin/sysout2pdf/filters/cpa-wait
```

**-fold *width***

If the z/OS batch application produces a report with no record delimiters, use this argument to insert a newline character at the end of each record. (Records must be fixed-length.)

**-from *address***

The address that you want to appear in the From field of the email. Default is `sysout2pdf`.

**-mailin**

Attach the input file (the original batch report) to the email, with ISO 8859-1 character encoding (not EBCDIC), and with each line delimited by a carriage return/line feed pair of characters (that is, the default Microsoft Windows `\r\n`, not just the single-character UNIX `\n` "newline"). Unless you specify the `-nocc` option, `sysout2pdf` removes the first column from the input file before attaching it.

**-mailto *address***

One or more email addresses to which you want to send the PDF. Separate multiple addresses with commas. The PDF is sent as a base64-encoded MIME attachment.

**-nocc**

Specify this option for batch reports that do not contain carriage control characters in the first byte of each record.

**-nocleanup**

Do not remove temporary file after completing. `sysout2pdf` creates the temporary file `temp*.xml` in the same directory as the output PDF file.

**-nulltospace**

Convert null (`\0`) characters in the report to spaces. Applications that produce reports containing null characters are typically considered ill-behaved. Try using the `-nulltospace` option if you get the following error:

```
FSUM9201 input file "[standard input]" is binary
```

**-param *name value***

Parameter to be passed through to the XSLT stylesheet. You can specify

multiple param options, each specifying a parameter name and value. The parameter names that you can specify depends on the XSLT stylesheet that you use. The default XSLT stylesheet supports the following parameters:

Name	Default value
font-size	9pt
line-height	11pt
page-height	8.5in
page-width	11in
margin-top	0.5in
margin-bottom	0.5in
margin-left	0.5in
margin-right	0.5in

**Tip:** To specify a different standard page size, instead of specifying:

```
-param page-width 210mm  
-param page-height 297mm
```

use the `-style` option to achieve the same effect:

```
-style a4-portrait
```

**-pdf *file***

Output PDF file path. If omitted, `sysout2pdf` creates a PDF in the same directory as the input batch report, and with the same base file name. For example, if the batch report file name is `batchreport.txt`, the PDF will be called `batchreport.pdf`.

**-rmin**

Remove input file after creating the PDF file.

**-rmpdf**

Remove PDF file after completion (intended for use with the `-mailto` option).

**-style *file***

A custom XSLT stylesheet to use instead of the default file (`styles/default.xml`). Use this option to customize the appearance of your PDF.

Initially, `sysout2pdf` treats the value of this argument as a file path; however, if the file path does not exist, `sysout2pdf` treats the value as the name of an XSLT stylesheet file, without its `.xml` extension, in the `styles` directory next to the `sysout2pdf` shell script.

For example, if the `sysout2pdf` shell script is in the directory `/bin/sysout2pdf`, then the following argument:

```
-style a4-portrait
```

has the same effect as:

```
-style /bin/sysout2pdf/styles/a4-portrait.xml
```

Styles supplied with `sysout2pdf` include:

- default
- letter-landscape (identical to default)
- letter-portrait
- a4-landscape
- a4-portrait

**-subject *email\_subject***

Subject line of the email.

*infile*

File path of the batch report. This is the only required argument. It must be the last argument specified.

## Examples

This topic shows examples of using `sysout2pdf` to create and send PDF output from batch reports. Each example is split over multiple lines for readability and can be issued in this way from a batch job. To run an example directly in a UNIX command shell, you must enter the command on a single line. For other examples, see members CPASPSM1, CPASPSM2, and CPASPWT1 in the sample library SCPASAMP.

### Simplest case: create a PDF file

This example creates the PDF file `/u/myid/report.pdf` (with a landscape-oriented, letter-sized page, and 9-point text):

```
sysout2pdf  
"/u/myid/report.txt"
```

### Create a PDF file with a date-stamped file name suffix

This example creates the PDF file `/u/myid/report-2010-30-11.pdf` (assuming today is 30 November 2010):

```
sysout2pdf  
-date suffix  
"/u/myid/report.txt"
```

### Create a PDF file with a wide page size

This example creates a PDF file with a page size that is twice as wide as a landscape-oriented Letter-sized page:

```
sysout2pdf  
-param page-width 22in  
"/u/myid/report.txt"
```

### Create a PDF file using a filter

This example creates a PDF file using a filter that is specifically designed for the CICS PA wait analysis report. This filter creates bookmarks to each transaction code in the Wait Analysis report.

```
sysout2pdf  
-filter cpa-wait  
"/u/myid/wait0001.txt"
```

### Send the PDF file using email

This example creates the PDF file `/u/myid/report.pdf`, and then sends `report.pdf` by email to `user@example.com`:

```
sysout2pdf  
-mailto user@example.com  
"/u/myid/report.txt"
```

### Send the PDF file and input file using email, and then delete them

This example creates the PDF file `/u/myid/report.pdf`, sends it and the input file by email (`-mailn`) to `user@example.com`, and then removes (deletes) both the PDF



file (-rmpdf) and the input file (-rmin). Use -rmin and -rmpdf when you only want the report by email, and you do not want to leave any files on z/OS UNIX.

```
sysout2pdf
-mailto user@example.com
-mailin
-rmin
-rmpdf
"/u/myid/report.txt"
```

### Send an email with custom subject line, from address, and body text

This example sends an email with the subject line "My CICS performance report", the from address "CICS PA", and the body text "PDF and plain-text versions attached".

```
sysout2pdf
-mailto user@example.com
-subject "My CICS performance report"
-from "CICS PA"
-body "PDF and plain-text versions attached"
-rmin
-rmpdf
"/u/myid/report.txt"
```

### Customizing the appearance of the PDF

You can use options in both the originating batch application and sysout2pdf to output an appropriate number of records on each page. You can also use a filter to add bookmarks to the generated PDF.

You might need to experiment to make the pages of your batch report fit neatly onto the pages of a PDF. There are several ways you can achieve this.

A typical 133-column-wide report fits neatly onto the default PDF style (landscape letter-size pages, half-inch margins, 9-point text). However, reports can be paginated with more lines per page than will fit using this style. Ideally, batch applications provide a parameter that allows you to adjust this value. For example, CICS Performance Analyzer provides the LINECNT parameter. LINECNT(45) works well with the default sysout2pdf style. Otherwise, you can specify a different page size (using the -style or -param command-line options) and a different font size (using -param).

For further customization, edit a copy of styles/default.xml, and use it via the -style command-line option. Note that styles/default.xml specifies encoding="IBM-1047" (that is, EBCDIC encoding) in the XML declaration.

**Adding bookmarks:** To add a bookmark to the PDF, use a filter to insert the following XML element at the bookmark target:

```
<bookmark id="id">title</bookmark>
```

where *id* is a unique identifier for the bookmark (not visible to users) and title is the title of the bookmark. To nest a bookmark under another bookmark, add a parent-id="*id*" attribute to the child bookmark, where *id* is the id attribute value of the parent bookmark. For example:

```
<bookmark id="secta">Section A</bookmark>
<bookmark id="subsecta1" parent-id="secta">Section A.1</bookmark>
```

See the supplied filters (in the filters directory) for examples.

## Coding tips for sysoutpdf jobs

These topics provide some tips on troubleshooting and on preparing batch report input and coding sysoutpdf jobs to avoid problems.

### STDPARM cannot have sequence numbers

If you use the ISPF editor to create the STDPARM file or STDPARM inline statements, set sequence numbers off by entering NUMBER OFF on the command line before you begin typing the data. If sequence numbers already exist, enter UNNUM to remove them and set number mode off. Otherwise, you will get an error such as the following in the STDERR job output data set (where *nnnnnnnn* is a line sequence number):

```
... sysout2pdf: Input file not found: nnnnnnnn
```

### Use REGION=0M to allocate memory to the JVM

Note the REGION=0M parameter on the EXEC statement for the BPXBATCH step. You can also specify this on the JOB statement. This parameter ensures that the Java Virtual Machine (JVM) has enough memory. If you omit REGION=0M, or you specify a REGION size that is too small, you will get errors similar to the following:

In the STDOUT job output data set:

```
<JIT: fatal error, failed to allocate 8192 Kb data cache>
```

In the STDERR job output data set:

```
JVMJ9VM015W Initialization error for library ... : cannot initialize JIT  
Could not create the Java virtual machine.
```

### If your report contains null (0) characters, specify the -nulltospace option

Some reporting applications generate reports that contain null characters instead of spaces. This can be problematic.

sysout2pdf uses the z/OS UNIX shell command sed to manipulate report text. If sed detects a null character in its input file, it issues the following message in the STDERR job output data set, and then stops:

```
FSUM9201 input file "[standard input]" is binary
```

To overcome this error, specify the -nulltospace option, which causes sysout2pdf to translate nulls to spaces before calling sed.

### Configure SMTP to accept maximum report size

If an email containing a requested report is not received and there is no error message from sysout2pdf, the problem may be in your sendmail configuration.

sysout2pdf uses the z/OS UNIX command sendmail to send email. sendmail uses the z/OS SMTP server. If an email exceeds the maximum number of bytes that the SMTP server accepts, the SMTP server discards the email, and writes the following error message to the MVS system log (SYSLOG):

```
EZA5501I Mail file too large. Data from username@example.com was discarded.
```

To overcome this error, ask your z/OS system administrator to increase the value specified by the MAXMAILBYTES statement in the SMTP configuration data set (supplied member name SMTPCONF).

## How sysout2pdf works

sysout2pdf is a z/OS UNIX shell script. sysout2pdf reformats a z/OS batch report as XML and then uses Apache FOP (an open-source tool) to output the report as PDF.

sysout2pdf performs the following steps:

1. If requested (by the -fold option), splits the input file into multiple lines by inserting newline characters at regular intervals. This is only necessary if the batch report does not contain end-of-record delimiters (in which case, the resulting z/OS UNIX file consists of a single, and possibly very long, line).
2. Replaces XML-significant characters (< > &) with references to the equivalent XML entities (<lt gt amp).
3. Unless the -nocc ("no carriage control") option was specified, treats the first column of each line as a carriage-control character. Converts some, ignores others (such as overstrike), and then removes the first column. For example, replaces "new page" characters except for the first with the XML tags:  
`</section><section>`

This means "end the current section, and then start another."

4. Applies a filter, if specified (by the -filter option).
5. Adds the following XML to the start of the file:  
`<?xml version="1.0"?>  
<report><section>`
6. Adds the following XML to the end of the file:  
`</section></report>`
7. Calls FOP to transform the XML into XSL-FO (a particular type of XML) according to the XSLT stylesheet, and then convert the XSL-FO to PDF.
8. If requested (by the -mailto option), sends an email containing the PDF.



---

## Chapter 17. Using the CICS PA commands

The CICS PA commands are used to request reports and extracts. If you use the CICS PA dialog to build and submit Report Sets, the commands are generated automatically, but you do have the opportunity to edit them before job submission.

The commands are specified in the **SYSD DD** statement of your CICS PA batch JCL. There are three ways to include the commands in your job stream:

1. You can code the commands directly under **//SYSD DD \***
2. You can precode the commands and store them in a member of a PDS which is then referenced in your JCL using  
`//SYSD DD DSN=pdsname(member),DISP=SHR`
3. You can precode commands and store them for future use in the CICS PA command library referenced by the **CMDLIB DD** statement in your JCL. The precoded commands can then be included in your job stream using the **COPY** or **INCLUDE** instruction under **//SYSD DD \*** (for further information see “COPY instruction” on page 543)

See Chapter 16, “JCL for reports and extracts,” on page 367 for a description and examples of the JCL for producing CICS PA reports and extracts.

---

### General command format

The standard command format for producing reports and extracts is:

Name	Command	Operands	Comments
name in columns 1-8 (or blank)	<b>CICSPA</b>	one or more operands	comments (or blank)

The general format of the command as it appears in the **SYSD DD** statement of your job stream is:

`CICSPA operand[(suboperand)][,operand[(suboperand)],...]`

#### Name

Optional. Identifies the command. It is a label from one to eight characters long and must start in column 1. It must not be a command name or an acceptable abbreviation of a command name.

#### Command

Required. The **CICSPA** command requests CICS PA reports and extracts.

#### Operands

One or more operands are required to specify which reports and extracts you want, and specify options for these.

An operand is either a report operand or a control operand:

1. A **report operand**. Each time one is specified, a new report or extract is created.
2. A **control operand**. When specified as a global operand before report operands, it affects *all* the following reports and extracts until it is next

specified. Each time it is specified, it overrides its previous setting. This is useful if you want to run multiple variations of a number of reports. (Note that **SELECT** is an exception to this rule; new selection criteria are *added* to those previously specified.)

Some control operands, such as **SELECT** and **LINECount**, might be specified as suboperands of report operands. As report-level operands, they apply only to the particular report or extract, and override the global specification.

Operands can be specified as many times as required, separated by commas. They can have suboperands and value lists. The rules for continuations, delimiters, and the formats of the operand values are described in “Rules for operands.”

#### **Comments**

Optional. Separated by at least one blank from the last operand on the line.

## **General conventions**

The format of the commands follows these general conventions:

- Any line with \* (an asterisk) in column 1 is treated as a comment (unless the asterisk is part of a continued quoted string).
- Column 72 is for continuation in some cases.
- Columns 73 through 80 of all lines are ignored.
- Blank lines are ignored.
- A single command can contain a maximum of 8191 characters.

## **Rules for operands**

The **CICSPA** command requires one or more operands, separated by commas, to identify the particular reports and extracts to produce, along with their associated options. Many operands can be abbreviated. They can contain suboperands and a list of values, positionally dependent, and enclosed in parentheses. For example, **ACTIVE(FROM(date,time),TO(date,time))**

### **Continuation rules**

An operand is normally continued by ending the first line with a comma and continuing anywhere on the next line.

You can use any number of continuation lines within the following limits:

- The maximum operand length is 4000 characters
- The maximum length of a character string in single quotation marks is 256 characters
- The maximum number of operands is 1000
- The maximum nesting depth is 254.

It is permissible to extend an operand to column 71, put a nonblank character in column 72, and continue anywhere on the next line. There are no restrictions as to where the operand must be divided when continuing.

A special rule applies to continuation of character strings enclosed in single quotation marks. To continue a quoted string, enter a nonblank character in column 72 and continue the string beginning in column 1 of the next line (this is the only case in which a restriction is placed on the beginning column of the continuation). Comments or blank lines enclosed in single quotation marks are processed as part of the quoted string.

## Delimiters

The following characters are used as operand delimiters:

### Quotation mark

Designates the beginning or ending of a literal, as for example, a heading. When a quoted string contains a quotation mark, use two quotation marks; for example, 'THAT"S ALL FOLKS'. CICS PA replaces each pair of consecutive quotation marks with a single quotation mark before processing the command string. The ending quotation mark of a quoted string can be followed by a comma or a left or right parenthesis. Quoted strings cannot exceed 256 characters.

### Dash or hyphen

Separates a range of values and, except when used in a quoted string, is treated as such. If a dash is followed by another delimiter, the second value is null.

### Parentheses

Enclose suboperands or values. The right parenthesis must be followed by another right parenthesis, a comma, a space, or a left parenthesis.

### Equal sign

Designates that a value follows. For example, A = B is treated as A(B). The equal sign can be used in this way only when followed by a single value. If you assign more than one value, use parentheses. When the equal sign is followed by a left parenthesis, it is ignored.

### Comma

Delimits operands. (Omit the comma when its use is redundant). Consecutive commas cause generation of a null in the scan list, and must be counted toward the maximum number of operands allowed.

## Operand value formats

Certain types of operand values are used in more than one command and have a standard format. These types are:

### Numeric values

In general, numeric values can be up to nine digits. Exceptions and specific maximum values are set by the individual command processors.

### Name values

In general, name values are from one to eight characters. They contain any combination of letters, numbers, and special characters except for blanks and the delimiters described previously.

### Date and Time values

These values are used with **FROM** and **TO** operands to assign a time value, a date value, or both. Specific rules for each are as follows.

#### Time

Time is always expressed as **hhmmss.th** for hours, minutes, seconds, and hundredths of a second. You can use delimiters to separate the time components (for example, **hh.mm.ss.th** or **hh:mm:ss.th**).

When delimiters are not used, the first two digits are assumed to be the hour, unless they exceed 23. In this case, only the first digit is the hour. For example, 55 is 5:50, 257 is 2:57, and 187 is 18:70 (an error).

When delimiters are used, each value component is checked for validity. For example, 35.54 is an error, but 3554 is assumed to be 3:55:40, which is valid.

## Date

A date can be either a calendar date or a relative date. If both the **FROM** and **TO** dates are specified, they must both be calendar dates or both relative dates.

## Calendar dates

A calendar date can be either Gregorian (**yyyy/mm/dd** for year/month/day) or Julian (**yy/ddd** for year/day-of-year). Several formats for each are allowed.

The date is recognized as Gregorian if the slash is used as a delimiter. Allowable formats are:

**yyyy/mm/dd**

**mm/dd** (the current year is assumed)

Leading zeros can be omitted from both month and day.

When the slash is not used, the date is assumed to be Julian. Allowable formats are:

**yy.ddd**

**yyddd**

**ddd** (the current year is assumed and leading zeros can be omitted in this format only)

**Note:** Two digit years provided as input are converted to:

**19yy** if yy is 50–99

**20yy** if yy is 00–49

For example, 99097 is converted to 1999097 (April 7, 1999) whereas 05026 is converted to 2005026 (January 26, 2005).

## Relative dates

A Relative Date can be specified as 0, -1, -2,... to signify a date relative to the current date. 0 represents today, -1 yesterday, -2 two days ago, and so on. If both **FROM** and **TO** dates are specified, they must be in the same format.

## Single Date or Time Values

If you need to specify only the date, use a comma to designate the missing time value. For example:

**TO=(2005/01/13,)**

If you need to specify only the time, it is unnecessary to precede the value with a comma to designate the missing date value. For example:

**TO=1230** or **FROM=510**

## Pairs of Date or Time values

Most commands allow a pair of date and time values. For example:

**FROM(2005/01/16,09:00),TO(2005/01/17,17:30)**

The following default values are provided if the value is not specified:

FROM date: 1973/01/01 (January 1, 1973)

TO date: 2025/12/31 (December 31, 2025)

FROM time: 00:00:00.00

TO time: 23:59:59.99



## CICSPA report operands

A **report operand** requests a report or extract each time it is specified. Report operands can be specified as many times as required.

Table 9 lists all the CICS PA reports and extracts. Each has a default format which you will get if you use only the command shown in the table.

Table 9. CICS PA report operands (default reports and extracts)

Command	Report or extract	Topic
<b>Performance Reports</b>		
CICSPA LIST	Performance List	"LIST - Performance List report" on page 402
CICSPA LISTX	Performance List Extended, Cross-System Work Extended	"LISTX - Performance List Extended report" on page 414
CICSPA SUMMARY	Performance Summary	"SUMMARY - Performance Summary report" on page 426
CICSPA TOTAL	Performance Totals	"TOTAL - Performance Totals report" on page 449
CICSPA WAIT	Wait Analysis	"WAITANALYSIS - Wait Analysis report" on page 451
CICSPA PROFILING	Transaction Profiling	"PROFILING - Transaction Profiling report" on page 454
CICSPA CROSSsystem	Cross-System Work	"CROSSsystem - Cross-System Work report and extract" on page 471
CICSPA TRANGROUP	Transaction Group	"TRANGROUP - Transaction Group report" on page 478
CICSPA BTS	CICS Business Transaction Services	"BTS - BTS report" on page 480
CICSPA WORKLOAD	Workload Activity	"WORKLOAD - Workload Activity report" on page 481
CICSPA TRACKINGLIST	Transaction Tracking List	"TRACKINGLIST - Transaction Tracking List report" on page 483
CICSPA TRACKINGSUMMARY	Transaction Tracking Summary	"TRACKINGSUMMARY - Transaction Tracking Summary report" on page 486
<b>Exception Reports</b>		
CICSPA LISTEXception	Exception List	"LISTEXC - Exception List report" on page 488
CICSPA SUMEXception	Exception Summary	"SUMEXC - Exception Summary report" on page 490
<b>Transaction Resource Usage Reports</b>		
CICSPA RESUSAGE	File Usage Summary, Temporary Storage Usage Summary, Distributed Program Link Usage Summary, Transaction Resource Usage List	"RESUSAGE - Transaction Resource Usage reports" on page 491
<b>Statistics Reports</b>		
CICSPA STATISTICSLIST	Statistics List Report	"STATISTICSLIST - Statistics List reports" on page 498
CICSPA STATSALERT	Statistics Alert	"STATSALERT - Statistics Alert reports" on page 500

Table 9. CICS PA report operands (default reports and extracts) (continued)

Command	Report or extract	Topic
CICSPA CTGSTATISTICS	CICS TG Statistics Reports	"CTGSTATISTICS - CICS TG Statistics reports" on page 503
<b>Subsystem Reports</b>		
CICSPA DB2	DB2 Activity	"DB2 - DB2 report" on page 505
CICSPA MQ	WebSphere MQ Activity	"MQ - WebSphere MQ report" on page 509
CICSPA OMEGAMON	Adabas, CA-Datcom, CA-IDMS, or Supra Activity (as monitored by OMEGAMON)	"OMEGAMON - OMEGAMON reports" on page 511
<b>System Reports</b>		
CICSPA LOGGER	System Logger	"LOGGER - System Logger report and extract" on page 514
<b>Extracts</b>		
CICSPA CROSSsystem	Cross-System Work	"CROSSsystem - Cross-System Work report and extract" on page 471
CICSPA EXTRACTPERFORMANCE	Performance Data Extract	"EXTRACTPERFORMANCE - Performance data extract" on page 519
CICSPA LIST(DDNAME(xx))	Performance List Extract	"LIST - Performance List report" on page 402
CICSPA SUMMARY(DDNAME(xx))	Performance Summary Extract	"SUMMARY - Performance Summary report" on page 426
CICSPA RECSEL	Record Selection	"RECSEL - Record Selection extract" on page 520
CICSPA HDB(LOAD(hdbname))	HDB Load	"HDB(LOAD - HDB Load" on page 522
CICSPA LOGGER	System Logger	"LOGGER - System Logger report and extract" on page 514
CICSPA EXTRACTSTATISTICS	Statistics Extract	"EXTRACTSTATISTICS - Statistics extract" on page 524

If you want to tailor the reports and extracts to meet your particular information requirements, you must specify additional operands, suboperands, and possibly value lists. For example, **APPLID**, **INput**, and **SELECT** (see "CICSPA control operands" on page 396) are typically required to control the input, so too are **OUTPUT(ddname)** to control report output and **DDNAME(ddname)** to control extract output.

For details on how to use the report operands to request variations of the reports and extracts, turn to the corresponding page reference in Table 9 on page 387. For information on the output produced, see the *CICS Performance Analyzer for z/OS Report Reference*.

Some suboperands are common to many of the reports and extracts. See "Common options" on page 389 for a general discussion of these.

Other suboperands are peculiar to individual reports and extracts. Turn to the page references in Table 9 on page 387 for a discussion of these for each report and extract.

All CICS PA reports and extracts use CMF data as input and can be tailored by choosing which CMF data records and which fields are processed. There are two filtering methods:

1. The most versatile method to use is **SELECT** which allows inclusion (or exclusion) of specific records according to values in the fields of individual CMF records.
2. **FIELDS** can be used for the **LIST**, **LISTX**, and **SUMMARY** reports to specify which CMF fields to report, the order of the fields, and how the fields are summarized.

There are five data types for CICS-defined fields: **character**, **count**, **decimal**, **clock**, **time stamp**. For both filtering methods (**SELECT** and **FIELDS**), you will need to specify additional suboperands for CMF field types of **clock** and **time stamp** (unless defaults are assumed) to identify which of their formats you want.

There are effectively four data types for user fields: **character**, **count**, **clocktime**, **clockcount**. You will need to specify additional suboperands for user fields depending on the data type.

See “Tailoring using FIELDS” on page 392 and “Using SELECT statements” on page 525 for further information and examples.

## Common options

The following suboperands can be specified for many of the CICS PA reports or extracts:

**OUTPUT**  
**DDNAME**  
**EXTERNAL**  
**LINECount**  
**TITLE1** and **TITLE2**

Example:

```
CICSPA LISTX(  
    TITLE1('Report includes all transactions'),  
    TITLE2('**Please check response time in the Response field'),  
    LISTX(OUTPUT(LISTX2),  
        EXTERNAL(LISTXW2),  
        LINEC(50),  
        TITLE1('Report includes just the CPAX transaction'),  
        TITLE2('**Please check response time in the Resp field'),  
        SELECT(PERFORMANCE(INCLUDE(TRAN(CPAX)))))
```

This example will produce two Performance List Extended reports:

1. The first report is routed to the default DDname LSTX0001 with the default line count of 60. The work file used by the external sort will have the default DDname CPAXW001. The title line that will print on each page of the report is:

Report includes all transactions                      \*\*Please check response time in the Response field

2. Since the **SELECT** operand is used in the second report, it will contain records from the CPAX transaction only. It is routed to the DDname LISTX2 with a line count of 50. The work file used by the external sort will have the DDname LISTXW2. The title line that will print on each page of the report is:

Report includes just the CPAX transaction      \*\*Please check response time in the Resp field

## OUTPUT

The syntax is **OUTPUT(ddname)** or **OUTPUT=ddname**.

This provides the DDname of the output data set where a report is to be printed. It is important when you are running more than one report. To interleave multiple reports in a single output data set, specify the same DDname for each report. To direct each report to its own output data set, specify unique DDnames that refer to separate data sets.

If a ddname is not specified, CICS PA assigns a default ddname in the form *xxxxnnnn*, where *nnnn* is a sequential number 0001-9999 to uniquely identify the report, and *xxxx* identifies the type of report:

<b>LIST</b>	Performance List report
<b>LSTX</b>	Performance List Extended report
<b>SUMM</b>	Performance Summary report
<b>TOTL</b>	Performance Totals report
<b>WAIT</b>	Wait Analysis report
<b>PROF</b>	Transaction Profiling report
<b>CROS</b>	Cross-System Work report
<b>TRGP</b>	Transaction Group report
<b>CBTS</b>	BTS report
<b>WKLD</b>	Workload Activity report
<b>TTLS</b>	Transaction Tracking List
<b>TTSU</b>	Transaction Tracking Summary
<b>XLST</b>	Exception List report
<b>XSUM</b>	Exception Summary report
<b>FILE</b>	File Usage Summary report
<b>TEMP</b>	Temporary Storage Usage Summary report
<b>DPLS</b>	Distributed Program Link Usage Summary report
<b>RESU</b>	Transaction Resource Usage List report
<b>STAL</b>	Statistics Alert reports
<b>STTG</b>	CICS Transaction Gateway Statistics reports
<b>DB2R</b>	DB2 report
<b>MQ00</b>	WebSphere MQ report
<b>OMEG</b>	OMEGAMON reports
<b>LOGR</b>	System Logger report
<b>CROX</b>	Cross-System Work Extract Recap report
<b>EXPT</b>	Performance Data Extract Recap report

**RSEL** Record Selection Extract Recap report  
**HDBL** HDB Load Recap report  
**LOEX** System Logger Extract Recap report  
**STEX** Statistics Extract Recap report

## **DDNAME**

The syntax is **DDNAME(ddname)** or **DDNAME=ddname**.

This provides the DDname of the output data set where extract records are written. If not specified, CICS PA assigns a default DDname **CPAOxxnn** where nn is a sequential number **01-99** to ensure the data sets are uniquely identified, and xx indicates the type of extract:

**XS** Cross-System Work Extract data set  
**EX** Performance Data Extract data set  
**RS** Record Selection Extract data set  
**LE** System Logger Extract data set

## **EXTERNAL**

The syntax is **EXTERNAL(ddname)** or **EXTERNAL=ddname**.

This provides the DDname of the work data set used by the external SORT facility. If not specified, CICS PA assigns an External Work File from a pool of External Work Files with DDnames in the format **CPAXWnnn** where nnn is a sequential number **001-999** to uniquely identify the work file. There must be one External Work File specified in the JCL for each report that needs one. See “External sorting” on page 371 for information on the DD statements for External Work Files.

The following reports and extracts use external sorting:

**LISTX** Performance List Extended report

### **SUMMARY**

Performance Summary report (optional)

### **PROFILING**

Transaction Profiling report (optional)

### **CROSS**

Cross-System report and extract

### **TRANGROUP**

Transaction Group report

**BTS** BTS report

### **WORKLOAD**

Workload Activity report (possibly)

### **TRACKINGLIST**

Transaction Tracking List

### **TRACKINGSUMMARY**

Transaction Tracking Summary

### **STATSALERT**

Statistics Alert reports

**DB2** DB2 report

### **LOGGER**

System Logger report and extract

### **EXTRACTPERFORMANCE**

Performance Data Extract (optional for Summary Form)

## LINECount

The syntax is **LINEC(nnn)** or **LINEC=nnn**.

Use this to specify the maximum number of lines, including headings, to print on each page of the report. The default is **60**.

LINECount can be specified as a global operand applying to multiple reports, or a suboperand of a particular report. The report-specific value takes precedence over the global for that report only.

This operand does not apply to the Extracts and System Logger report.

## TITLE1 and TITLE2

The syntax is **TITLE1('title\_first\_half')** and **TITLE2('title\_second\_half')**. This allows you to specify a title for your report to print on each page of the report below the report heading (see the example in Figure 190). The maximum length of the title field is **128** characters. Specify the first 64 characters, enclosed in single quotation marks, as **TITLE1**. If your title exceeds 64 characters, specify the remainder of the title, enclosed in single quotation marks, as **TITLE2**.

The **TITLE1** text is aligned with the left margin of the report, and the **TITLE2** text starts in column 65. To produce a centered title, use leading spaces.

```
V5R2M0                                CICS Performance Analyzer
                                      Performance List

LIST0001 Printed at 12:03:45 11/12/2013   Data from 11:10:51 1/12/2005   APPLID CICS PAOR   Page   1
This is TITLE1 on the left               This is TITLE2 on the right

Tran SC Term Userid RSID Program TaskNo Stop      Response Dispatch User CPU Suspend DispWait FC Wait  FCAMRq  IR Wait
      Time      Time      Time      Time      Time      Time      Time      Time      Time
CSSY U   CBAKER   DFHAPATT  16 11:10:51.123 .0139 .0007 .0006 .0133 .0000 .0000  0 .0000
CSSY U   CBAKER   DFHAPATT  17 11:10:51.213 .0185 .0010 .0014 .0175 .0001 .0000  0 .0000
. . .
```

Figure 190. Example of a report title

## Filtering using SELECT and SELECT2

The **SELECT** and **SELECT2** operands allow inclusion or exclusion of specific records according to values in the fields of individual records. **SELECT** and **SELECT2** provide the same Selection Criteria functionality. **SELECT2** is generated by the CICS PA dialog when the Report Form has Selection Criteria. If both **SELECT** and **SELECT2** are specified, the record must match both for the record to be processed. For a detailed discussion, see “Using **SELECT** statements” on page 525.

## Tailoring using FIELDS

The **FIELDS** operand allows you to tailor reports by requesting which CMF fields are reported, the order of the fields, and how the fields are summarized. **FIELDS** also allows you to insert columns for Application Groups. For details on how to do this for the particular reports:

- For the Performance List report, see “**LIST(FIELDS)**” on page 404.
- For the Performance List Extended report, see “**LISTX(FIELDS)**” on page 416.
- For the Performance Summary report, see “**SUMMARY(FIELDS)**” on page 428.

There are five types of CMF fields. The types are determined by CICS, defined in the CMF Dictionary record, and determine the field data type. The CMF field types are listed in Table 10 on page 393.

Table 10. CMF field types

CMF field type	Description	Output length
<b>C – Character</b>	Character string	Variable
<b>A – Count</b>	Binary counter	8
<b>P – Decimal</b>	Packed decimal number	8
<b>S – Clock</b>	Accumulation of Clock time:	
<b>Time</b>	Elapsed Time in seconds	8
<b>Count</b>	Number of occurrences	8
<b>T – Time Stamp</b>	STCK Date/Time Stamp	5-12

### Suboperand APG for Application Groups

To include an Application Group in a report, specify the Application Group name with the suboperand APG. For example, to insert a report column for an Application Group named MYAPPGRP:

```
LIST(FIELDS(MYAPPGRP(APG),...))
```

The APG suboperand identifies MYAPPGRP as an Application Group instead of a CMF field.

In the JCL for the report, the DDname CPAHDBRG identifies the repository data set that defines the Application Group.

### Suboperands for Clock type fields

Use the suboperands **TIME** and **COUNT** when specifying a clock type field. Clock type fields contain two parts: one is an accumulation of elapsed time (**TIME**), and the other is a count of the number of times the condition occurred (**COUNT**). You can request one or both types; they are treated as separate fields. For example:

```
LIST(FIELDS(SUSPEND(TIME),SUSPEND(COUNT),DISPATCH(TIME)))
```

Any clock type field specified in **FIELDS** without **TIME** or **COUNT** is assigned the default of **TIME**. However, no default exists when a clock type field is requested in a **SELECT** statement, so in this case you *must* specify either **TIME** or **COUNT**.

The precision of **TIME** fields is 0.0001 to 0.000001 (microseconds) controlled by the global operand **PRECISION(n)** where n represents 4, 5 or 6 decimal places. The default is 4.

### Suboperands for Time Stamp fields

You need to specify the format in which you want time stamp type fields reported. The date and time formats are shown in the following table. Any time stamp field specified in **FIELDS** without a format is assigned the default of **TIMET**.

Table 11. Time stamp field formats

Type	Output format	Output field length
<b>DATE</b>	mm/dd/yyyy	10
<b>DATEISO</b>	yyyy-mm-dd	10
<b>DATM</b>	mm/dd	5
<b>DATEYR</b>	mm/dd/yy	8
<b>TIMET</b>	hh:mm:ss.thm	12
<b>TIMEM</b>	hh:mm	5

Table 11. Time stamp field formats (continued)

Type	Output format	Output field length
<b>TIMES</b>	hh:mm:ss	8
<b>DATETIM</b>	yyyy-mm-dd hh:mm:ss	19
<b>TIMEP</b> (output format determined by the PRECISION(n) operand: 4, 5, or 6 decimal places)	hh:mm:ss.thmi	13
	hh:mm:ss.thmij	14
	hh:mm:ss.thmiju	15

These format options are most commonly used with the **START** and **STOP** operands.

The syntax for using these is to list the options separated by commas and enclosed in parentheses, following **START** or **STOP**. For example:

```
CICSPA LIST(FIELDS(TRAN,TERM,USERID,
                  START(DATEYR,TIMET),
                  STOP(TIMEM)))
```

### Suboperands for User fields

CICS PA can access user fields in the CMF performance records. The user fields are defined in the CICS Monitoring Control Table (MCT) as either character type, count type, or clock type. As with CICS-defined clock type fields, user clock type fields have two parts: an elapsed time and a count of the number of times the condition occurred. When specifying user fields to CICS PA, the elapsed time part of clock type fields is called **CLOCKTIME**, and the count part of clock type fields is called **CLOCKCOUNT**. Therefore, CICS PA makes it appear as if there are four types of user fields: **CHARACTER**, **COUNT**, **CLOCKTIME**, **CLOCKCOUNT**.

When specifying user fields in the command stream, certain suboperands must be used to identify the user fields in the CMF performance record. The **OWNER** suboperand is common to all user fields. Use **OWNER** to specify the eight-character owner name of the user field.

The owner of the User Field is the entry name assigned to the User Field in the DFHMCT ID= macro specification. If the entry name is not specified in the ID= parameter, CICS assigns a default entry name or owner of 'USER'. CICS PA does not have a default owner name. Even if the owner name is USER, the **OWNER** suboperand must be specified.

The remaining suboperands are different for **CHARACTER** type fields versus numeric (**COUNT**, **CLOCKTIME**, **CLOCKCOUNT**)

#### CHARACTER type

Use the **OWNER** suboperand when specifying **CHARACTER** type fields. Only one character user field can be defined for each owner name.

The syntax is:

**CHARACTER(OWNER(owner)[,SUBSTR(offset,length)])**

When printing a character user field on the Performance List or Performance Summary report, CICS PA defaults to using the entire length (up to 8 characters for the Performance Summary report) of the character user field.

Use the **SUBSTR** suboperand to specify that only part of the character user field is to be printed.



The first value (**offset**) is the position of the first character to be printed (starting at 1), and the second value (**length**) is how many characters are to be printed. For example, if the character field value is "1234567", specifying **SUBSTR(1,2)** results in "12", and specifying **SUBSTR(3,3)** results in "345".

When character user fields are used in a SELECT statement, the SUBSTR operand *must* be specified.

### COUNT, CLOCKTIME, and CLOCKCOUNT types

Use the **OWNER** and **NUMBER** operands when specifying user field types **COUNT**, **CLOCKTIME**, and **CLOCKCOUNT**. Up to 256 count type fields and up to 256 lock type fields can be defined for each owner. The **OWNER** operand specifies the eight-character name of the user field owner. This is the entry name in the DFHMCT ID= macro specification for the user field, or the CICS-assigned default name of 'USER'. **NUMBER** operand specifies the three-digit number that identifies a specific count or clock type field.

The operand syntax is

```
COUNT(OWNER(owner),NUMBER(nnn))
CLOCKTIME(OWNER(owner),NUMBER(nnn))
CLOCKCOUNT(OWNER(owner),NUMBER(nnn))
```

All **COUNT**, **CLOCKTIME**, and **CLOCKCOUNT** type fields can be summarized in the Performance Summary report. Additional operands are then required to define the type of summarization (see "SUMMARY - Performance Summary report" on page 426).

Example:

Consider a DFHMCT User Fields definition for owner (or group) USEREMP which consists of the following fields:

- Character field FIELD1 with a length of 16
- Count field COUNT1
- Clock field CLOCK1

```
DFHMCT TYPE=EMP,
      CLASS=PERFORM,
      ID=(USEREMP.1),
      CLOCK=(1,CLOCK1),
      COUNT=(1,COUNT1),
      FIELD=(1,FIELD1),
      PERFORM=(SCLOCK(1),
      ADDCNT(1,1),
      MOVE(1,16))
```

The following command generates a Performance List report that shows the following user field values:

- The first 8 characters of FIELD1
- The last 8 characters of FIELD1
- The counter in COUNT1
- The elapsed time in CLOCK1
- The counter in CLOCK1

```
CICSPA LIST(FIELDS(TRAN,STYPE,USERID,
      CHARACTER(OWNER(USEREMP),SUBSTR(1,8)),
      CHARACTER(OWNER(USEREMP),SUBSTR(9,8)),
      COUNT(OWNER(USEREMP),NUMBER(001)),
      CLOCKTIME(OWNER(USEREMP),NUMBER(001)),
      CLOCKCOUNT(OWNER(USEREMP),NUMBER(001)))))
```

---

## CICSPA control operands

Control operands are used to specify factors that affect the content of reports and extracts.

The following table lists all the control operands showing the format of the command and description of the function.

*Table 12. CICSPA control operands*

Command	Control Function
CICSPA APPLID	Application identifier of the CICS systems from which data is processed. Most reporting occasions will filter on APPLID. However, if reporting on all APPLIDs is required, the command <b>CICSPA NOAPPLID</b> can be used.
CICSPA PRECISION	Precision of numeric fields. Specifies 4, 5, or 6 decimal places to report up to microseconds.
CICSPA FORMAT	Time and date delimiters to use for the reports and extracts.
CICSPA INput	ddnames of the SMF input data sets. This required operand identifies the source of SMF records for the reports and extracts that follow.
CICSPA SUFACTOR	CPU SU conversion factor for a ddname specified in an INPUT statement.
CICSPA LINECount	Number of lines per page for the reports.
CICSPA SELECT SELECT2	Record selection for the reports and extracts. This is a powerful and flexible mechanism for filtering the input data.
CICSPA SMFSTART SMFSTOP	Start/Stop time period to limit the time range of SMF input data processed by CICS PA based on the SMF record time stamp.
CICSPA READ2EOF	Process all records through to EOF. That is, do not stop reading the SMF file as soon as the first record is encountered that is later than SMFSTOP.
CICSPA ZONE	Time zone for all reports and extracts, in number of hours west or east of Greenwich Mean Time (GMT).

Control operands are important for specifying how reports and extracts are created. These operands are normally coded before report operands, allowing them to apply to multiple reports. For example,

```
CICSPA ZONE=-8,TOTAL,SUMEXC
```

causes both the Performance Totals and Exception Summary reports to print as though the data came from time zone -8 (U.S. Pacific time).

If a control operand is specified more than once, the report operands will use the control operand immediately preceding it. This is useful if you want to create variations of one report. For example,

```
CICSPA ZONE=10,TOTAL,SUMEXC,ZONE=-8,TOTAL
```

This example creates two Performance Total reports, with the first printed as though the data came from time zone 10 (for example, Sydney), and the second printed as though from time zone -8. The Exception Summary report is printed as though the data came from time zone 10.

Except for SELECT, values are reset with a new CICSPA command. For example,

```
CICSPA ZONE=-8,TOTAL  
CICSPA TOTAL
```

This example creates two Performance Totals reports, with the first report printed as though the data came from time zone -8, and the second one printed as though from the default of the local time zone.

When a control operand is used, it affects all reports and extracts until a control operand is respecified or a new CICSPA command is issued. Note, however, that the CICSPA command does *not* reset the SELECT operand (see “Using SELECT statements” on page 525).

## APPLID

The syntax for this operand is **APPLID(applid1,...,applidn)** if one or more CICS systems, or **APPLID=applid** if only one. This operand specifies the generic application identifiers of the CICS systems whose data you want to process. When data from two or more systems is combined in one input data set, this operand can be used to select which set of data to process. APPLID can be coded before report operands to apply to multiple reports.

**NOAPPLID** can be used to report all APPLIDs with records in the SMF File.

Example 1:

```
CICSPA APPLID(CICSPROD),LIST,SUMMARY
```

This example shows the Performance List and Performance Summary reports requested for a CICS system identified by APPLID CICSPROD.

Example 2:

```
CICSPA APPLID(CICSP1,CICSP2),LIST  
CICSPA SUMMARY  
CICSPA NOAPPLID,TOTAL
```

This example generates the Performance List and Performance Summary reports for APPLIDs CICSP1 and CICSP2, and the Performance Totals report for *all* APPLIDs with records in the input file.

## PRECISION

The syntax is **PRECISION(n)** or **PRECISION=n**.

The precision of numeric fields, and of time stamp fields that specify the suboperand TIMEP. These fields can be formatted to either 4, 5, or 6 decimal places.

For example, specify PRECISION(6) to report microseconds. The default is 4.

## FORMAT

The **FORMAT** operand specifies the time and date delimiters for the reports and extracts. The syntax for this operand is **FORMAT(t,d)**.

- t**        The first operand specifies the separator character for time-of-day displays. The default is a colon (:), which produces time displays such as 08:30:12.321.
- d**        The second operand specifies the separator character for the date. The default is a slash (/), which produces date displays such as 2005/01/13.

Any character can be specified, but special characters such as a space, comma, or parenthesis must be enclosed within single quotation marks.

A single quotation mark, which is a special character, can be used as a delimiter. To specify it, use *two* single quotation marks to request the delimiter character, enclosed within the single quotation marks needed with special characters.

Example 1:

```
CICSPA FORMAT(' ',/)
```

specifies a space for the time delimiter and a slash for the date delimiter.

Example 2:

```
CICSPA FORMAT('\'',/)
```

specifies a single quotation mark for the time delimiter and a slash for the date delimiter.

Example 3:

```
CICSPA FORMAT(:,/),LIST
```

specifies the default delimiters with a Performance List report.

Example 4:

```
CICSPA FORMAT('.', ' '),LIST
```

specifies a period for the time delimiter and a space for the date delimiter in this Performance List report.

## INput

The syntax for this operand is **INPUT(ddname1,ddname2,...)** if one or more CICS systems, or **INPUT=ddname** if only one. Use this operand to specify the ddnames of the input data sets or log stream for each CICS system to be reported. If not specified, the default ddname is **SMFIN**. The CICS PA dialog, however, assigns ddnames in the format **SMFINnnn** where *nnn* is a sequential number in the range **001-999** to uniquely identify each CICS system's data sets.

For example, in the following statement the input for the Performance List and Performance Summary reports is taken from SMFIN004:

```
CICSPA INPUT(SMFIN004),  
          LIST,  
          SUMMARY
```

## Specifying data input

The input data sets to be processed by CICS PA reports and extracts must be specified in your JCL. To do this:

1. Nominate the data sets in the **SMFINnnn DD** statements of your JCL, where *nnn* is a sequential number **001-999** to uniquely identify the data sets. (CICS PA will accept other ddnames of your choosing.)
2. Code the command **CICSPA IN(ddname)** where ddname is **SMFINnnn** corresponding to the data files to be processed.

Figure 191 shows an example of the JCL.

```
//CICSPA JOB (Job Accounting)
//CPA      EXEC PGM=CPAMAIN
//SYSPRINT DD  SYSOUT=*
/* SMF Files for APPLID=APPL1
//SMFIN001 DD  DSN=CICS.APPL1.FILE1,DISP=SHR
//          DD  DSN=CICS.APPL1.FILE2,DISP=SHR,UNIT=AFF=SMFIN001
/* SMF Files for APPLID=APPL2
//SMFIN002 DD  DSN=CICS.APPL2.FILE1,DISP=SHR,UNIT=AFF=SMFIN001
//          DD  DSN=CICS.APPL2.FILE2,DISP=SHR,UNIT=AFF=SMFIN001

..
//SYSIN    DD  *
          CICSPA IN(SMFIN001),APPLID(APPL1),
                  LIST(OUTPUT(LIST0001)),
                  SUMMARY(OUTPUT(SUMM0001))
          CICSPA IN(SMFIN002),APPLID(APPL2),
                  LIST(OUTPUT(LIST0002)),
                  SUMMARY(OUTPUT(SUMM0002))
/*
//
```

Figure 191. Sample JCL Specifying Data Input

## SUFACTOR

Use the SUFACTOR operand to specify a CPU SU conversion factor for an input file. Each SMF input file ddname in the INPUT operand can have its own SUFACTOR suboperand. The SUFACTOR operand includes two keywords to identify the ddname and its associated conversion factor. The value must be a decimal number or integer in the range 1 - 999999999 (nine 9s).

Example:

```
CICSPA IN(ddname1,
          ddname2,
          ddnamen),
      [SUFACTOR(ddname1(nnnnn.nnn)),]
      [SUFACTOR(ddname2(nnnnn.nnn)),]
      [SUFACTOR(ddnamen(nnnnn.nnn)),]
      ...
```

## LINECount

LINECount is a control operand or suboperand for any report. The syntax is **LINEC(nnn)** or **LINEC=nnn**. Use this operand to specify the maximum number of lines, including headings, to print on each page of the report. The default line count is 60.

Example 1:

```
CICSPA LINEC(40),  
      LIST,  
      LISTEXC
```

The number of lines per page is 40 for both the Performance List report and the Exception List report.

Example 2:

```
CICSPA LISTEXC,  
      LIST(LINEC(40))
```

In this case, the LINECount suboperand only affects the Performance List report.

## SELECT

Use the SELECT operand to filter the input data that is reported. This operand allows you to select specific records for the reports according to values in individual CMF record fields or System Logger record fields.

One or more SELECT operands can be coded to allow control of multiple reports. It can also be used as a suboperand for any particular report or extract. For a detailed discussion on how this important operand works, see “Using SELECT statements” on page 525.

## SELECT2

The SELECT2 operand is the same as SELECT. When Selection Criteria are specified in a Report Form and also in a report that uses that Report Form, both SELECT and SELECT2 operands are used. CICS PA checks both, and both must match for the record to be processed.

## SMFSTART and SMFSTOP

Use these control operands to specify a time period to filter the input data before processing by all commands in the command input. CICS PA processes only those records with within the specified time period. If not specified, the entire input file is processed.

The syntax is:

```
CICSPA SMFSTART(date,time),  
      SMFSTOP(date,time)
```

*Date* is either a calendar date in the format *yyyy/mm/dd* or a relative date specified as 0, -1, -2,... to signify a date relative to the current date. 0 represents today, -1 yesterday, -2 two days ago, and so on.

- If both START and STOP dates are specified, they must be in the same format.
- If STOP date is not specified, it defaults to the end of file.
- If START date is not specified, it defaults to the first record in the data input file.

*Time* is a time-of-day in the format *hh:mm:ss.th*

- If START time is not specified, it defaults to the start of the day.
- If STOP time is not specified, it defaults to the end of the day.
- Times can span midnight.

**Note:**

1. When filtering records in an SMF file, SMFSTART and SMFSTOP refer to the SMF record time stamps. When filtering records in a historical database (HDB), SMFSTART and SMFSTOP refer to transaction start times. HDBs do not contain SMF record time stamps.

Do not confuse these operands with the SELECT FROM and TO report interval operands, which refer to transaction start and stop times.

2. For the DB2 report, if protected threads are in use, specify an SMFSTOP time that is at least 5 minutes past the required time (FROM/TO report interval). This is to ensure that no DB2 accounting statistics are excluded that relate to CMF performance records that are included in the report.

Example 1:

```
CICSPA SMFSTART(-1,08:30:00.00),  
      SMFSTOP(0,17:30:00.00)
```

CICS PA will process only the data from 8:30a.m. yesterday until 5:30p.m. today. Data outside this time period is ignored.

Example 2:

```
CICSPA SMFSTART(2005/02/19,),  
      SMFSTOP(,)
```

CICS PA will process the data from February 19, 2005 until the end of file. Data before this date is ignored.

## READ2EOF

This operand forces CICS PA to process all records in the SMF file through to EOF. Normally CICS PA stops reading the SMF file as soon as the first record is encountered that is later than SMFSTOP. However, if the file is not in ascending time sequence, reading might end before all records earlier than SMFSTOP have been found.

This option is only effective when SMFSTOP is specified. Select it when the SMF file has been presorted and you want to ensure that all records within the SMFSTART and SMFSTOP time range are processed.

The Read SMF File to EOF setting in the profile options is added as a READ2EOF operand to JCL built when the input is an SMF file and Report Interval is specified in the RUN panel.

## ZONE

The syntax is **ZONE(n)** or **ZONE=n**.

This provides a way to override your local CPU time zone setting and convert CMF, DB2, MQ, and System Logger clock fields to a different time zone. It is only useful if the data you are reporting was generated by a system running with a different time zone.

CMF, DB2, MQ, and Logger records have clock fields in STCK format based on Greenwich Mean Time (GMT). CMF records have conversion factors that enable the clock fields to be converted to local time. However, if you are running the DB2, MQ, or System Logger reports against records from a system with a different time zone, then you must specify the time zone option.

Specify the time zone as an integer from -12 to +12 to represent the number of hours that local time is west or east of GMT. For example, specify -5 for New York, 10 for Sydney. CICS PA will then convert GMT STCK values to the required local time for all record types.

CICS PA JCL generation translates this field to the ZONE operand.

The default is blank (not specified). In this case, when the time zone is not specified, CICS PA does the following:

- For CMF records, the conversion factors SMFMNLSO (Leap Second Offset) and SMFMNDTO (Date/Time Offset) in the CMF record are used.
- For DB2, MQ, and Logger records, the conversion factors CVTLSO (Leap Second Offset) and CVTLDTO (Date/Time Offset) in the CVT are used, that is, the reporting system's time zone is used.

Example 1:

```
CICSPA ZONE(-5),  
      LIST,  
      SUMMARY
```

This example shows ZONE applied to multiple reports. Both the Performance List and Performance Summary reports are produced as if the input data came from the zone 5 hours west of GMT (for example, Toronto, New York, Lima).

Example 2:

```
CICSPA ZONE(8),  
      LIST,  
      SUMMARY
```

Both the Performance List and Performance Summary reports are produced as if the input data came from the zone 8 hours east of GMT (for example, Singapore, Perth).

---

## LIST - Performance List report

The **LIST** operand requests the Performance List report or an extract file (see “Performance Data extract” on page 257).

The command format for the Performance List report is:

```
CICSPA LIST(  
    [OUTPUT(ddname),]  
    [ALERTDEF(defname),]  
    [SEVERITY(CRITICAL|WARNING|INFO|ELIGIBLE|ALL),]  
    [FIELDS(field1[(options)],...),]  
    [LINECount(nnn),]  
    [TITLE1('...1st 64 characters of title...'),]  
    [TITLE2('...2nd 64 characters of title...'),]  
    [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...)),]  
    [SELECT2(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...))])
```

The command format for the List Extract is:

```
CICSPA LIST(  
    [OUTPUT(ddname),]  
    [DDNAME(ddname),]  
    [DELIMIT('field-delimiter'),]  
    [LABELS|NOLABELS],  
    [FLOAT],  
    [ALERTDEF(defname),]
```



```
[SEVERITY(CRITICAL|WARNING|INFO|ELIGIBLE|ALL),]
[FIELDS(field1[(options)],...),]
[TITLE1('...1st 64 characters of title...'),]
[TITLE2('...2nd 64 characters of title...'),]
[SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...)),]
[SELECT2(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...))]]
```

The options are:

## OUTPUT

Controls the report output DDname. See “OUTPUT” on page 390 for further information. If not specified, CICS PA assigns a DDname in the format **xxxxnnnn** where nnnn is the report sequence number **0001-9999** to uniquely identify the output, and xxxx is:

**LIST** for the Performance List report.

**EXPT** for the Recap report for the List Extract.

## DDNAME

Specifies the DDname of the extract data set where the extracted data is written. When this operand is specified, instead of producing the report, CICS PA produces the extract file, and a Recap of the extract process is written to the OUTPUT operand report file.

The DDname can be up to 8 alphanumeric characters, with the first non-numeric. The CICS PA dialog assigns DDnames in the format **CPAOEXnn** where nn is the extract sequence number **01-99**. (See the sample JCL in Figure 188 on page 367).

## DELIMIT

Specifies the field delimiter, enclosed in quotes, to be used to separate each data field in the extract data set. The default is a semicolon DELIMIT(';').

## LABELS | NOLABELS

**LABELS** indicates that the first record to be written to the extract data set is to be a field labels record. This is the default.

**NOLABELS** indicates that CICS PA is not to write a field labels record to the extract data set.

## FLOAT

Write numeric fields in the extract in S390 FLOAT format. This only applies to the List Extract when the FIELDS operand is specified.

Specify FLOAT format if you plan to import the extract into a DB2 table. When the DB2 Load Utility is used, it will interpret all numerical fields reliably and consistently in FLOAT format.

If FLOAT is not specified, the numeric fields are written in a mixture of integer, real and exponential using character digits. This is the default and is suitable when importing the extract data into a PC spreadsheet tool.

## ALERTDEF

The name of a Performance Alert Definition for alert reporting.

## SEVERITY

Determines the minimum severity level to be reported and type of transactions reported.

### CRITICAL

Only Critical transactions are reported.

### WARNING

Only Critical and Warning transactions are reported.

**INFO** All alerts are reported: Critical, Warning and Informational transactions.

**ELIGIBLE**

Only eligible transactions are processed and reported. Eligible transactions are those that have resource values that match resource values specified in the alert definition. The resulting report will include eligible only transactions with and without alerts.

This option provides the means to filter out transactions that would never generate an alert because their resource values do not match resource values specified in the alert definition.

**ALL or blank**

All transactions are reported regardless of whether they are eligible or whether they generate an alert. This is the default.

**FIELDS**

Specifies which fields are included in the report or extract, their order, and format. See "LIST(FIELDS" for details.

**LINECOUNT**

Controls the number of lines per page in the List report. See "LINECount" on page 392 for further information.

**TITLE1, TITLE2**

Controls the report title (left and right half of the subheading line) for the List report or the Extract Recap. See "TITLE1 and TITLE2" on page 392 for further information.

**SELECT | SELECT2(PERFORMANCE(INCLUDE | EXCLUDE**

Specifies what data to include or exclude from the report or extract based on data field values. See "Using SELECT statements" on page 525 for an explanation and examples.

## LIST(FIELDS

The Performance List report can be tailored by modifying which fields and Application Groups are reported and the order in which they appear in the report. This is done with the **FIELDS** operand followed by the field and Application Group names:

```
CICSPA LIST[(FIELDS(field1[(options)][,apgname1(APG)],...))]
```

If FIELDS is not specified, the Performance List report is produced using the following defaults:

CICSPA LIST(FIELDS(TRAN,	Transaction ID
STYPE,	Start type of transaction
TERM,	Terminal ID
USERID,	User ID
RSYSID,	Remote System ID
PROGRAM,	Initial program name
TASKNO,	Transaction number
STOP(TIMET),	Stop time (hh:mm:ss.thm)
RESPONSE,	Response time
DISPATCH,	Dispatch time
CPU,	CPU time
SUSPEND,	Suspend time
DISPWAIT,	Dispatch wait time
FCWAIT,	File Control I/O wait time
FCAMCT,	File Control access method calls
IRWAIT))	Inter-Region (MRO) I/O wait time

**Note:**

1. The default report format cannot be changed on an individual field basis. Even if only one field is required to be changed from the default, the entire list of field names must be entered.
2. Some field types require additional operands. These are:
  - “Clock (Time-Count) fields” on page 406.
  - “Time Stamp fields.”
  - “User fields” on page 407.CPU, DISPATCH, and FCWAIT are examples of clock type fields. Therefore, they could have been specified as CPU(TIME), DISPATCH(TIME), and FCWAIT(TIME). Instead they are allowed to assume the default TIME.

## Application Groups

The command format is:

```
CICSPA LIST[(FIELDS(application-group-name(APG),...))]
```

## Character fields

The command format is:

```
CICSPA LIST[(FIELDS(fieldnames))]
```

The character fields that can be selected for the Performance List report are listed in Chapter 30, “Fields by forms, HDB templates,” on page 783. Refer to the **LIST Report Form** column and the fields with data type **C** in their CMF Field ID.

## Time Stamp fields

The command format is:

```
CICSPA LIST[(FIELDS(START|STOP(date-time-format)))]
```

The time stamp fields are:

**START**

Task start time

**STOP** Task stop time

One or more of the following formats can be selected for the time stamp fields for the Performance List report:

**DATE** Date in the format *mm/dd/yyyy*

**DATEISO**

Date in the format *yyyy-mm-dd*

**DATEM**

Date in the format *mm/dd*

**DATEYR**

Date in the format *mm/dd/yy*

**TIMET**

Time in the format *hh:mm:ss.thm*. This is the default if START or STOP is specified without a format.

**TIMEM**

Time in the format *hh:mm*

**TIMES**

Time in the format *hh:mm:ss*

**TIMEP**

Time in one of the following formats, according to the requested precision:

**4 (default)**

*hh:mm:ss.thmi*

**5**

*hh:mm:ss.thmij*

**6**

*hh:mm:ss.thmiju*

For more information on specifying time stamp fields, see “Suboperands for Time Stamp fields” on page 393.

### Count fields

The command format is:

```
CICSPA LIST[(FIELDS(fieldnames))]
```

For performance alert reporting, specify `fieldname(SEV)`.

The count fields that can be selected for the Performance List report are listed in Chapter 30, “Fields by forms, HDB templates,” on page 783. Refer to the **LIST Report Form** column and the fields with data type **A** in their CMF Field ID.

Optionally, numeric values can be converted for reporting by specifying one of the following units:

- K** Divide value by 1000, typically for count fields.
- M** Divide value by 1000000, typically for count fields.
- KB** Kilobytes (divide by 1024), typically for storage fields.
- MB** Megabytes (divide by 1024x1024), typically for storage fields.

### Clock (Time-Count) fields

The format of the command is:

```
CICSPA LIST[(FIELDS(fieldname1(TIME|COUNT),...))]
```

For performance alert reporting, specify `fieldname(SEV)`.

For clock type fields, you can report the first part of the field (elapsed TIME) or the second part (COUNT of the number of times the condition occurred). If neither is specified, the default is TIME. For more information on specifying clock fields, see “Suboperands for Clock type fields” on page 393.

The clock fields that can be selected for the Performance List report are listed in Chapter 30, “Fields by forms, HDB templates,” on page 783. Refer to the **LIST Report Form** column and the fields with data type **S** in their CMF Field ID.

### Special fields

The command format is:

```
CICSPA LIST[(FIELDS(fieldname))]
```

The special field that can be selected for the Performance List report is:

#### CPUSU

CPU time expressed in transaction service units. The task USRCPUT (DFHTASK S008) is converted to service units using a conversion factor specified for either the image on which the transaction ran or the input files. It is calculated as:

`USRCPUT * service unit conversion factor`

### Special (Time) fields

The command format is:

```
CICSPA LIST[(FIELDS(fieldnames))]
```

For performance alert reporting, specify `fieldname(SEV)`.

Special time fields are accumulations of several CMF time fields.

The special time fields that can be selected for the Performance List report are:

**COMMWAIT**

Communications wait time. The total time value of the communications related fields IRWAIT, ISWAIT, SZWAIT, TCWAIT, LU61WAIT, and LU62WAIT.

**IOWAIT**

Total I/O wait time. The total time value of FCWAIT, JCWAIT, TDWAIT, and TSWAIT.

**IRESP** Transaction internal response time.

**JVMMTIME**

JVM Method time:

$JVMTIME - (JVMITIME + JVMRTIME)$

**RESPONSE**

Transaction response time.

**RMIOTIME**

Resource Manager Interface (RMI) Other time:

$RMISUSP - (IMSWAIT + DB2RDYQW + DB2CONWT + DB2WAIT)$

Before CICS Version 620, RMIOTIME was RMIOOTHER. In CICS Version 620 and later, RMIOOTHER is a CICS CMF Field in the DFHRMI class.

**TOTCPU**

Total task CPU time:

$CPU + RLSCPU$

**User fields**

User fields can be one of the following types:

**CHARACTER**

Character string

**COUNT**

Binary or Packed counter

**CLOCKTIME and CLOCKCOUNT**

The two parts of clock type fields:

**CLOCKTIME**

The elapsed time part

**CLOCKCOUNT**

The count of the number of times the condition occurred

The format of the command for requesting user fields in the Performance List report is:

For character type user fields:

```
CICSPA LIST[(FIELDS(CHARACTER(OWNER(owner)
    [,SUBSTR(offset,length)])))]
```

For numeric type user fields:

```
CICSPA LIST[(FIELDS(COUNT|CLOCKTIME|CLOCKCOUNT(
    OWNER(owner),NUMBER(nnn)))]
```

The options are:

**OWNER(owner)**

Must be specified for all user field types. It is the 1-8 character owner of the user field, identified by the entry name in the ID= parameter of the TYPE=EMP entry in the MCT, or the CICS-assigned default name of *USER* (no entry name in the ID= parameter).

**SUBSTR(offset,length)**

Optional. Applies to character fields only. It specifies that only part of the user field is to be reported; that part starting at the *offset* position (where 1 is the first character in the field) for the number of characters specified by *length*. If SUBSTR is not specified, the default is the entire field (although limited to 8 characters for the Performance Summary report).

**NUMBER(nnn)**

Must be specified for all numeric types (COUNT, CLOCKTIME, CLOCKCOUNT). It specifies the three-digit number that identifies a specific count or clock type field. For each owner, up to 256 count type and up to 256 clock type user fields can be defined to CICS, whereas for character user fields, only one can be defined for each owner.

For more information on specifying user fields, see "Suboperands for User fields" on page 394.

**DBCTL fields**

The command format is:

```
CICSPA LIST[(FIELDS(DBCTL(field1,field2,...)))]
```

If your MCT collects DBCTL User Data (using the DFH\$MCTD macro in SDFHSAMP), then the FIELDS operand can specify the DBCTL fields. See Chapter 30, "Fields by forms, HDB templates," on page 783 for a list of these fields. Refer to the **LIST Report Form** column and the fields with owner **DBCTL** in their CMF Field ID.

**Note:** The IMS Performance Analyzer (IMS PA) can provide a comprehensive analysis of IMS DBCTL performance.

**LIST examples**

A set of sample Report Forms is provided with CICS PA. See Table 6 on page 295 for the sample LIST Report Forms. You can use these sample Report Forms with your Performance List report or Performance Data extract. They provide a detailed picture of the many aspects affecting CICS system performance.

Example 1: Default report.

```
CICSPA LIST
```

Example 2:

This example generates a Performance List report where most of the "time spent" fields are requested. For the FCWAIT field, both the TIME part and the COUNT part are requested. The DISPATCH, IOWAIT, IRWAIT, TSWAIT, TCWAIT, and JCWAIT fields default to show the TIME part. The SUSPEND field could also default to TIME.

```
CICSPA LIST(FIELDS(TRAN,RESPONSE,IRESP,DISPATCH,
                  SUSPEND(TIME),IOWAIT,FCWAIT(TIME,COUNT),
                  IRWAIT,TSWAIT,TCWAIT,JCWAIT))
```

Example 3:

This example generates a Performance List report where most of the File Control related fields are requested.

```
CICSPA LIST(FIELDS(TRAN,FCTOTAL,FCADD,FCAMCT,
                  FCBROWSE,FCDELETE,FCGET,FCPUT,
                  FCWAIT(TIME,COUNT)))
```

#### Example 4:

This example generates a Performance List report that contains user fields.

```
CICSPA LIST(FIELDS(TRAN,STYPE,USERID,
                  CHARACTER(OWNER(USEREMP),SUBSTR(1,8)),
                  CHARACTER(OWNER(USEREMP),SUBSTR(9,8)),
                  COUNT(OWNER(USEREMP),NUMBER(001)),
                  CLOCKTIME(OWNER(USEREMP),NUMBER(001)),
                  CLOCKCOUNT(OWNER(USEREMP),NUMBER(001))))
```

#### Example 5:

This example generates a Performance List report of only the performance class records with a transaction identifier of ABCD.

```
CICSPA IN(SMFIN002),
        SELECT(PERFORMANCE(INCLUDE(TRAN(ABCD)))),
        LIST
```

#### Example 6:

Few transaction abends have the value USER. This example generates a Performance List report of only those performance class records with an abend code of USER.

```
CICSPA SELECT(PERFORMANCE(INCLUDE(ABCODEC(USER)))),
        LIST
```

#### Example 7:

CICSPA LIST(FIELDS(TRAN,	Transaction ID
STYPE,	Start type of transaction
TERM,	Terminal ID
USERID,	User ID
START(TIMES),	Start time (hh:mm:ss)
STOP(TIMES),	Stop time (hh:mm:ss)
RESPONSE,	Response time
IRESP,	Internal response time
DISPATCH,	Dispatch time
CPU,	CPU time
SUSPEND,	Suspend time
DISPWAIT,	Dispatch wait time
RMISUSP,	RMI suspend time
IRWAIT,	Inter-Region (MRO) I/O wait time
FCWAIT,	File Control I/O wait time
FCAMCT))	File Control access method calls

This example produces a Performance List report like that shown in Figure 192 on page 410.

LIST0001 Printed at 12:03:45 11/12/2013 Data from 11:16:47 2/14/2005 APPLID IYK2Z1V1 Page 3

Tran	SC	Term	Userid	Start Time	Stop Time	Response Time	Int Resp Time	Dispatch Time	User CPU Time	Suspend Time	DispWait Time	RMISusp Time	IR Wait Time	FC Wait Time	FCAMRq
CSAC	TO	TC26	GBURGES	11:17:25	11:17:25	.0023	.0023	.0022	.0013	.0001	.0000	.0000	.0000	.0000	0
STAT	TO	TC26	GBURGES	11:17:29	11:17:29	.0021	.0021	.0020	.0015	.0001	.0000	.0000	.0000	.0000	0
STAT	TO	TC26	GBURGES	11:17:29	11:17:32	2.6211	.0017	.0017	.0011	2.6193	.0000	.0000	.0000	.0000	0
STAT	TO	TC26	GBURGES	11:17:32	11:17:32	.4257	.0159	.0157	.0041	.4100	.0002	.0000	.0000	.0000	0
STAT	TO	TC26	GBURGES	11:17:32	11:17:35	2.9266	.0015	.0015	.0008	2.9251	.0000	.0000	.0000	.0000	0
STAT	TO	TC26	GBURGES	11:17:35	11:17:44	9.3535	.0016	.0016	.0008	9.3519	.0000	.0000	.0000	.0000	0
STAT	TO	TC26	GBURGES	11:17:44	11:17:46	1.4981	.0012	.0012	.0008	1.4969	.0000	.0000	.0000	.0000	0
STAT	TO	TC26	GBURGES	11:17:46	11:17:47	.9179	.0010	.0010	.0010	.9169	.0000	.0000	.0000	.0000	0
STAT	TO	TC26	GBURGES	11:17:47	11:17:50	3.3607	.6967	.3832	.3533	2.9774	.0012	.0000	.0000	.0000	0
RMST	TO	P012	CBAKER	11:17:55	11:17:55	.0220	.0220	.0035	.0029	.0186	.0000	.0000	.0185	.0000	0
RMST	TO	P012	CBAKER	11:17:55	11:17:57	1.8028	.0110	.0083	.0010	1.7945	.0000	.0000	.0027	.0000	0
STAT	TO	P012	CBAKER	11:17:59	11:17:59	.0025	.0025	.0024	.0016	.0001	.0000	.0000	.0000	.0000	0
STAT	TO	P012	CBAKER	11:17:59	11:18:00	.5878	.0013	.0008	.0008	.5865	.0000	.0000	.0000	.0000	0
STAT	TO	TC26	GBURGES	11:17:50	11:18:01	10.8639	.0018	.0018	.0008	10.8621	.0000	.0000	.0000	.0000	0
STAT	TO	TC26	GBURGES	11:18:01	11:18:02	.9011	.0017	.0008	.0008	.8994	.0000	.0000	.0000	.0000	0
STAT	TO	TC26	GBURGES	11:18:02	11:18:02	.2401	.0026	.0026	.0008	.2374	.0000	.0000	.0000	.0000	0
STAT	TO	TC26	GBURGES	11:18:02	11:18:02	.2184	.0017	.0017	.0008	.2167	.0000	.0000	.0000	.0000	0
STAT	TO	P012	CBAKER	11:18:00	11:18:04	3.6050	.0020	.0020	.0014	3.6030	.0000	.0000	.0000	.0000	0
STAT	TO	TC26	GBURGES	11:18:02	11:18:04	1.5901	.0015	.0015	.0008	1.5886	.0000	.0000	.0000	.0000	0
STAT	TO	P012	CBAKER	11:18:04	11:18:05	.8993	.0014	.0014	.0010	.8979	.0000	.0000	.0000	.0000	0
STAT	TO	P012	CBAKER	11:18:05	11:18:07	2.1660	1.8732	1.3918	1.2435	.7742	.0016	.0000	.0000	.0000	0
STAT	TO	P012	CBAKER	11:18:07	11:18:07	.5329	.0016	.0016	.0012	.5313	.0000	.0000	.0000	.0000	0
STAT	TO	TC26	GBURGES	11:18:04	11:18:08	4.2871	.0017	.0017	.0008	4.2855	.0000	.0000	.0000	.0000	0
STAT	TO	TC26	GBURGES	11:18:08	11:18:09	.5435	.0017	.0017	.0008	.5418	.0000	.0000	.0000	.0000	0
STAT	TO	TC26	GBURGES	11:18:09	11:18:09	.3935	.0016	.0016	.0008	.3919	.0000	.0000	.0000	.0000	0
STAT	TO	TC26	GBURGES	11:18:09	11:18:11	1.6852	.0020	.0020	.0011	1.6832	.0000	.0000	.0000	.0000	0
CEMT	TO	P056	CBAKER	11:16:37	11:18:12	95.0977	.0042	.0042	.0035	95.0935	.0000	.0000	.0000	.0000	0
STAT	TO	TC26	GBURGES	11:18:11	11:18:13	2.1833	.0010	.0010	.0008	2.1823	.0000	.0000	.0000	.0000	0
STAT	TO	TC26	GBURGES	11:18:13	11:18:17	4.2176	.0016	.0016	.0009	4.2160	.0001	.0000	.0000	.0000	0

Figure 192. Performance List report example (using FIELDS)

## Example 8:

This example shows the Performance List report tailored to present File Control information.

```

CICSPA IN(SMFIN001),
  APPLID(applid1),
  SELECT(PERFORMANCE(INCLUDE(
    FCTOTAL(1-999999999))),
  LIST(
    OUTPUT(LIST0001),
    FIELDS(TRAN,           Transaction identifier
            PROGRAM,       Program name
            STOP(TIMES),   Task stop time
            RESPONSE,      Transaction response time
            DISPATCH(TIME), Dispatch time
            CPU(TIME),      CPU time
            SUSPEND(TIME), Suspend time
            FCWAIT(TIME),  File I/O wait time
            FCAMCT,        File access-method requests
            FCADD,         File ADD requests
            FCBROWSE,      File Browse requests
            FCDELETE,      File DELETE requests
            FCGET,         File GET requests
            FCPUT,         File PUT requests
            FCTOTAL))      File Control requests

```

## Example 9:

This example shows the Performance List report tailored to present Program Control information.

```

CICSPA IN(SMFIN002),
  APPLID(applid2),
  SELECT(PERFORMANCE(INCLUDE(
    PCLOADTI(1-999999999))),
  LIST(OUTPUT(LIST0002),
    FIELDS(TRAN,           Transaction identifier
            PROGRAM,       Program name

```



PCLINK,	Program LINK requests
PCLOAD,	Program LOAD requests
PCLOADTM(TIME),	Program Library wait time
PCSTGHWM,	Program Storage HWM above and below 16MB
PCXCTL,	Program XCTL requests
PC24BHW,	Program Storage HWM below 16MB
PC24CHWM,	Program Storage (CDSA) HWM below 16MB
PC24RHWM,	Program Storage (RDSA) HWM below 16MB
PC24SHWM,	Program Storage (SDSA) HWM below 16MB
PC31AHWM,	Program Storage HWM above 16MB
PC31CHWM,	Program Storage (ECDSA) HWM above 16MB
PC31RHWM,	Program Storage (ERDSA) HWM above 16MB
PC31SHWM))	Program Storage (ESDSA) HWM above 16MB

#### Example 10:

In this example, the Performance List report lists all transactions that use DBCTL.

```
CICSPA LIST(
  SELECT(PERFORMANCE(EXCLUDE(
    CHARACTER(OWNER(DBCTL), Exclude transaction if no PSB name
    SUBSTR(1,1),VALUE(' '))))),
  FIELDS(TRAN, Transaction identifier
    PROGRAM, Program name
    STOP(TIMES), Task stop time
    RESPONSE, Transaction response time
    DISPATCH(TIME), Dispatch time
    CPU(TIME), CPU time
    SUSPEND(TIME), Suspend time
    DBCTL(
      PSBNAME, PSB Name
      DLICALLS, Total DL/I Database calls
      POOLWAIT, Elapsed wait time for Pool Space
      INTCWAIT, Elapsed wait time for Intent Conflict
      SCHTELAP, Elapsed time for Schedule Process
      DBIOELAP, Elapsed time for Database I/O
      PILOCKEL, Elapsed time for PI Locking
      THREDCPU)))
```

#### Example 11:

```
CICSPA IN(SMFIN004),
  SELECT(PERFORMANCE(EXCLUDE(
    CHARACTER(OWNER(DBCTL), Exclude transaction if no PSB name
    SUBSTR(1,1),VALUE(' '))))),
  LIST(FIELDS(
    TRAN, Transaction identifier
    DBCTL(PSBNAME), PSB name
    START, Task start time
    RESPONSE, Transaction response time
    CPU, CPU time
    DISPATCH, Dispatch time
    SUSPEND, Suspend time
    DBCTL(
      POOLWAIT, Elapsed wait time for Pool Space
      INTCWAIT, Elapsed wait time for Intent Conflict
      SCHTELAP, Elapsed time for Schedule Process
      DBIOELAP, Elapsed time for Database I/O
      PILOCKEL, Elapsed time for PI Locking
      DBIOCALL, Number of Database I/Os
      DLICALLS)))
```

This DBCTL example produces a Performance List report like that shown in Figure 193 on page 412.

**Note:** The IMS Performance Analyzer (IMS PA) can provide a more comprehensive analysis of IMS DBCTL performance.

V5R2M0

CICS Performance Analyzer  
Performance List

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DBCTL transactions

Tran	PSB	Start Time	Response Time	User Time	CPU Time	Dispatch Time	Suspend Time	PoolWait Time	ICwait Time	SchedElp Time	DBIOElap Time	PILockEl Time	DBIOcall Time	DLIcalls
DLI0	DDLPSB51	15:58:47.251	1.0479	.0483	.9427	.1052	.0000	.0000	.0000	.0079	.0000	.0000	0	0
DLI0	DDLPSB51	15:58:49.634	.0615	.0118	.0168	.0447	.0000	.0000	.0000	.0034	.0000	.0000	0	0
DLI0	DDLPSB51	16:51:16.979	1.4467	.0474	1.2820	.1648	.0000	.0000	.0000	.0080	.0000	.0000	0	0
DLI0	DDLPSB51	16:58:03.662	.0934	.0114	.0176	.0758	.0000	.0000	.0000	.0034	.0000	.0000	0	0
DLI0	DDLPSB51	16:58:04.244	.0933	.0114	.0161	.0772	.0000	.0000	.0000	.0035	.0000	.0000	0	0
DLI2	DDLPSB51	17:00:16.874	3.0710	.0110	.1065	2.9644	.0000	.0000	.0000	.0034	.0000	.0000	0	0
DLI7	DDLPSB51	17:00:17.180	3.0274	.0116	.1441	2.8833	.0000	.0000	.0000	.0245	.0000	.0000	0	0
DLI3	DDLPSB51	17:00:17.212	3.2297	.0129	.0108	3.2189	.0000	.0000	.0000	.0056	.0000	.0000	0	0
DLI4	DDLPSB51	17:00:17.213	3.7488	.0109	.0112	3.7375	.0000	.0000	.0000	.0036	.0000	.0000	0	0
DLI9	DDLPSB51	17:00:17.217	18.7260	.0108	2.8553	15.8707	.0000	.0000	.0000	.0034	.0000	.0000	0	0
DLI1	DDLPSB51	17:00:17.218	18.8168	.0131	.0227	18.7941	.0000	.0000	.0000	.0041	.0000	.0000	0	0
DLI0	DDLPSB51	17:00:17.217	18.9042	.0130	2.7601	16.1441	.0000	.0000	.0000	.0034	.0000	.0000	0	0
DLI0	DDLPSB51	13:14:14.187	.5046	.0439	.1369	.3676	.0000	.0000	.0000	.0035	.0000	.0000	0	0
DLI0	PSB99	13:01:22.918	5.9288	2.1340	3.8341	2.0947	.0000	.0000	.0000	1.0004	.0000	.0000	0	2
DLI0	PSB99	13:17:35.232	3.5302	2.1659	2.7387	.7914	.0000	.0000	.0000	.0010	.0000	.0000	0	2
DLI0	PSB99	13:45:38.833	3.4382	2.1744	2.4742	.9640	.0000	.0000	.0000	.0010	.0000	.0000	0	2
DLI0	PSB99	13:48:16.354	1.0711	.0428	.2282	.8429	.0000	.0000	.0000	.0024	.0000	.0000	0	1
DLI0	PSB99	13:48:24.131	.2516	.0118	.0184	.2332	.0000	.0000	.0000	.0010	.0000	.0000	0	1
DLI0	PSB99	13:48:25.012	.3658	.0117	.0168	.3490	.0000	.0000	.0000	.0011	.0000	.0000	0	1
DLI0	PSB99	13:48:25.963	.3745	.0118	.0174	.3571	.0000	.0000	.0000	.0010	.0000	.0000	0	1
DLI0	PSB99	13:48:26.919	.2871	.0116	.0180	.2691	.0000	.0000	.0000	.0010	.0000	.0000	0	1
DLI0	PSB99	13:48:27.907	.2511	.0117	.0170	.2341	.0000	.0000	.0000	.0010	.0000	.0000	0	1
DLI0	PSB99	15:36:20.458	.7925	.0451	.2664	.5261	.0000	.0000	.0000	.0010	.0000	.0000	0	1
DLI0	PSB99	15:38:29.047	.6985	.0466	.1953	.5032	.0000	.0000	.0000	.0011	.0000	.0000	0	2
DLI0	PSB99	15:38:50.508	.5742	.0457	.1260	.4482	.0000	.0000	.0000	.0010	.0000	.0000	0	2
DLI0	PSB99	15:49:07.072	.9596	.0486	.1879	.7717	.0000	.0000	.0000	.0010	.0000	.0000	0	2
DLI2	PSB99	15:53:29.716	91.8213	1.8717	2.0128	89.8085	.0000	.0000	.0000	.0010	.0000	.0000	0	1
DLI3	PSB99	15:53:30.402	156.501	1.9866	24.4980	132.003	.0000	.0000	.0000	.0055	.0000	.0000	0	1
DLI5	PSB99	15:53:30.497	233.355	1.9771	18.1590	215.196	.0000	.0000	.0000	.0049	.0000	.0000	0	1
DLI1	PSB99	15:56:53.478	95.2870	1.9511	16.4508	78.8363	.0000	.0000	.0000	.0050	.0000	.0000	0	1

Figure 193. Performance List report (DBCTL transactions)

Example 12:

```
CICSPA LIST(OUTPUT(EXPT0001),
             DDNAME(CPAOEX01),
             DELIMIT(';'),
             LABELS,
             TITLE1('LIST Performance Data Extract'),
             FIELDS(TRAN,RESPONSE,TERM,STYPE,
                   USERID,RSYSID,PROGRAM))
```

This example produces a List Performance Data extract data set and a Recap report like that shown in Figure 194. See “Performance Data extract” on page 257 for more information on the Performance Data extract facility.

V5R2M0

CICS Performance Analyzer  
Performance List

EXPT0001 Printed at 12:03:45 11/12/2013    Data from 15:41:29 6/12/2004    APPLID CICPAOR1    Page 1

LIST Performance Data Extract

CPAOEX01 Extract has completed successfully  
Data Set Name . . . . CICSPA.LIST.EXTRACT  
Record count . . . . 339

Figure 194. List Performance Data extract (Recap report)

Example 13:

```
CICSPA LIST(OUTPUT(LIST0001),
             FIELDS(BUSFUNC(APG),
                   TASKNO,
                   STOP(TIMET),
                   RESPONSE,
                   DISPATCH(TIME),
                   CPU(TIME),
                   SUSPEND(TIME),
                   DISPWAIT(TIME)))
```

This Application Grouping example produces a Performance List report like that shown in Figure 195. This report uses the BUSFUNC Application Group shown in Figure 172 on page 337.

V5R2M0		CICS Performance Analyzer Performance List						
LIST0001 Printed at 12:03:45 11/12/2013		Data from 10:29:00 3/20/2008		APPLID CICPAORI		Page 1		
BUSFUNC Group	TaskNo	Stop Time	Response Time	Dispatch Time	User Time	CPU Time	Suspend Time	DispWait Time
Finance	19576	10:29:00.008	.0018	.0014	.0014	.0004	.0000	.0000
CICS-supplied transactions	19594	10:29:00.058	.0013	.0001	.0001	.0012	.0000	.0000
CICS-supplied transactions	19595	10:29:00.060	.0010	.0001	.0001	.0008	.0000	.0000
CICS-supplied transactions	19597	10:29:00.062	.0008	.0002	.0002	.0006	.0000	.0000
CICS-supplied transactions	19591	10:29:00.063	.0269	.0003	.0003	.0266	.0000	.0000
Unassigned transactions	19607	10:29:00.105	.0005	.0005	.0004	.0000	.0000	.0000
CICS-supplied transactions	19600	10:29:00.108	.0409	.0003	.0002	.0406	.0000	.0000
Statistics collection	19577	10:29:00.120	.1121	.0011	.0010	.1110	.0002	.0000
Statistics collection	19592	10:29:00.121	.0837	.0006	.0006	.0830	.0000	.0000
Delivery	19605	10:29:00.132	.0419	.0003	.0003	.0416	.0000	.0000
CICS-supplied transactions	19581	10:29:00.134	.1184	.0003	.0002	.1181	.0000	.0000
CICS-supplied transactions	19582	10:29:00.134	.1175	.0003	.0003	.1172	.0000	.0000
CICS-supplied transactions	19613	10:29:00.135	.0153	.0003	.0003	.0150	.0000	.0000
Finance	19614	10:29:00.141	.0162	.0003	.0002	.0160	.0000	.0000

Figure 195. Performance List report (Application Grouping)

Example 14: Performance Alerts List report and extract.

```
CICSPA PRECISION(4),
LIST(OUTPUT(LIST0001),
      ALERT(ALERT01),
      SEVERITY(ALL),
      FIELDS(TRAN,
              PROGRAM,
              TASKNO,
              STOP(TIMET),
              RESPONSE,
              RESPONSE(SEV),
              DISPATCH(TIME),
              DISPATCH(SEV),
              CPU(TIME),
              CPU(SEV),
              FCAMCT,
              IRWAIT(TIME))))
```

V5R2M0		CICS Performance Analyzer														
		Performance List														
LIST0001 Printed at 16:47:24 4/20/2010		Data from 07:50:50		3/26/2009		APPLID XYZ287V2										
Tran	Program	TaskNo	Stop Time	Response Time	Sev	Response Time	Dispatch Time	Sev	Dispatch Time	User Time	CPU Time	Sev	User Time	FCAMRq	IR	Wait Time
CSSY	DFHAPATT	20	07:50:50.574	.0038			.0001			.0001				0		.0000
CSSY	DFHAPATT	21	07:50:50.576	.0060			.0002			.0002				0		.0000
CSSY	DFHAPATT	22	07:50:50.582	.0105	Info		.0016			.0004				0		.0000
CSSY	DFHAPATT	19	07:50:50.606	.0364	Info		.0238	Info		.0012	Info			0		.0000
CSSY	DFHAPATT	17	07:50:50.661	.0913	Info		.0272	Info		.0016	Info			0		.0000
CGRP	DFHZCGRP	13	07:50:50.713	.1452			.0274			.0015				0		.0000
CSSY	DFHAPATT	16	07:50:50.721	.1520	Warning		.0269	Info		.0019	Info			0		.0000
CSSY	DFHAPATT	14	07:50:50.733	.1648	Warning		.0258	Info		.0012	Info			0		.0000
CSSY	DFHAPATT	18	07:50:50.844	.2747	Warning		.0565	Info		.0033	Info			0		.0000
CSSY	DFHAPATT	12	07:50:50.894	.3263	Warning		.0551	Info		.0047	Info			0		.0000
CSSY	DFHAPATT	11	07:50:50.909	.3409	Warning		.0617	Info		.0060	Info			0		.0000
CSSY	DFHAPATT	15	07:50:51.042	.4730	Warning		.0764	Info		.0093	Info			1		.0000
CPLT	DFHSIPLT	8	07:50:56.495	5.9899			1.0481			.0619				9		.0000
CRLR	DFHRLR	29	07:50:56.588	.0485			.0126			.0010				0		.0000
CEJR	DFHEJITL	57	07:51:00.188	2.5847	Critical		2.4988	Critical		1.7953	Critical			0		.0000
CPTR	DFHPITL	37	07:51:00.349	3.7469			3.4951			.0523				0		.0000
CEMT	DFHEMTP	63	07:51:00.703	.0616	Info		.0504	Info		.0057	Info			0		.0000

Figure 196. Performance Alerts List report

See the supplied sample jobs CPAPALST and CPAPAXTL in the SCPASAMP library.

---

## LISTX - Performance List Extended report

The **LISTX** operand requests the Performance List Extended report or the Cross-System Work Extended report.

The command format for the Performance List Extended report is:

```
CICSPA LISTX(
    [OUTPUT(ddname),]
    [EXTERNAL(ddname),]
    [BY(by1(ASCEND|DESCEND),
        by2(ASCEND|DESCEND),
        by3(ASCEND|DESCEND)),]
    [LIMIT(fieldname(proclim)),]
    [FIELDS(field1[(options)],...),]
    [LINECount(nnn),]
    [TITLE1('...up to 64 characters...'),]
    [TITLE2('...up to 64 characters...'),]
    [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...)),]
    [SELECT2(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...))])
```

The command format for the Cross-System Work Extended report is:

```
CICSPA LISTX(
    [OUTPUT(ddname),]
    [EXTERNAL(ddname),]
    [BY(UOWID),]
    [PRINTMULTIPLE|NOPRINTMULTIPLE,]
    [PRINTSINGLE|NOPRINTSINGLE,]
    [FIELDS(field1[(options)],...),]
    [LINECount(nnn),]
    [TITLE1('...up to 64 characters...'),]
    [TITLE2('...up to 64 characters...'),]
    [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...)),]
    [SELECT2(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...)),]
    [SELUOW(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...))])
```

The options are:

### OUTPUT

Controls the report output DDname. If not specified, CICS PA assigns a DDname in the format **LSTXnnnn** where nnnn is the report sequence number **0001-9999**. See “OUTPUT” on page 390 for further information.

### EXTERNAL

Specifies the DDname for the work data set used by the external SORT facility. If not specified, CICS PA assigns an External Work File from a pool of External Work Files with DDnames in the format **CPAXWnnn** where nnn is the sequence number **001-999**. See “EXTERNAL” on page 391 for further information.

### BY

- For the Performance List Extended report:
  - BY dictates the summarization order of the report. Up to three fields can be specified, where *by1* is the major sort field, *by2* the intermediate, and *by3* the minor sort field. Not all fields can be sort fields. See “LISTX(BY(field1,field2,field3))” on page 415 for the list of fields which are sort candidates.

The default sort order is ASCEND (ascending). Specify DESCEND if you want a field sorted in descending order.

If BY is not specified, the default is BY(TRAN,TERM).
- For the Cross-System Work Extended report:

**BY(UOWID)** identifies that the CMF records are grouped by network unit-of-work. No other BY fields can be specified.

#### **PRINTMULTIPLE**

Print only the transaction performance records consisting of units-of-work that include multiple CMF records. This is the default for the report.

#### **NOPRINTMULTIPLE**

Do not print the transaction performance records consisting of units-of-work that include multiple CMF records.

#### **PRINTSINGLE**

Print the transaction performance records consisting of units-of-work that include only a single CMF record. To get a listing containing these records only, you must suppress the default PRINTMULTIPLE option by specifying NOPRINTMULTIPLE as well.

#### **LIMIT**

Optional. Limits the number of selected performance class records which are processed. Only one field can be specified. The LIMIT *fieldname* must be the same as one of the field names specified in the BY operand. See "LISTX(LIMIT" on page 416 for the list of eligible fields.

*proclim* specifies the maximum number of records to be processed at a level corresponding to the location of the field parameter in the BY operand.

#### **FIELDS**

Specifies which fields are reported, the order of the columns, and the format of any time stamp fields. The sort fields specified in the BY operand must also be specified in the FIELDS operand. See "LISTX(FIELDS" on page 416 for the complete list of fields and their options by field type.

#### **LINECOUNT**

Controls the number of lines per page. See "LINECount" on page 392 for further information.

#### **TITLE1, TITLE2**

Controls the report title (left and right half of subheading line). See "TITLE1 and TITLE2" on page 392 for further information.

#### **SELECT|SELECT2(PERFORMANCE(INCLUDE|EXCLUDE**

Specifies what data to include or exclude from the report based on data field values. See "Using SELECT statements" on page 525 for an explanation and examples.

#### **SELUOW(PERFORMANCE(INCLUDE|EXCLUDE**

Specifies what units-of-work to include or exclude from the Cross-System Work Extended report based on data field values. If one task in a multi-task UOW matches the selection criteria, then all tasks for that UOW are selected.

It can be used in conjunction with SELECT to first filter out those tasks that you know are of no interest and thereby optimize the record sort process.

### **LISTX(BY(field1,field2,field3)**

The summarization order of the Performance List Extended report can be modified. This is done with the BY operand followed by one to three field names specified in the order of the required sort precedence:

CICSPA LISTX[(BY(field1([APG,]ASCEND|DESCEND),...))]

Ascending sequence is the default. Specify DESCEND for descending sequence.

If BY is not specified, the default is **BY(TRAN)**.

The sort fields that can be specified for the Performance List Extended report are Application Groups, user fields, or the CMF fields listed in Chapter 30, "Fields by forms, HDB templates," on page 783 column and the fields marked S.

If the sort field is an Application Group, you must specify the APG suboperand. For example, to sort by the Application Group named MYAPPGRP, specify:

```
CICSPA LISTX(BY(MYAPPGRP(APG)))
```

## LISTX(BY(UOWID))

```
CICSPA LISTX[(BY(UOWID))]
```

This requests the Cross-System Work Extended report in which the CMF records are grouped by network unit-of-work in ascending sequence. No other BY fields can be specified.

## LISTX(LIMIT

The LIMIT operand can be specified for the Performance List Extended report to limit the number of records processed for a particular field. This field must be the same as one of the fields specified in the BY clause.

The format of the command is:

```
CICSPA LISTX[(LIMIT(fieldname([APG,]proclim)))]
```

where *fieldname* is one of the fields selected for "LISTX(BY(field1,field2,field3))" on page 415. For example, to set a limit of 2 on a user field:

```
CICSPA LISTX(LIMIT(CHARACTER(OWNER(CCVALIST),SUBSTR(1,16))(2)),...)
```

If the field is an Application Group, then you must specify the suboperand APG. For example, for an Application Group named MYAPPGRP:

```
CICSPA LISTX(LIMIT(MYAPPGRP(APG,20)),...)
```

## LISTX(FIELDS

The Performance List Extended report and Cross-System Work Extended report can be tailored by modifying which fields and Application Groups are reported and the order in which they appear in the report. This is done with the FIELDS operand followed by the field and Application Group names:

```
CICSPA LISTX[(FIELDS(field1[(options)],...))]
```

If the BY and FIELDS operands are not specified, the Performance List Extended report is produced using the following defaults:

```
CICSPA LISTX(BY(TRAN),
              FIELDS(TRAN,      Transaction ID
                     STYPE,     Start type of transaction
                     USERID,    User ID
                     RSYSID,    Remote System ID
                     PROGRAM,   Initial program name
                     TASKNO,    Transaction number
                     STOP(TIMET), Stop time (hh:mm:ss.thm)
                     RESPONSE,  Response time
                     DISPATCH,  Dispatch time
                     CPU,       CPU time
```

SUSPEND,	Suspend time
DISPWAIT,	Dispatch wait time
FCWAIT,	File Control I/O wait time
FCAMCT,	File Control access method calls
IRWAIT))	Inter-Region (MRO) I/O wait time

This produces the default report shown in Figure 197.

#### Note:

1. The report format cannot be changed on an individual field basis. Even if only one field is required to be changed from the default, the entire list of field names must be entered.
2. Some field types require additional operands:

- See “Time Stamp Fields” on page 418.
- See “Clock (Time-Count) Fields” on page 418.

CPU, DISPATCH, and FCWAIT are examples of clock type fields. They could have been specified as CPU(TIME), DISPATCH(TIME), and FCWAIT(TIME). Instead they are allowed to assume the default TIME.

V5R2M0		CICS Performance Analyzer										Page 1		
		Performance List Extended												
LSTX0001 Printed at 12:03:45 11/12/2013 Data from 11:10:51 2/14/2005 to 11:34:13 2/14/2005														
Tran	SC	Userid	RSID	Program	TaskNo	Stop Time	Response Time	Dispatch Time	User CPU Time	Suspend Time	DispWait Time	FC Wait Time	FCAMrq	IR Wait Time
AADD	TO	BRENNER	DFHSAALL	52	11:12:54.123	.0945	.0831	.0084	.0114	.0113	.0000	0	.0000	
AADD	TO	BRENNER	DFHSAALL	54	11:13:06.234	.0636	.0619	.0047	.0017	.0016	.0000	0	.0000	
AADD	TP	BRENNER	DFHSAALL	65	11:14:27.312	.0029	.0026	.0017	.0003	.0002	.0000	3	.0000	
AADD	TO	BRENNER	DFHSAALL	551	11:26:41.422	.0016	.0016	.0013	.0001	.0000	.0000	0	.0000	
AADD	TP	BRENNER	DFHSAALL	561	11:27:02.531	.0026	.0022	.0017	.0003	.0002	.0000	3	.0000	
AADD	TO	GBURGES	DFHSAALL	136	11:20:04.642	.0011	.0010	.0010	.0001	.0000	.0000	0	.0000	
AADD	TO	GBURGES	DFHSAALL	137	11:20:08.753	.0022	.0021	.0012	.0001	.0000	.0000	0	.0000	
AADD	TP	GBURGES	DFHSAALL	138	11:20:15.865	.0023	.0022	.0013	.0001	.0000	.0000	0	.0000	
AADD	TO	GBURGES	DFHSAALL	183	11:21:51.877	.0022	.0022	.0012	.0001	.0000	.0000	0	.0000	
AADD	TP	GBURGES	DFHSAALL	184	11:21:58.988	.0023	.0022	.0013	.0001	.0000	.0000	0	.0000	
ABRW	TP	CBAKER	DFHSABRW	139	11:16:51.099	.6982	.6717	.0385	.0264	.0111	.0051	6	.0000	
ABRW	TP	CBAKER	DFHSABRW	140	11:16:52.100	.0018	.0018	.0015	.0001	.0000	.0000	7	.0000	
ABRW	TP	CBAKER	DFHSABRW	141	11:16:52.210	.0021	.0020	.0015	.0001	.0000	.0000	7	.0000	
ABRW	TP	CBAKER	DFHSABRW	142	11:16:52.320	.0018	.0017	.0014	.0001	.0000	.0000	7	.0000	
ABRW	TP	CBAKER	DFHSABRW	143	11:16:53.331	.0020	.0019	.0015	.0001	.0000	.0000	7	.0000	
ABRW	TP	CBAKER	DFHSABRW	144	11:16:53.542	.0038	.0037	.0013	.0001	.0000	.0000	0	.0000	
ABRW	TP	CBAKER	DFHSABRW	365	11:22:38.653	.0020	.0019	.0015	.0001	.0000	.0000	6	.0000	
ABRW	TP	CBAKER	DFHSABRW	366	11:22:40.764	.0019	.0016	.0013	.0002	.0000	.0000	7	.0000	
ABRW	TP	CBAKER	DFHSABRW	367	11:22:41.875	.0018	.0018	.0015	.0001	.0000	.0000	7	.0000	
ABRW	TP	CBAKER	DFHSABRW	368	11:22:41.886	.0018	.0017	.0012	.0001	.0000	.0000	0	.0000	
ABRW	TP	CBAKER	DFHSABRW	206	11:24:34.921	.0052	.0021	.0021	.0031	.0000	.0000	0	.0030	
ABRW	TO	BRENNER	DFHSABRW	53	11:12:19.032	.5819	.0783	.0121	.5037	.0127	.0000	0	.4908	
ABRW	TP	BRENNER	DFHSABRW	59	11:13:17.140	.0070	.0034	.0029	.0036	.0000	.0000	0	.0036	
ABRW	TP	BRENNER	DFHSABRW	61	11:13:20.259	.0080	.0028	.0024	.0052	.0000	.0000	0	.0051	
ABRW	TP	BRENNER	DFHSABRW	62	11:13:21.366	.0064	.0027	.0023	.0036	.0000	.0000	0	.0036	
ABRW	TP	BRENNER	DFHSABRW	63	11:13:24.475	.0018	.0017	.0014	.0001	.0000	.0000	0	.0000	
ABRW	TO	GBURGES	DFHSABRW	109	11:19:44.584	.0071	.0040	.0027	.0030	.0000	.0000	0	.0030	
ABRW	TP	GBURGES	DFHSABRW	110	11:19:49.698	.0064	.0031	.0021	.0033	.0000	.0000	0	.0032	

Figure 197. Performance List Extended report (default BY and FIELDS)

## Application Groups

The command format is:

CICSPA LISTX[(FIELDS(application-group-name(APG),...))]

## Character Fields

The command format is:

CICSPA LISTX[(FIELDS(fieldnames))]

The character fields that can be selected for the Performance List Extended report are listed in Chapter 30, “Fields by forms, HDB templates,” on page 783. Refer to the **LISTX Report Form** column and the fields with data type **C** in their CMF Field ID.

## Time Stamp Fields

The command format is:

```
CICSPA LISTX[(FIELDS(START|STOP(date-time-format)))]
```

The time stamp fields are:

### START

Task start time

### STOP

Task stop time

One or more of the following formats can be selected for the time stamp fields:

**DATE** Date in the format *mm/dd/yyyy*

### DATEISO

Date in the format *yyyy-mm-dd*

### DATEM

Date in the format *mm/dd*

### DATEYR

Date in the format *mm/dd/yy*

### TIMET

Time in the format *hh:mm:ss.thm*. This is the default if START or STOP is specified without a format.

### TIMEM

Time in the format *hh:mm*

### TIMES

Time in the format *hh:mm:ss*

### TIMEP

Time in one of the following formats, according to the requested precision:

#### 4 (default)

*hh:mm:ss.thmi*

5 *hh:mm:ss.thmij*

6 *hh:mm:ss.thmiju*

For more information on specifying time stamp fields, see “Suboperands for Time Stamp fields” on page 393.

## Count Fields

The command format is:

```
CICSPA LISTX[(FIELDS(...,fieldname,...))]
```

The count fields that can be selected for the Performance List Extended report are listed in Chapter 30, “Fields by forms, HDB templates,” on page 783. Refer to the **LISTX Report Form** column and the fields with data type **A** in their CMF Field ID.

Optionally, numeric values can be converted for reporting by specifying one of the following units:

**K** Divide value by 1000, typically for count fields.

**M** Divide value by 1000000, typically for count fields.

**KB** Kilobytes (divide by 1024), typically for storage fields.

**MB** Megabytes (divide by 1024x1024), typically for storage fields.

## Clock (Time-Count) Fields

The command format is:

```
CICSPA LISTX[(FIELDS(fieldname1(TIME|COUNT),...))]
```



For clock type fields, you can report the first part of the field (elapsed TIME) or the second part (COUNT of the number of times the condition occurred). The default is TIME. For more information on specifying clock fields, see “Suboperands for Clock type fields” on page 393.

The clock fields that can be selected for the Performance List report are listed in Chapter 30, “Fields by forms, HDB templates,” on page 783. Refer to the **LISTX Report Form** column and the fields with data type **S** in their CMF Field ID.

### Special fields

The command format is:

```
CICSPA LISTX[(FIELDS(fieldname))]
```

The special field that can be selected for the Performance List Extended report is:

#### **CPUSU**

CPU time expressed in transaction service units. The task USRCPUT (DFHTASK S008) is converted to service units using a conversion factor specified for either the image on which the transaction ran or the input files. It is calculated as:

$\text{USRCPUT} * \text{service unit conversion factor}$

### Special (Time) Fields

The command format is:

```
CICSPA LISTX[(FIELDS(fieldnames))]
```

Special time fields are accumulations of several CMF time fields.

The special time fields that can be selected for the Performance List Extended report are:

#### **COMMWAIT**

Communications wait time. The total time value of the communications related fields IRWAIT, ISWAIT, SZWAIT, TCWAIT, LU61WAIT, and LU62WAIT.

#### **IOWAIT**

Total I/O wait time. The total time value of FCWAIT, JCWAIT, TDWAIT, and TSWAIT.

**IRESP** Transaction internal response time

#### **JVMMTIME**

JVM Method time:

$\text{JVMTIME} - (\text{JVMITIME} + \text{JVMRTIME})$

#### **RESPONSE**

Transaction response time

#### **RMIOTIME**

Resource Manager Interface (RMI) Other time:

$\text{RMISUSP} - (\text{IMSWAIT} + \text{DB2RDYQW} + \text{DB2CONWT} + \text{DB2WAIT})$

Before CICS Version 620, RMIOTIME was RMIOOTHER. In CICS Version 620 and later, RMIOOTHER is a CICS CMF Field in the DFHRMI class.

#### **TOTCPU**

Total task CPU time:

$\text{CPU} + \text{RLSCPU}$

### User fields

User fields can be one of the following types:

**CHARACTER**

Character string

**COUNT**

Binary or Packed counter

**CLOCKTIME and CLOCKCOUNT**

The two parts of clock type fields:

**CLOCKTIME**

The elapsed time part

**CLOCKCOUNT**

The count of the number of times the condition occurred

The format of the command for requesting user fields in the Performance List Extended report is:

For character type user fields:

```
CICSPA LISTX[(FIELDS(CHARACTER(OWNER(owner)
[,SUBSTR(offset,length)])))]
```

For numeric type user fields:

```
CICSPA LISTX[(FIELDS(COUNT|CLOCKTIME|CLOCKCOUNT(
OWNER(owner),NUMBER(nnn)))]
```

The options are:

**OWNER(owner)**

Must be specified for all user field types. It is the 1-8 character owner of the user field, identified by the entry name in the ID= parameter of the TYPE=EMP entry in the MCT, or the CICS-assigned default name of *USER* (no entry name in the ID= parameter).

**SUBSTR(offset,length)**

Optional. Applies to character fields only. It specifies that only part of the user field is to be reported; that part starting at the *offset* position (where 1 is the first character in the field) for the number of characters specified by *length*. If SUBSTR is not specified, the default is the entire field (although limited to 8 characters for the Performance Summary report).

**NUMBER(nnn)**

Must be specified for all numeric types (COUNT, CLOCKTIME, CLOCKCOUNT). It specifies the three-digit number that identifies a specific count or clock type field. For each owner, up to 256 count type and up to 256 clock type user fields can be defined to CICS, whereas for character user fields, only one can be defined for each owner.

For more information on specifying user fields, see "Suboperands for User fields" on page 394.

**DBCTL fields**

The command format is:

```
CICSPA LISTX[(FIELDS(DBCTL(field1,field2,...)))]
```

If your MCT collects DBCTL User Data (using the DFH\$MCTD macro in SDFHSAMP), then the FIELDS operand can specify the DBCTL fields. See Chapter 30, "Fields by forms, HDB templates," on page 783 for a list of these fields. Refer to the **LISTX Report Form** column and the fields with owner **DBCTL** in their CMF Field ID.

**Note:** The IMS Performance Analyzer (IMS PA) can provide a comprehensive analysis of IMS DBCTL performance.

## LISTX examples

A set of sample Report Forms is provided with CICS PA. See Table 6 on page 295 for the sample LISTX Report Forms. You can use these sample Report Forms with your Performance List Extended and Cross-System Work Extended reports. They provide a detailed picture of the many aspects affecting CICS system performance.

Example 1: Default report

```
CICSPA LISTX
```

This example generates the default Performance List Extended report.

Example 2: Worst response times (all transactions)

Figure 198 on page 422 shows an example of using the BY, LIMIT, and FIELDS operands to generate a Performance List Extended report sorted in descending order by response time. The LIMIT statement will limit the number of performance records processed to the first 20 and the resulting report will contain the 20 performance class records with the longest response time.

```
CICSPA LISTX(  
    BY(RESPONSE(DESCEND)),  
    LIMIT(RESPONSE(20)),  
    FIELDS(TRAN,           Transaction ID  
           TERM,           Terminal ID  
           STYPE,          Start type of transaction  
           USERID,         User ID  
           RSYID,          Remote System ID  
           PROGRAM,        Initial program name  
           TASKNO,         Transaction number  
           STOP(TIMES),     Stop time (hh:mm:ss)  
           RESPONSE,        Response time  
           DISPATCH,        Dispatch time  
           CPU,             CPU time  
           SUSPEND,         Suspend time  
           DISPWAIT,        Dispatch wait time  
           FCWAIT,          File Control I/O wait time  
           IRWAIT))         Inter-Region (MRO) I/O wait time
```

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Tran	Term	SC	Userid	RSID	Program	TaskNo	Stop Time	Response Time	Dispatch Time	User CPU Time	Suspend Time	DispWait Time	FC Wait Time	IR Wait Time
CSNC	U	CB	BAKER		DFHCRNP	21	11:34:10	1386.70	1.4058	.0233	1385.29	.0208	.0000	.0000
CSNE	U	CB	BAKER		DFHZNAC	30	11:34:11	1379.15	.0980	.0226	1379.05	.0034	.0000	.0000
CSHQ	U	CB	BAKER		DFHSHSY	23	11:33:50	1362.60	.3326	.0344	1362.27	.0140	.0000	.0000
CWXN	U	CB	BAKER		DFHWPBXN	119	11:34:06	1102.23	.0129	.0064	1102.22	.0218	.0000	.0000
CWXN	U	CB	BAKER		DFHWPBXN	331	11:34:12	782.697	.0041	.0037	782.693	.0103	.0000	.0000
CEMT P052	TO	CB	BAKER		DFHEMTP	61	11:23:34	592.514	.1550	.1244	592.359	.0026	.0000	.0000
CEMT S208	TO	BRENNER			DFHEMTP	66	11:20:31	308.883	.0021	.0012	308.881	.0000	.0000	.0000
CWXN	U	CB	BAKER		DFHWPBXN	333	11:25:52	282.577	.0068	.0034	282.570	.0048	.0000	.0000
CEMT TC32	TO	GBURGES			DFHEMTP	597	11:32:06	187.648	.0999	.0741	187.548	.0003	.0000	.0000
STAT P012	TO	CB	BAKER		DFH0STAT	263	11:33:38	158.917	.2575	.2219	158.659	.0016	.0000	.0000
CEMT P015	TO	CB	BAKER		DFHEMTP	64	11:16:46	144.153	.0131	.0078	144.140	.0001	.0000	.0000
CEMT P056	TO	CB	BAKER		DFHEMTP	67	11:20:33	141.000	.0045	.0032	140.996	.0000	.0000	.0000
CEMT P056	TO	CB	BAKER		DFHEMTP	67	11:22:57	102.494	.0034	.0027	102.490	.0000	.0000	.0000
CEMT P056	TO	CB	BAKER		DFHEMTP	67	11:18:12	95.0977	.0042	.0035	95.0935	.0000	.0000	.0000
CEMT P056	TO	CB	BAKER		DFHEMTP	52	11:14:53	81.3172	.0043	.0031	81.3129	.0000	.0000	.0000
STAT R11	TO	CB	BAKER		DFH0STAT	349	11:22:38	66.7720	.5048	.4620	66.2672	.0007	.0000	65.7887
CEMT P056	TO	CB	BAKER		DFHEMTP	67	11:24:16	66.3943	.0033	.0031	66.3909	.0000	.0000	.0000
CEMT P056	TO	CB	BAKER		DFHEMTP	270	11:33:25	62.1072	.0049	.0041	62.1022	.0000	.0000	.0000
CEMT P056	TO	CB	BAKER		DFHEMTP	235	11:29:00	61.0066	.0015	.0010	61.0051	.0001	.0000	.0000

Figure 198. Performance List Extended report (using BY, LIMIT, FIELDS)

## Example 3: Exclude CICS-supplied system transactions

Note that in the Performance List Extended report shown in Figure 198 some of the worst response times are for the CICS-supplied long running system transactions. So the following command can be used to create a more useful Performance List Extended report as shown in Figure 199 on page 423 by excluding those types of transactions.

```

CICSPA LISTX(SELECT(PERFORMANCE(
    EXCLUDE(TRAN(CSHQ,CSNC,CSNE,CSSY,CWXN))),
    BY(RESPONSE(DESCEND)),
    LIMIT(RESPONSE(20)),
    FIELDS(TRAN,           Transaction ID
            TERM,          Terminal ID
            STYPE,         Start type of transaction
            USERID,        User ID
            RSYID,         Remote System ID
            PROGRAM,       Initial program name
            TASKNO,        Transaction number
            STOP(TIMES),   Stop time (hh:mm:ss)
            RESPONSE,      Response time
            DISPATCH,      Dispatch time
            CPU,           CPU time
            SUSPEND,       Suspend time
            DISPWAIT,      Dispatch wait time
            FCWAIT,        File Control I/O wait time
            IRWAIT)))      Inter-Region (MRO) I/O wait time

```

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Tran	Term	SC	Userid	RSID	Program	TaskNo	Stop Time	Response Time	Dispatch Time	User Time	CPU Time	Suspend Time	DispWait Time	FC Wait Time	IR Wait Time
CEMT	P052	TO	CBAKER		DFHEMTP	61	11:23:34	592.514	.1550	.1244	592.359	.0026	.0000	.0000	.0000
CEMT	S208	TO	BRENNER		DFHEMTP	66	11:20:31	308.883	.0021	.0012	308.881	.0000	.0000	.0000	.0000
CEMT	TC32	TO	GBURGES		DFHEMTP	597	11:32:06	187.648	.0999	.0741	187.548	.0003	.0000	.0000	.0000
STAT	P012	TO	CBAKER		DFH0STAT	263	11:33:38	158.917	.2575	.2219	158.659	.0016	.0000	.0000	.0000
CEMT	P015	TO	CBAKER		DFHEMTP	64	11:16:46	144.153	.0131	.0078	144.140	.0001	.0000	.0000	.0000
CEMT	P056	TO	CBAKER		DFHEMTP	67	11:20:33	141.000	.0045	.0032	140.996	.0000	.0000	.0000	.0000
CEMT	P056	TO	CBAKER		DFHEMTP	67	11:22:57	102.494	.0034	.0027	102.490	.0000	.0000	.0000	.0000
CEMT	P056	TO	CBAKER		DFHEMTP	67	11:18:12	95.0977	.0042	.0035	95.0935	.0000	.0000	.0000	.0000
CEMT	P056	TO	CBAKER		DFHEMTP	52	11:14:53	81.3172	.0043	.0031	81.3129	.0000	.0000	.0000	.0000
STAT	R11	TO	CBAKER		DFH0STAT	349	11:22:38	66.7720	.5048	.4620	66.2672	.0007	.0000	.0000	65.7887
CEMT	P056	TO	CBAKER		DFHEMTP	67	11:24:16	66.3943	.0033	.0031	66.3909	.0000	.0000	.0000	.0000
CEMT	P056	TO	CBAKER		DFHEMTP	270	11:33:25	62.1072	.0049	.0041	62.1022	.0000	.0000	.0000	.0000
CEMT	P056	TO	CBAKER		DFHEMTP	235	11:29:00	61.0066	.0015	.0010	61.0051	.0001	.0000	.0000	.0000
STAT	P012	TO	CBAKER		DFH0STAT	248	11:30:42	52.1363	.0021	.0016	52.1341	.0000	.0000	.0000	.0000
CEDA	S23C	TO	BRENNER		DFHEDAP	137	11:17:27	51.4018	1.1760	.2138	50.2257	.0281	.3115	.0000	.0000
CBAM	S23C	TO	BRENNER		DFHECBAM	43	11:12:50	51.3803	.0607	.0229	51.3196	.0003	.0000	.0000	.0000
CEMT	S23D	TO	BRENNER		DFHEMTP	140	11:21:24	51.3442	.0013	.0010	51.3429	.0000	.0000	.0000	.0000
CEMT	P056	TO	CBAKER		DFHEMTP	52	11:12:58	50.6951	.0029	.0027	50.6922	.0000	.0000	.0000	.0000
RMST	S23D	TO	BRENNER	CJB3		178	11:22:38	48.9210	.0136	.0012	48.9074	.0000	.0000	.0000	.0024

Figure 199. Performance List Extended report (filtering using SELECT)

## Example 4: Worst internal response time

But now the report is heavily influenced by some of the conversational transactions such as CBAM, CEDA, and CEMT. However, CICS PA provides a solution to this by using a special field name called IRESP (internal response time) which can be used to more easily interpret the actual response time by subtracting the terminal I/O wait time. So the following command will provide a Performance List Extended report sorted in descending order by Internal Response Time as shown in Figure 200 on page 424.

```

CICSPA LISTX(SELECT(PERFORMANCE(
    EXCLUDE(TRAN(CSHQ,CSNC,CSNE,CSSY,CWXN))),
    BY(IRESP(DESCEND)),
    LIMIT(IRESP(20)),
    FIELDS(
        TRAN,           Transaction ID
        TERM,           Terminal ID
        STYPE,          Start type of transaction
        USERID,         User ID
        RSYID,          Remote System ID
        PROGRAM,        Initial program name
        TASKNO,         Transaction number
        STOP(TIMES),    Stop time (hh:mm:ss)
        RESPONSE,       Response time
        IRESP,          Transaction internal response time
        DISPATCH,       Dispatch time
        CPU,            CPU time
        SUSPEND,        Suspend time
        DISPWAIT,       Dispatch wait time
        TCWAIT,         Terminal Control I/O wait time
        IRWAIT))

```

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Tran	Term	SC	Userid	RSID	Program	TaskNo	Stop Time	Response Time	Int Resp Time	Dispatch Time	User CPU Time	Suspend Time	DispWait Time	TC Wait Time	IR Wait Time
STAT	R11	TO	CBAKER		DFH0STAT	349	11:22:38	66.7720	66.7720	.5048	.4620	66.2672	.0007	.0000	65.7887
CEDA	P0AJ	TO	CBAKER		DFHEDAP	627	11:31:48	43.9778	43.9778	.6774	.1411	43.3004	.0179	.0000	.0000
CEMT	P0AH	TO	CBAKER		DFHENTP	603	11:30:16	38.5110	38.5110	.0981	.0190	38.4129	.0113	.0000	.0000
STAT	R11	TO	CBAKER		DFH0STAT	132	11:16:47	33.4829	33.4829	1.4544	1.3336	32.0285	.0050	.0000	30.3768
STAT	P0AF	TO	CBAKER		DFH0STAT	330	11:21:32	22.9057	22.9057	.0508	.0106	22.8549	.0007	.0000	.0000
CPLT		U	CBAKER		DFHSIPLT	7	11:11:13	20.6297	20.6297	.3608	.0374	20.2689	.0198	.0000	.0000
CEMT	P0AC	TO	CBAKER		DFHENTP	217	11:25:38	17.4997	17.4997	.0688	.0111	17.4309	.0018	.0000	.0000
CPLT		U	CBAKER		DFHSIPLT	7	11:11:07	15.9915	15.9915	.3383	.0369	15.6532	.0155	.0000	.0000
CEMT	P0AG	TO	CBAKER		DFHENTP	354	11:21:55	13.3797	13.3797	.1218	.0104	13.2580	.0048	.0000	.0000
STAT	P0AE	TO	CBAKER		DFH0STAT	292	11:20:12	10.5089	10.5089	.5722	.4729	9.9367	.0031	.0000	.0000
CEDA	P0AJ	TO	CBAKER		DFHEDAP	686	11:32:03	10.1006	10.1006	.5349	.0849	9.5657	.0073	.0000	.0000
CALL	P056	TO	CBAKER		CALLJT1	262	11:30:56	8.2455	8.2452	.0155	.0034	8.2300	.0015	.0003	.0000
CEMT	P0AB	TO	CBAKER		DFHENTP	207	11:18:42	4.8000	4.8000	.0885	.0094	4.7115	.0024	.0000	.0000
TRUE	P012	TO	CBAKER		CALLCB1	261	11:30:52	4.5463	4.5463	.0017	.0014	4.5445	.0012	.0000	.0000
CLQ2		U	CBAKER		DFHLUP	28	11:11:13	3.8259	3.8259	.0818	.0068	3.7441	.0035	.0000	3.7344
CSFU		S	CBAKER		DFHFCU	28	11:11:18	3.7417	3.7417	2.8745	.2291	.8672	.0170	.0000	.0000
CEMT	P0AG	TO	CBAKER		DFHENTP	229	11:26:08	3.2382	3.2382	.0470	.0088	3.1912	.0018	.0000	.0000
CEMT	P0AA	TO	CBAKER		DFHENTP	127	11:16:03	2.6854	2.6854	.2655	.0161	2.4200	.0016	.0000	.0000
CEMT	P0AC	TO	CBAKER		DFHENTP	236	11:19:36	2.5078	2.5078	.0712	.0093	2.4365	.0014	.0000	.0000

Figure 200. Performance List Extended report (sort by IRESP)

## Example 5: Worst response times by transaction

Figure 201 on page 425 shows another example of using the BY, LIMIT, and FIELDS operands to generate a Performance List Extended report sorted in descending order by response time within ascending order by transaction ID. The LIMIT statement will limit the performance class records processed to the first 10 records for each unique transaction ID. The resulting report is in ascending order by transaction ID, with a limit of 10 records for each unique transaction ID. These records will represent the longest response times for each transaction ID.

```

CICSPA LISTX(
    BY(TRAN(ASCEND),
        RESPONSE(DESCEND)),
    LIMIT(RESPONSE(10)),
    FIELDS(TRAN,           Transaction ID
            RESPONSE,      Response time
            TERM,           Terminal ID
            STYPE,          Start type of transaction
            USERID,         User ID
            RSYID,          Remote System ID
            PROGRAM,        Initial program name
            TASKNO,         Transaction number
            STOP(TIMES),    Stop time (hh:mm:ss)
            DISPATCH,       Dispatch time
            CPU,            CPU time
            SUSPEND,        Suspend time
            DISPWAIT,       Dispatch wait time
            FCWAIT,         File Control I/O wait time
            IRWAIT))        Inter-Region (MRO) I/O wait time

```

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Response Times by Transaction ID \*\*\* 10 worst times \*\*\*

Tran	Response	Term	SC	Userid	RSID	Program	TaskNo	Stop	Dispatch	User	CPU	Suspend	DispWait	FC	Wait	IR	Wait
Time								Time	Time			Time	Time	Time		Time	Time
AINQ	.0020	S23C	TO	BRENNER		DFHSAALL	328	11:21:09	.0019	.0012	.0001	.0000	.0000	.0000	.0000	.0000	.0000
AINQ	.0018	S23C	TO	BRENNER		DFHSAALL	580	11:27:34	.0017	.0014	.0001	.0000	.0000	.0000	.0000	.0000	.0000
AINQ	.0018	S23C	TO	BRENNER		DFHSAALL	112	11:14:46	.0017	.0016	.0001	.0000	.0000	.0000	.0000	.0000	.0000
AINQ	.0014	R11	TO	CBAKER		DFHSAALL	232	11:26:30	.0013	.0012	.0000	.0000	.0000	.0000	.0000	.0000	.0000
AINQ	.0013	S23C	TO	BRENNER		DFHSAALL	569	11:27:19	.0013	.0013	.0001	.0000	.0000	.0000	.0000	.0000	.0000
AINQ	.0012	TC26	TO	GBURGES		DFHSAALL	186	11:22:08	.0011	.0010	.0001	.0000	.0000	.0000	.0000	.0000	.0000
AMNU	.1724	S23D	TO	BRENNER		DFHSAMNU	50	11:11:53	.1720	.0091	.0004	.0004	.0000	.0000	.0000	.0000	.0000
AMNU	.0713	CAAD	TO	CBAKER		DFHSAMNU	249	11:19:41	.0519	.0085	.0194	.0042	.0000	.0000	.0000	.0000	.0000
AMNU	.0327	P015	TO	CBAKER		DFHSAMNU	138	11:16:47	.0270	.0048	.0057	.0056	.0000	.0000	.0000	.0000	.0000
AMNU	.0228	R11	TO	CBAKER		DFHSAMNU	158	11:20:54	.0227	.0012	.0000	.0000	.0000	.0000	.0000	.0000	.0000
AMNU	.0088	R11	TO	CBAKER		DFHSAMNU	203	11:24:10	.0088	.0011	.0000	.0000	.0000	.0000	.0000	.0000	.0000
AMNU	.0028	S23C	TP	BRENNER		DFHSAMNU	576	11:27:28	.0012	.0013	.0017	.0000	.0000	.0000	.0000	.0000	.0000
AMNU	.0027	TC26	TP	GBURGES		DFHSAMNU	188	11:22:17	.0026	.0012	.0001	.0000	.0000	.0000	.0000	.0000	.0000
AMNU	.0026	S23C	TP	BRENNER		DFHSAMNU	356	11:21:54	.0025	.0013	.0001	.0000	.0000	.0000	.0000	.0000	.0000
AMNU	.0023	TC26	TP	GBURGES		DFHSAMNU	108	11:19:33	.0022	.0011	.0001	.0000	.0000	.0000	.0000	.0000	.0000
AMNU	.0018	S23C	TP	BRENNER		DFHSAMNU	566	11:27:14	.0017	.0012	.0001	.0000	.0000	.0000	.0000	.0000	.0000
AUPD	.0665	S208	TP	BRENNER		DFHSAALL	64	11:13:38	.0160	.0141	.0505	.0012	.0000	.0000	.0000	.0056	.0000
AUPD	.0488	S208	TO	BRENNER		DFHSAALL	54	11:12:27	.0335	.0046	.0154	.0153	.0000	.0000	.0000	.0000	.0000
AUPD	.0321	S208	TO	BRENNER		DFHSAALL	57	11:12:34	.0301	.0050	.0019	.0002	.0000	.0000	.0000	.0016	.0000
AUPD	.0046	S23C	TO	BRENNER		DFHSAALL	362	11:22:19	.0046	.0014	.0001	.0000	.0000	.0000	.0000	.0000	.0000
AUPD	.0045	TC26	TO	GBURGES		DFHSAALL	141	11:20:25	.0024	.0015	.0021	.0000	.0000	.0000	.0000	.0020	.0000
AUPD	.0041	TC26	TO	GBURGES		DFHSAALL	181	11:21:42	.0025	.0016	.0016	.0000	.0000	.0000	.0000	.0015	.0000
AUPD	.0030	R11	TO	CBAKER		DFHSAALL	205	11:24:20	.0018	.0017	.0012	.0000	.0000	.0000	.0000	.0012	.0000
AUPD	.0024	TC26	TP	GBURGES		DFHSAALL	182	11:21:45	.0023	.0013	.0001	.0000	.0000	.0000	.0000	.0000	.0000
AUPD	.0022	TC32	TP	GBURGES		DFHSAALL	378	11:24:21	.0022	.0012	.0001	.0000	.0000	.0000	.0000	.0000	.0000
AUPD	.0020	S23C	TO	BRENNER		DFHSAALL	358	11:22:10	.0019	.0015	.0001	.0000	.0000	.0000	.0000	.0000	.0000
B	.0031	TC26	TO	GBURGES		#####	134	11:19:59	.0031	.0015	.0001	.0000	.0000	.0000	.0000	.0000	.0000
B	.0024	TC26	TO	GBURGES		#####	135	11:19:59	.0024	.0014	.0001	.0001	.0000	.0000	.0000	.0000	.0000

Figure 201. Performance List Extended report (Top 10 Response Times by Transaction)

## Example 6:

An example of a Cross-System Work Extended report is shown in Figure 202 on page 426.

The commands to request this report are shown in the following example:

```

CICSPA IN(SMFIN001),
LISTX(OUTPUT(CROS0001),
EXTERNAL(CPAXW001),
NOPRINTMULTIPLE,PRINTSINGLE,
BY(UOWID),
FIELDS(TRAN, Transaction ID
RESPONSE, Response time
USERID, User ID
TASKNO, Transaction number
STOP(TIMET), Stop time (hh:mm:ss.thm)
DISPATCH(TIME), Dispatch time
DISPATCH(COUNT), Dispatch count
CPU(TIME), CPU time
SUSPEND(TIME), Suspend time
SUSPEND(COUNT), Suspend count
DISPWAIT(TIME), Dispatch wait time
DISPWAIT(COUNT), Dispatch wait count
IRWAIT(TIME))) Inter-Region (MRO) I/O wait time

```

To use the CICS PA dialog to request this report, specify a LIST or LISTX Report Form for the Cross-System Work report.

Tran	Response	Userid	TaskNo	Stop	Dispatch	Dispatch	User	CPU	Suspend	Suspend	DispWait	DispWait	IR	Wait
Time			Time	Time	Time	Count	Time	Time	Time	Count	Time	Count	Time	Time
CPLT	.3939	CICSUSER	6	15:41:19.419	.0782	3	.0325	.3158	3	.3149	2	.0000		
CSSY	71.4053	CICSUSER	11	15:42:30.828	46.9670	401	17.6543	24.4382	401	9.9254	400	.0000		
CSSY	4.9137	CICSUSER	12	15:41:24.346	.4928	66	.0476	4.4209	66	2.5618	65	.0000		
CSSY	5.3932	CICSUSER	10	15:41:24.822	.8932	59	.2172	4.4999	59	2.7531	58	.0000		
CSSY	5.6419	CICSUSER	9	15:41:25.069	1.6045	75	.1472	4.0374	75	2.9273	74	.0000		
CSSY	5.9801	CICSUSER	13	15:41:25.434	.7826	87	.1627	5.1975	87	3.3042	86	.0000		
CSSY	2.9653	CICSUSER	14	15:41:22.420	1.2597	14	.0555	1.7056	14	.0393	13	.0000		
CSSY	.4372	CICSUSER	15	15:41:19.898	.0037	1	.0034	.4335	1	.0000	0	.0000		
CSSY	.5093	CICSUSER	16	15:41:19.977	.0065	3	.0084	.5028	3	.0103	2	.0000		
CGRP	5.4980	CICSUSER	11	15:41:24.928	.7931	69	.0613	4.7049	69	3.7141	68	.0000		
CSSY	3.3315	CICSUSER	17	15:41:22.805	.0995	37	.0269	3.2321	37	1.3057	36	.0000		
CPLT	.5196	CICSUSER	6	15:41:29.169	.1771	3	.0316	.3425	3	.3422	2	.0000		

Figure 202. Cross-System Work Extended report

## SUMMARY - Performance Summary report

The **SUMMARY** operand requests the Performance Summary report or an Extract file (see “Performance Data extract” on page 257).

The command format for the Performance Summary report is:

```
CICSPA SUMMARY(
    [OUTPUT(ddname),]
    [EXTERNAL(ddname),]
    [NOTOTALS|TOTALS(n),]
    [INTERVAL(hh:mm:ss),]
    [ALERTDEF(alertname),]
    [SEVERITY(ELIGIBLE|ALL),]
    [FIELDS(field1[(options[,SEV(CRITICAL|WARNING|INFO,COUNT|PERCENT)])),...),]
    [LINECount(nnn),]
    [TITLE1('...1st 64 characters of title...'),]
    [TITLE2('...2nd 64 characters of title...'),]
    [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...)),]
    [SELECT2(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...))])
```

The command format for the Summary Extract is:

```
CICSPA SUMMARY(
    [OUTPUT(ddname),]
    DDNAME(ddname),
    [DELIMIT('field-delimiter'),]
    [LABELS|NOLABELS,]
    [FLOAT,]
    [EXTERNAL(ddname),]
    [INTERVAL(hh:mm:ss),]
    [ALERTDEF(alertname),]
    [SEVERITY(ELIGIBLE|ALL),]
    [FIELDS(field1[(options[,SEV(CRITICAL|WARNING|INFO,COUNT|PERCENT)])),...),]
    [TITLE1('...1st 64 characters of title.of Recap...'),]
    [TITLE2('...2nd 64 characters of title.of Recap...'),]
    [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...)),]
    [SELECT2(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...))])
```

The options are:

### OUTPUT

Controls the report output DDname. See “OUTPUT” on page 390 for further information. If not specified, CICS PA assigns a DDname in the format **xxxxnnnn** where **nnnn** is the report sequence number **0001-9999** to uniquely identify the output, and **xxxx** is:



- **SUMM** for the Performance Summary report
- **EXPT** for the Recap report for the Summary Extract

#### **DDNAME**

Specifies the DDname of the extract data set where the extracted performance data is written. When this operand is specified, instead of producing the Summary report, CICS PA writes the Performance Summary data to the extract file and a Recap of the extract process is written to the OUTPUT operand report file.

The DDname can be up to 8 alphanumeric characters, with the first non-numeric. The CICS PA dialog assigns DDnames in the format **CPAOEXnn** where nn is the extract sequence number **01-99**. (See the sample JCL in Figure 188 on page 367).

#### **DELIMIT**

Specifies the field delimiter, enclosed in quotes, to be used to separate each data field in the extract data set. The default is a semicolon **DELIMIT(';')**.

#### **LABELS|NOLABELS**

**LABELS** indicates that the first record to be written to the extract data set is to be a field labels record. This is the default.

**NOLABELS** indicates that CICS PA is not to write a field labels record to the extract data set.

#### **FLOAT**

Write numeric fields in the extract in S390 FLOAT format. This only applies to the Summary Extract when the **FIELDS** operand is specified.

Specify FLOAT format if you plan to import the extract into a DB2 table. When the DB2 Load Utility is used, it will interpret all numerical fields reliably and consistently in FLOAT format.

If FLOAT is not specified, the numeric fields are written in a mixture of integer, real and exponential using character digits. This is the default and is suitable when importing the extract data into a PC spreadsheet tool.

#### **EXTERNAL**

Specifies the DDname for the work data set used by the external SORT facility. This is optional for the Summary report and Extract. If specified, CICS PA performs an external sort. If not specified, CICS PA performs an internal sort where the records are sorted in storage by CICS PA. The CICS PA dialog always generates the EXTERNAL operand with a DDname in the format **CPAXWnnn** where nnn is the sequence number **001-999**. See "EXTERNAL" on page 391 for further information.

#### **NOTOTALS|TOTALS(n)**

The totals level applies only to the Summary report.

Specify **TOTALS(1)** to **TOTALS(8)** to accumulate subtotals for up to 8 sort fields, print the subtotals when the sort field changes, and print a grand total at the end of the report. Default: **TOTALS(8)**

Specify **TOTALS(0)** for no subtotals, but print only the grand total.

Specify **NOTOTALS** for neither subtotals nor grand total.

#### **INTERVAL**

Specifies a time interval when the report summarizes transaction activity over time. The interval is in the range 1 second to 24 hours in the format *hh:mm:ss* for hours, minutes, and seconds.

This operand applies only when any of START, STOP, or OSTART is specified in the FIELDS operand. For reporting, data is accumulated for each interval in the report period and a report line or extract record is written for each interval. If INTERVAL is not specified, the default is 00:01:00 (1 minute).

A time interval of less than one hour must fit evenly into the hour. CICS PA will round it down to the nearest interval that aligns to the hour. For example, 1.35 is reduced to 00:01:30 minutes which will produce 40 interval report lines for each hour of data.

A time interval of more than one hour must fit evenly into the day. CICS PA will round it down to the nearest interval that aligns to the day. For example, 10.30.23 is reduced to 08:00:00 hours which will produce 3 interval report lines for each day of data.

Minutes take precedence for an abbreviated entry. For example:

1 becomes 00:01:00

1.1 becomes 00:01:00 (rounded down from 00:01:01)

1.1.1 becomes 01:00:00 (rounded down from 01:01:01)

#### **ALERTDEF**

The name of a Performance Alert Definition for alert reporting.

#### **SEVERITY(ELIGIBLE)**

Only include alert eligible transactions.

#### **FIELDS**

Specifies which fields are reported, the order in which they appear in the report or extract, and their summarization presentation. See "SUMMARY(FIELDS" for further information and the complete list of fields and their options by field type.

**SEV** Specifies the field alert column.

#### **CRITICAL | WARNING | INFORMATIONAL**

Alert severity level for the column.

#### **COUNT | PERCENT**

Specifies whether the alert data should be reported as the total count or as a percentage of the total transactions for the summary key.

#### **LINECount**

Controls the number of lines per page in the Summary report. See "LINECount" on page 392 for further information.

#### **TITLE1, TITLE2**

Controls the report title (left and right half of subheading line) for the Performance Summary report or the Extract Recap. See "TITLE1 and TITLE2" on page 392 for further information.

#### **SELECT | SELECT2(PERFORMANCE(INCLUDE | EXCLUDE**

Specifies what data to include or exclude from the report or extract based on data field values. See "Using SELECT statements" on page 525 for an explanation and examples.

## **SUMMARY(FIELDS**

The Performance Summary report can be tailored by specifying which fields and Application Groups are reported, the order in which they appear in the report, and

the statistical functions used to summarize the data. This is done with the **FIELDS** operand followed by the field names, and for numeric fields, the functions, and ordering sequence.

Up to 8 sort key fields can be specified, and at least one must be specified. The order of the key fields in the list defines the sort precedence, with the first key field being the major sort field. For each key field, the report can be ordered in ascending (**ASCEND**) or descending (**DESCEND**) sequence. The default is ascending. Sort key fields identify the grouping required for summarization, and can be any time stamp field, such as START and STOP time, any Application Group, or any character field, including character user fields.

The sort key fields must be specified first in the list ahead of the numeric fields. The only fields that can appear ahead of a key field are TASKCNT or TASKTCNT.

Identifying a key field as **PRIMARY** indicates that it is a Primary key field. Any key field is eligible to be a Primary key field. Primary key fields must be grouped together before other nonprimary key fields. There can be up to 8 Primary key fields but their total length must be no more than 255 characters. Primary key fields cannot be totaled. They are always printed in ascending order in the Summary Report.

Primary fields can be used to specify an enhanced Summary report that is summarized at the Platform, Application, Operation, and Version levels. The Application Platform report has two parts: a key section and a data section. The key section is based on one or more AC (Application Context) key fields and the data section of the report is based on the Summary Form.

In addition to the sort key fields, one numeric field can be selected as ascending or descending to activate **Alternate Sequencing**. This will change the order of report lines from sort key to numeric field sequence. For example, specify RESPONSE(DESCEND) to see the transactions with the highest response time at the top of the report. Note that grouping by sort key remains unaffected by alternate sequencing.

The format of the command is:

- For Application Groups (see “Application Groups” on page 432):  

```
CICSPA SUMMARY(
    FIELDS(application-group-name(APG,ASCEND|DESCEND|PRIMARY),...)
```
- For CICS-defined character fields (see “Character fields” on page 432):  

```
CICSPA SUMMARY(
    FIELDS(field1,field2,...))
```
- For CICS-defined count fields (see “Count fields” on page 433):  

```
CICSPA SUMMARY(
    FIELDS(field1(AVE|DEV|MAX|MIN|TOT|SEV|nn
        |RNGCOUNT(range)|RNGPERCENT(range)
        |SEV(CRITICAL|WARNING|INFO,COUNT|PERCENT)),
        ASCEND|DESCEND,K|M|KB|MB,...),...))
```
- For CICS-defined clock fields (see “Clock (Time-Count) fields” on page 433):  

```
CICSPA SUMMARY(
    FIELDS(field1(TIME|COUNT(AVE|DEV|MAX|MIN|TOT|SEV|nn
        |RNGCOUNT(range)|RNGPERCENT(range)
        |SEV(CRITICAL|WARNING|INFO,COUNT|PERCENT)),
        ASCEND|DESCEND,...),...))
```
- For character type user fields (see “User fields” on page 435):

```
CICSPA SUMMARY(
    FIELDS(Character(Owner(owner)[,SUBSTR(offset,length)]),...))
```

- For count and clock type user fields (see “User fields” on page 435):

```
CICSPA SUMMARY(
    FIELDS(COUNT|CLOCKTIME|CLOCKCOUNT(
        OWNER(owner),NUMBER(nnn),AVE|DEV|MAX|MIN|TOT|nn,
        ASCEND|DESCEND),...))
```

**TASKCNT** and **TASKTCNT** are special fields that are computed by CICS PA.

- **TASKCNT** reports the number of performance records that are included in each summary line. TASKCNT can be reported anywhere on the print line by including it in the FIELDS specification.
- **TASKTCNT** gives the total number of CMF task termination records processed.

Specify whether to use TASKCNT or TASKTCNT for the summary statistical calculations. If both are specified, the first one is used in the calculations.

If character type fields are specified in the FIELDS list, they must be specified first (except for TASKCNT or TASKTCNT which can be ahead or amongst them).

All numeric fields (except TASKCNT and TASKTCNT) are summarized using any number of the following statistical functions:

**AVE** Average (this is the default if a field is specified without a function).

**DEV** Standard deviation.

**MAX** Maximum value.

**MIN** Minimum value.

**TOT** Totals.

**SEV** Severity level totals.

**nn** nn% peak percentile, for example, 95%. To calculate peak percentiles, CICS PA accumulates the summarized data and then provides a statistical estimate that assumes the data is normally distributed. If the data is not normally distributed, then the peak percentiles will not be accurate: consider using the Range (RNGCOUNT or RNGPERCENT) function to show the exact number or percentage of records that fall within a specified range of values. The Range function provides exact figures that do not assume that the data is normally distributed.

#### **RNGCOUNT(range) or RNGPERCENT(range)**

Range. These functions calculate the number of tasks where the value of a field falls within a specified range or matches a single value. RNGCOUNT displays the result as a count; RNGPERCENT displays the result as a percentage of tasks.

The range can be one of:

- *lower limit - upper limit*

For example, RNGCOUNT(0.1-0.2)

To fall within the range, a field value must be greater than or equal to the lower limit, and less than the upper limit:

*lower limit <= field value < upper limit*

- *operator value*

That is, one of the following comparison operators followed by a value:

= > >= < <=

For example, RNGPERCENT(<50)

For time fields, values with a decimal place (such as 1.0) are interpreted as seconds; integers (such as 1000) are interpreted as milliseconds.

You cannot use RNGCOUNT or RNGPERCENT to report from an HDB.

**Tip:** RNGCOUNT and RNGPERCENT generate identical column headings. To distinguish between columns for percentages and counts, check the column values under the headings: percentages appear with a decimal point, whereas counts are integers, and hence have no decimal point.

Here are some example uses of RNGCOUNT and RNGPERCENT:

**RESPONSE(RNGCOUNT(<0.9))**

Count of tasks with response time less than 0.9 seconds.

**RESPONSE(RNGPERCENT(0.5-1.0))**

Percentage of tasks with response time  $\geq 0.5$  and  $< 1$  seconds.

**FCAMCT(RNGCOUNT( $\geq 10$ ))**

Count of tasks with 10 or more file access-method requests.

**CPU(TIME(RNGCOUNT( $> 0.5$ )))**

Count of tasks with CPU time greater than 0.5 CPU seconds.

**SUSPEND(TIME(RNGCOUNT( $> 800$ )))**

Count of tasks with suspend time greater than 800 milliseconds (0.8 seconds).

**SUSPEND(COUNT(RNGPERCENT( $> 5$ )))**

Percentage of tasks suspended more than 5 times.

**EJBTOTAL(RNGCOUNT( $= 0$ ))**

Count of tasks with no EJB activity.

**EJBTOTAL(RNGCOUNT( $> 0$ ))**

Count of tasks with EJB activity.

For performance alert reporting, specify

**SEV(CRITICAL | WARNING | INFO, COUNT | PERCENT).**

Optionally, count values can be converted for reporting by specifying one of the following units:

**K** Divide value by 1000, typically for count fields.

**M** Divide value by 1000000, typically for count fields.

**KB** Kilobytes (divide by 1024), typically for storage fields.

**MB** Megabytes (divide by 1024x1024), typically for storage fields.

If the FIELDS operand is omitted, the Performance Summary report is produced using the following defaults:

CICSPA SUMMARY(	
FIELDS(TRAN(ASCEND),	Transaction ID
TASKCNT,	Number of CMF Records
RESPONSE(AVE,MAX),	Avg/Max Response Time
DISPATCH,	Avg Dispatch Time
CPU,	Avg CPU Time
SUSPEND(AVE,MAX),	Avg/Max Suspend Time
DISPWAIT,	Avg Dispatch Wait Time
FCWAIT,	Avg File Control I/O Wait Time
FCAMCT,	Avg FC Access Method Calls

IRWAIT,  
SC24UHWMB,  
SC31UHWMB))

Avg Inter-Region I/O Wait Time  
Avg User Storage HWM below 16MB  
Avg User Storage HWM above 16MB

**Note:**

1. CPU, DISPATCH, SUSPEND, DISPWAIT, IRWAIT, and FCWAIT are clock type fields. They are allowed to default to TIME(AVE), but equally you could specify CPU(TIME) or CPU(TIME(AVE)), DISPATCH(TIME) or DISPATCH(TIME(AVE)).
2. Two statistical functions are selected for the RESPONSE field. Specifying FIELDS(RESPONSE(AVE,MAX)) is the same as specifying FIELDS(RESPONSE,RESPONSE(MAX)) or FIELDS(RESPONSE(AVE),RESPONSE(MAX)).

### Customizing or suppressing default fields

If you specify a FIELDS operand that contains only sort key fields with or without the special TASKCNT or TASKCNT fields, then the report contains those explicitly specified fields instead of the default sort key field TRAN, followed by the remaining default fields. This enables you to customize the sort order of the default report without explicitly specifying all of the fields in the report.

To suppress the default fields, so that the report contains only the fields explicitly specified by the FIELDS operand, you must specify at least one field that is not a sort key, and that is not TASKCNT or TASKCNT.

For example, if you specify FIELDS(APPLID,TRAN,ABCODEO,PROGRAM,TASKCNT), then the report contains those explicitly specified fields, followed by the default fields, except for the default sort key field TRAN. In this example, if you append to the FIELDS operand a numeric field such as RESPONSE, then the report contains only the fields explicitly specified by the FIELDS operand.

### Application Groups

The command format is:

```
CICSPA SUMMARY(FIELDS(application-group-name(APG,ASCEND|DESCEND),...))
```

### Character fields

Up to eight character fields are allowed in the FIELDS list. The format of the command is:

- For CICS-defined fields:

```
CICSPA SUMMARY(FIELDS(field1,field2,...))
```

The CICS-defined character fields that can be selected for the Performance Summary report are listed in Chapter 30, "Fields by forms, HDB templates," on page 783. Refer to the **SUMMARY Report Form** column and the fields with data type **C** in their CMF Field ID.

- For character type user fields:

```
CICSPA SUMMARY(FIELDS(...,CHARACTER(OWNER(owner)[,SUBSTR(offset,length)]),...))
```

#### OWNER

The eight-character name of the owner of the user field. This is the entry name in the DFHMCT ID= macro specification for the user field, or the CICS-assigned default name of *USER*.

#### SUBSTR(offset,length)

This is used to report only part of the user field, up to 8 characters from

the specified offset in the field. If SUBSTR is omitted, the entire field, limited to the first eight (8) characters, is reported.

### Time Stamp fields

The format of the command is:

```
CICSPA SUMMARY(FIELDS([START(TIMES),][STOP(TIMES),][OSTART(TIMES),]...))
```

If specified, the Performance Summary report summarizes transaction activity over time, in specified intervals of time (default 1 minute).

The time stamp fields are:

**START**

Task start time

**STOP** Task stop time

**OSTART**

Originating task start time

One or more of the following formats can be selected for the time stamp fields:

**DATE** Date in the format *mm/dd/yyyy*

**DATEISO**

Date in the format *yyyy-mm-dd*

**DATM**

Date in the format *mm/dd*

**DATEYR**

Date in the format *mm/dd/yy*

**TIMET**

Time in the format *hh:mm:ss.thm*

**TIMM**

Time in the format *hh:mm*

**TIMES**

Time in the format *hh:mm:ss*. This is the default if START or STOP is specified without a format.

**DATETIM**

Date and time in the format *yyyy-mm-dd hh:mm:ss*

For more information on specifying time stamp fields, see “Suboperands for Time Stamp fields” on page 393.

### Count fields

The format of the command is:

```
CICSPA SUMMARY(  
    FIELDS(fieldname(AVE|DEV|MAX|MIN|TOT|SEV|nn,  
                     ASCEND|DESCEND,K|KB|M|MB,...),...))
```

The count fields that can be selected for the Performance Summary report are listed in Chapter 30, “Fields by forms, HDB templates,” on page 783. Refer to the **SUMMARY Report Form** column and the fields with data type **A** in their CMF Field ID.

### Clock (Time-Count) fields

The format of the command is:

```
CICSPA SUMMARY(  
    FIELDS(field1(TIME|COUNT(AVE|DEV|MAX|MIN|TOT|SEV|nn,  
                             ASCEND|DESCEND,...)),...))
```



For clock type fields, you can report the first part of the field (elapsed TIME) or the second part (COUNT of the number of times the condition occurred).

The default is to present the average elapsed time (**TIME(AVE)**). If only COUNT is specified, the average (**AVE**) is the default. If another function (other than the average) is required for either TIME or COUNT parts, both parameters must be specified. For example:

```
CICSPA SUMMARY(FIELDS(...,
    SUSPEND,                average elapsed suspend time
    SUSPEND(COUNT),         average number of times the transaction was suspended
    SUSPEND(TIME(DEV))))    standard deviation of the elapsed suspend time
```

For more information on using clock fields, see “Suboperands for Clock type fields” on page 393.

The clock fields that can be selected for the Performance Summary report are listed in Chapter 30, “Fields by forms, HDB templates,” on page 783. Refer to the **SUMMARY Report Form** column and the fields with data type S in their CMF Field ID.

## Special fields

The command format is:

```
CICSPA SUMMARY[(FIELDS(fieldname))]
```

The special fields that can be selected for the Performance Summary report are:

### CPUSU

CPU time expressed in transaction service units. The task USRCPUT (DFHTASK S008) is converted to service units using a conversion factor specified for either the image on which the transaction ran or the input files. It is calculated as:

$\text{USRCPUT} * \text{service unit conversion factor}$

### CPUIPCT

Task processor time as a percentage of the Summary report time interval:

$\text{USRCPUT} / \text{Summary Report Time Interval} * 100$

### OFFLIPCT

Total task processor time that was eligible for offload to specialty processor as a percentage of the Summary report time interval:

$\text{OFFLCPUT} / \text{Summary Report Time Interval} * 100$

### OFFLPCT

Total task processor time that was eligible for offload to specialty processor as a percentage of the total task processor time:

$\text{OFFLCPUT} / \text{USRCPUT} * 100$

### OFLDIPCT

Task processor time that was offload eligible as a percentage of the Summary report time interval:

$(\text{OFFLCPUT} + (\text{USRCPUT} - \text{CPUTONCP})) / \text{Summary Report Time Interval} * 100$

### OFLDPCT

Task processor time that was offload eligible as a percentage of the total task processor time:

$((\text{OFFLCPUT} + (\text{USRCPUT} - \text{CPUTONCP})) / \text{USRCPUT}) * 100$

### SPEIPCT

Task processor time that was offloaded to specialty processor as a percentage of the Summary report time interval:

$(\text{USRCPUT} - \text{CPUTONCP}) / \text{Summary Report Time Interval} * 100$



**SPEPCT**

Task processor time that was offloaded to specialty processor as a percentage of the total task processor time:

$$((USRCPUT - CPUTONCP) / USRCPUT) * 100$$

**STCPIPCT**

Task processor time on standard CP that was not offload eligible as a percentage of the Summary report time interval:

$$(CPUTONCP - OFFLCPUT) / \text{Summary Report Time Interval} * 100$$

**STCPPCT**

Task processor time on standard CP that was not offload eligible as a percentage of the total task processor time:

$$((CPUTONCP - OFFLCPUT) / USRCPUT) * 100$$

**Special (Time) Fields**

The command format is:

```
CICSPA SUMMARY(
    FIELDS(fieldname(AVE|DEV|MAX|MIN|TOT|SEV|nn,ASCEND|DESCEND,...),...))
```

Special time fields are derived from several CMF time fields. Those that can be selected for the Performance Summary report are:

**IRESP** Transaction internal response time

**JVMMTIME**

JVM Method time:

$$JVMTIME - (JVMITIME + JVMRTIME)$$

**RESPONSE**

Transaction response time

**RMIOTIME**

Resource Manager Interface (RMI) Other time:

$$RMISUSP - (IMSWAIT + DB2RDYQW + DB2CONWT + DB2WAIT)$$

Before CICS Version 620, RMIOTIME was RMIOOTHER. In CICS Version 620 and later, RMIOOTHER is a CICS CMF Field in the DFHRMI class.

**TOTCPU**

Total task CPU time:

$$CPU + RLSCPU$$

**User fields**

User fields can be one of the following types:

**CHARACTER**

Character string

**COUNT**

Binary or packed counter

**CLOCKTIME and CLOCKCOUNT**

The two parts of clock type fields are:

**CLOCKTIME**

The elapsed time part

**CLOCKCOUNT**

The count of the number of times the condition occurred

All types of user fields can be specified in the Performance Summary report. The format of the command is:

- For character type user fields:

```
CICSPA SUMMARY(
    FIELDS(Character(Owner(owner))[SUBSTR(offset,length)]),...))
```

- For count and clock type user fields:

```
CICSPA SUMMARY(
    FIELDS(COUNT|CLOCKTIME|CLOCKCOUNT(
        Owner(owner),NUMBER(nnn),AVE|DEV|MAX|MIN|TOT|nn,
        ASCEND|DESCEND|PRIMARY,k|KB|M|MB),...))
```

The options are:

#### **OWNER(owner)**

Must be specified for all user field types. It is the 1-8 character owner of the user field, identified by the entry name in the ID= parameter of the TYPE=EMP entry in the MCT, or the CICS-assigned default name of *USER*.

#### **SUBSTR(offset,length)**

Optional. Applies to CHARACTER fields only. SUBSTR specifies that only part of the user field is to be reported. *Offset* is the starting position (from 1) in the character field, and *length* is the number of characters from that position to include. If SUBSTR is not specified, the default is the entire field up to a limit of 8 characters for this report.

#### **NUMBER(nnn)**

Must be specified for all numeric types (COUNT, CLOCKTIME, CLOCKCOUNT). It specifies the three-digit number that identifies a specific count or clock type field. For each owner, up to 256 count type and up to 256 clock type user fields can be defined to CICS, whereas only one character field can be defined for each owner.

#### **AVE|DEV|MAX|MIN|TOT|nn|RNGCOUNT(range)|RNGPERCENT(range)**

All count and clock type fields are summarized and can be presented using the same statistical functions available to CICS-defined fields.

However, unlike CICS-defined fields, you can specify only one function per user field. If more than one function is to be used, the entire specification must be repeated. For example, the following command generates a Performance Summary report summarized by transaction and terminal, and displaying the maximum, minimum, and average elapsed times.

```
CICSPA SUMMARY(
    FIELDS(TRAN,TERM,TASKCNT,
        CLOCKTIME(Owner(USER),NUMBER(001),MAX),
        CLOCKTIME(Owner(USER),NUMBER(001),MIN),
        CLOCKTIME(Owner(USER),NUMBER(001))))
```

For more information on specifying user fields, see “Suboperands for User fields” on page 394.

### **DBCTL fields**

The command format is:

```
CICSPA SUMMARY(FIELDS(DBCTL(field1(func,order),field2(func,order),...)))
```

where *func* is one of the functions AVE, DEV, MAX, MIN, TOT, nn, and *order* is ASCEND or DESCEND. The default is **(AVE,ASCEND)**.

If your MCT collects DBCTL User Data (using the DFH\$MCTD macro in SDFHSAMP), then the FIELDS operand can specify DBCTL fields. These are listed

in Chapter 30, “Fields by forms, HDB templates,” on page 783. Refer to the **SUMMARY Report Form** column and the fields with owner **DBCTL** in the CMF Field ID.

**Note:** The IMS Performance Analyzer (IMS PA) can provide a comprehensive analysis of IMS DBCTL performance.

## SUMMARY examples

A set of sample Report Forms is provided with CICS PA. See Table 6 on page 295 for the sample SUMMARY Report Forms. You can use these sample Report Forms with your Performance Summary reports and extracts. They provide a detailed picture of the many aspects affecting CICS system performance.

### Example 1: Default report

```
CICSPA SUMMARY
```

### Example 2: External sort

This example produces the default Performance Summary report using an external sort. CPAXW001 is the DDname of the External Work File.

```
CICSPA SUMMARY(EXTERNAL(CPAXW001))
```

### Example 3: Summarize by user ID and terminal ID

This example shows how to request a Performance Summary report summarized by USERID and TERM. The IRESP field will default to AVE. The RESPONSE field is displayed in three formats: AVE, MAX, and MIN. The CPU field will default to TIME with AVE. The MAX value of user clock number 1 will also be displayed.

```
CICSPA SUMMARY(  
    FIELDS(USERID,  
            TERM,  
            IRESP,  
            RESPONSE(AVE,MAX,MIN),  
            CPU,  
            SUSPEND(COUNT(AVE,MAX)),  
            CLOCKTIME(OWNER(USER),NUMBER(1),MAX)))
```

### Example 4: Summarize by user ID

This example uses the FIELDS operand to generate a report summarized by USERID like that shown in Figure 203 on page 438.

```
CICSPA SUMMARY(  
    FIELDS(USERID,  
            TASKCNT,  
            RESPONSE(AVE,MAX),  
            DISPATCH(TIME(AVE,MAX),COUNT),  
            CPU(TIME(AVE,MAX,DEV)),  
            SUSPEND(TIME(AVE,MAX)),  
            DISPWAIT(TIME(AVE,MAX)))
```

V5R2M0		CICS Performance Analyzer Performance Summary											
SUMM0001 Printed at 12:03:45 11/12/2013		Data from 12:10:51 3/24/2004 to 12:34:13 3/24/2004										Page	1
Userid	#Tasks	Avg Response Time	Max Response Time	Avg Dispatch Time	Max Dispatch Time	Avg Dispatch Count	Avg User CPU Time	Max User CPU Time	S Dev User CPU Time	Avg Suspend Time	Max Suspend Time	Avg DispWait Time	Max DispWait Time
BRENNER	248	4.1091	308.883	.0195	1.1760	16	.0072	.3537	.0279	4.0896	308.881	.0023	.0742
CBAKER	583	15.2302	1386.70	.0825	12.6769	48	.0251	3.1676	.1846	15.1477	1385.29	.0151	1.1645
GBURGES	503	.8682	187.648	.0183	1.4042	40	.0138	1.2888	.0898	.8499	187.548	.0004	.0991

Figure 203. Performance Summary report (by USERID)

#### Example 5: Summarize by transaction ID

Figure 204 shows a Performance Summary report example that uses the FIELDS operand to generate a report summarized by transaction identifier.

```
CICSPA SUMMARY(
    FIELDS(TRAN,TASKCNT,IRESP,RESPONSE(AVE,MAX),
        DISPATCH,CPU,SUSPEND,DISPWAIT,RMISUSP,IRWAIT,
        QRCPU,QRMODDLY))
```

V5R2M0		CICS Performance Analyzer													
		Performance Summary													
SUMM0001 Printed at 12:03:45 11/12/2013		Data from 11:10:51 2/14/2005 to 11:34:13 2/14/2005										Page 1			
Tran	#Tasks	Int	Avg Resp Time	Avg Response Time	Max Response Time	Avg Dispatch Time	Avg User CPU Time	Avg Suspend Time	Avg DispWait Time	Avg RMI Time	Avg Susp Time	Avg IR Wait Time	Avg QR CPU Time	Avg QrModDly Time	Avg ChngMode
CECI	60		.0199	.5371	5.1445	.0195	.0042	.5176	.0004	.0000	.0000	.0000	.0035	.0002	0
CEDA	98		.6086	1.9304	51.4018	.0602	.0218	1.8702	.0008	.0000	.0000	.0000	.0185	.0006	2
CEMT	135		.6350	19.2961	592.514	.0155	.0062	19.2806	.0044	.0000	.0000	.0000	.0057	.0043	1
CESD	12		.1128	.1128	1.2902	.0211	.0021	.0917	.0916	.0000	.0000	.0000	.0018	.0913	0
CESF	6		.0180	.0180	.0468	.0175	.0042	.0004	.0004	.0000	.0000	.0000	.0024	.0003	3
CESN	21		.0334	.0334	.2046	.0324	.0090	.0010	.0009	.0000	.0000	.0000	.0021	.0006	2

Figure 204. Performance Summary report (by TRAN)

#### Example 6: Summarize by transaction ID, terminal ID and user ID

Figure 205 on page 439 shows a Performance Summary report example using the FIELDS operand with three sort fields. To create a similar report, use the following command:

```
CICSPA SUMMARY(
    FIELDS(TRAN,TERM,USERID,
        TASKCNT,
        RESPONSE(AVE,MAX),
        DISPATCH(TIME(AVE,MAX),COUNT),
        CPU(TIME(AVE,MAX)),
        SUSPEND(TIME(AVE,MAX)),
        DISPWAIT))
```

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				Page 1									
Tran	Term	Userid	#Tasks	Avg Response Time	Max Response Time	Avg Dispatch Time	Max Dispatch Time	Avg Dispatch Count	Avg User CPU Time	Max User CPU Time	Avg Suspend Time	Max Suspend Time	Avg DispWait Time
AADD	S23C	BRENNER	5	.0330	.0945	.0303	.0831	3	.0035	.0084	.0028	.0114	.0027
AADD	S23C		5	.0330	.0945	.0303	.0831	3	.0035	.0084	.0028	.0114	.0027
AADD	TC26	GBURGES	5	.0020	.0023	.0019	.0022	1	.0012	.0013	.0001	.0001	.0000
AADD	TC26		5	.0020	.0023	.0019	.0022	1	.0012	.0013	.0001	.0001	.0000
AADD			10	.0175	.0945	.0161	.0831	2	.0024	.0084	.0014	.0114	.0013
ABRW	P015	CBAKER	10	.0717	.6982	.0690	.6717	3	.0051	.0385	.0027	.0264	.0011
ABRW	P015		10	.0717	.6982	.0690	.6717	3	.0051	.0385	.0027	.0264	.0011
ABRW	R11	CBAKER	1	.0052	.0052	.0021	.0021	7	.0021	.0021	.0031	.0031	.0000
ABRW	R11		1	.0052	.0052	.0021	.0021	7	.0021	.0021	.0031	.0031	.0000
ABRW	S23D	BRENNER	5	.1210	.5819	.0178	.0783	7	.0042	.0121	.1032	.5037	.0026
ABRW	S23D		5	.1210	.5819	.0178	.0783	7	.0042	.0121	.1032	.5037	.0026
ABRW	TC26	GBURGES	57	.0070	.0156	.0033	.0059	7	.0022	.0028	.0037	.0128	.0000
ABRW	TC26		57	.0070	.0156	.0033	.0059	7	.0022	.0028	.0037	.0128	.0000
ABRW	TC32	GBURGES	61	.0030	.0120	.0029	.0120	1	.0016	.0019	.0001	.0002	.0000
ABRW	TC32		61	.0030	.0120	.0029	.0120	1	.0016	.0019	.0001	.0002	.0000
ABRW			134	.0142	.6982	.0085	.6717	4	.0022	.0385	.0057	.5037	.0002

Figure 205. Performance Summary report (by TRAN, TERM, USERID)

### Example 7: Summarize by transaction ID and APPLID

Figure 206 shows a Performance Summary report example using the FIELDS operand to generate a report summarized by APPLID within transaction identifier. To create a similar report, use the following command:

```
CICSPA SUMMARY(
    FIELDS(TRAN,APPLID,TASKCNT,IRESP,RESPONSE(AVE,MAX),
    DISPATCH,CPU,SUSPEND,DISPWAIT,
    RMISUSP,FCWAIT,IRWAIT,TCWAIT))
```

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				Page 1									
Tran	APPLID	#Tasks	Int	Avg Resp Time	Max Response Time	Avg Dispatch Time	User CPU Time	Avg Suspend Time	Avg DispWait Time	RMI Time	Avg FC Time	Avg IR Time	Avg TC Time
AADD	IYK2Z1V1	5		.0020	.0020	.0019	.0012	.0001	.0000	.0000	.0000	.0000	.0000
AADD	IYK2Z1V3	5		.0330	.0330	.0303	.0035	.0028	.0027	.0000	.0000	.0000	.0000
AADD		10		.0175	.0175	.0161	.0024	.0014	.0013	.0000	.0000	.0000	.0000
ABRW	IYK2Z1V1	63		.0160	.0160	.0044	.0023	.0116	.0002	.0000	.0000	.0113	.0000
ABRW	IYK2Z1V3	71		.0127	.0127	.0021	.0004	.0002	.0000	.0001	.0000	.0000	.0000
ABRW		134		.0142	.0142	.0085	.0022	.0057	.0002	.0000	.0000	.0053	.0000
AINQ	IYK2Z1V1	3		.0022	.0022	.0040	.0017	.0005	.0000	.0000	.0000	.0004	.0000
AINQ	IYK2Z1V3	7		.0019	.0019	.0024	.0018	.0014	.0002	.0000	.0000	.0000	.0000
AINQ		10		.0020	.0020	.0040	.0017	.0014	.0003	.0000	.0000	.0001	.0000
AMNU	IYK2Z1V1	5		.0418	.0418	.1724	.0417	.0027	.0001	.0001	.0000	.0000	.0000
AMNU	IYK2Z1V3	7		.0164	.0164	.0713	.0125	.0028	.0039	.0014	.0000	.0000	.0000
AMNU		12		.0270	.0270	.1724	.0246	.0028	.0023	.0008	.0000	.0000	.0000
AUPD	IYK2Z1V1	8		.0203	.0203	.0665	.0112	.0039	.0091	.0021	.0000	.0015	.0000
AUPD	IYK2Z1V3	4		.0026	.0026	.0046	.0025	.0013	.0001	.0000	.0000	.0000	.0000
AUPD		12		.0144	.0144	.0665	.0083	.0030	.0061	.0014	.0000	.0010	.0000
B	IYK2Z1V1	2		.0028	.0028	.0031	.0027	.0015	.0001	.0000	.0000	.0000	.0000
B		2		.0028	.0028	.0031	.0027	.0015	.0001	.0000	.0000	.0000	.0000
BING	IYK2Z1V1	1		.0024	.0024	.0024	.0023	.0016	.0001	.0000	.0000	.0000	.0000
BING		1		.0024	.0024	.0024	.0023	.0016	.0001	.0000	.0000	.0000	.0000
BINQ	IYK2Z1V1	1		.0027	.0027	.0027	.0027	.0015	.0001	.0000	.0000	.0000	.0000
BINQ		1		.0027	.0027	.0027	.0027	.0015	.0001	.0000	.0000	.0000	.0000
CALL	IYK2Z1V1	16	2.5156	2.5159	8.2455	.0059	.0021	2.5100	.0015	2.1244	.0000	.0000	.0003
CALL	IYK2Z1V3	9	2.0918	2.0920	2.1935	.0101	.0021	2.0819	.0009	2.0812	.0000	.0000	.0002
CALL		25	2.3630	2.3633	8.2455	.0074	.0021	2.3559	.0013	2.1088	.0000	.0000	.0003

Figure 206. Performance Summary report (by TRAN and APPLID)

### Example 8: Summarize by user ID and transaction ID

Figure 207 shows an example of using the FIELDS operand to generate a Performance Summary report summarized by USERID and TRAN. To create a similar report, use the following command:

```
CICSPA SUMMARY(
    FIELDS(USERID,TRAN,
            TASKCNT,
            RESPONSE(AVE,MAX),
            DISPATCH(TIME(AVE,MAX),COUNT),
            CPU(TIME(AVE,MAX)),
            SUSPEND(TIME(AVE,MAX)),
            DISPWAIT(TIME(AVE,MAX))))
```

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CICS Performance Analyzer  
Performance Summary

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Userid	Tran	#Tasks	Avg Response Time	Max Response Time	Avg Dispatch Time	Max Dispatch Time	Avg Dispatch Count	Avg User Time	Max User Time	Avg CPU Time	Max CPU Time	Avg Suspend Time	Max Suspend Time	Avg Dispwait Time	Max Dispwait Time
BRENNER	AADD	5	.0330	.0945	.0303	.0831	3	.0035	.0084	.0028	.0114	.0027	.0113		
BRENNER	ABRW	5	.1210	.5819	.0178	.0783	7	.0042	.0121	.1032	.5037	.0026	.0127		
BRENNER	AINQ	7	.0019	.0024	.0018	.0022	1	.0014	.0016	.0002	.0008	.0000	.0000		
BRENNER	AMNU	6	.0305	.1724	.0301	.1720	2	.0025	.0091	.0004	.0017	.0001	.0004		
BRENNER	AUPD	5	.0308	.0665	.0172	.0335	6	.0053	.0141	.0136	.0505	.0034	.0153		
BRENNER	CALL	6	2.1395	2.2128	.0024	.0031	9	.0018	.0028	2.1370	2.2103	.0006	.0010		
BRENNER	CBAM	8	14.4793	51.3803	.0198	.0607	6	.0071	.0229	14.4595	51.3196	.0022	.0167		
BRENNER	CEDA	23	5.3006	51.4018	.1142	1.1760	8	.0255	.2138	5.1864	50.2257	.0018	.0281		
BRENNER	CEMT	41	12.8879	308.883	.0038	.0104	2	.0025	.0046	12.8841	308.881	.0026	.0742		
BRENNER	CESF	4	.0250	.0468	.0245	.0462	4	.0049	.0067	.0006	.0009	.0005	.0009		
BRENNER	SAL1	8	.0601	.1835	.0040	.0083	7	.0032	.0065	.0562	.1751	.0018	.0074		
BRENNER	STAT	16	7.9208	48.7524	.0427	.3774	154	.0286	.3537	7.8781	48.7509	.0006	.0068		
BRENNER	STOC	3	.6400	.7984	.0036	.0052	4	.0027	.0030	.6364	.7931	.0015	.0039		
BRENNER	TRUE	24	1.1053	2.1009	.0010	.0022	5	.0007	.0014	1.1043	2.0987	.0004	.0016		
BRENNER	1111	1	.0021	.0021	.0020	.0020	2	.0016	.0016	.0001	.0001	.0000	.0000		
BRENNER	3333	1	.0028	.0028	.0020	.0020	2	.0017	.0017	.0008	.0008	.0000	.0000		
BRENNER		248	4.1091	308.883	.0195	1.1760	16	.0072	.3537	4.0896	308.881	.0023	.0742		
CBAKER	ABRW	11	.0657	.6982	.0629	.6717	3	.0048	.0385	.0028	.0264	.0010	.0111		
CBAKER	AINQ	1	.0014	.0014	.0013	.0013	1	.0012	.0012	.0000	.0000	.0000	.0000		
CBAKER	AMNU	4	.0339	.0713	.0276	.0519	4	.0039	.0085	.0063	.0194	.0024	.0056		
CBAKER	AUPD	3	.0019	.0030	.0015	.0018	1	.0014	.0017	.0005	.0012	.0000	.0000		
CBAKER	CALL	5	3.3511	8.2455	.0183	.0687	10	.0031	.0067	3.3328	8.2300	.0012	.0022		
CBAKER	CATA	10	.0280	.0537	.0151	.0438	4	.0062	.0122	.0129	.0281	.0002	.0003		
CBAKER	CATD	6	.0372	.0590	.0159	.0437	6	.0056	.0091	.0213	.0306	.0024	.0123		
CBAKER	CATR	2	.0290	.0296	.0283	.0287	3	.0047	.0047	.0006	.0009	.0006	.0008		
CBAKER	CBAM	3	2.4702	5.0107	.0012	.0013	2	.0010	.0011	2.4690	5.0094	.0000	.0000		
CBAKER	CECI	1	3.3215	3.3215	.5039	.5039	9	.0254	.0254	2.8175	2.8175	.0043	.0043		
CBAKER	CEDA	2	27.0392	43.9778	.6062	.6774	55	.1130	.1411	26.4331	43.3004	.0126	.0179		
CBAKER	CEMT	77	24.2383	592.514	.0229	.2655	5	.0078	.1244	24.2154	592.359	.0062	.2938		
CBAKER	CESD	12	.1128	1.2902	.0211	.2044	2	.0021	.0065	.0917	1.0858	.0916	1.0858		
CBAKER	CESN	21	.0334	.2046	.0324	.2043	3	.0090	.0406	.0010	.0060	.0009	.0059		
CBAKER	CETR	1	.8982	.8982	.1132	.1132	8	.0132	.0132	.7850	.7850	.0068	.0068		
CBAKER	CGRP	2	.5862	.7601	.0571	.0721	18	.0076	.0078	.5291	.6880	.4134	.5044		
CBAKER	CITS	5	.0111	.0153	.0058	.0096	4	.0035	.0041	.0053	.0091	.0001	.0002		

Figure 207. Performance Summary report (by USERID and TRAN)

#### Example 9: File Control activity

This example shows a Performance Summary report tailored to present File Control information.

```
CICSPA IN(SMFIN001),
    APPLID(applid1),
    SELECT(PERFORMANCE(INCLUDE(FCTOTAL(1-999999999)))),
    SUMMARY(
        OUTPUT(SUMM0001),
        FIELDS(
            TRAN,                        Summarize by Transaction ID
            TASKCNT,                     Total Task count
            RESPONSE(AVE),               Transaction response time
            DISPATCH(TIME(AVE)),         Dispatch time
            CPU(TIME(AVE)),               CPU time
            SUSPEND(TIME(AVE)),           Suspend time
            FCWAIT(TIME(AVE)),           File I/O wait time
            FCAMCT(AVE),                 File access-method requests
```

FCADD(AVE),	File ADD requests
FCBROWSE(AVE),	File Browse requests
FCDELETE(AVE),	File DELETE requests
FCGET(AVE),	File GET requests
FCPUT(AVE),	File PUT requests
FCTOTAL(AVE)))	File Control requests

#### Example 10: Program Control activity

This example shows a Performance Summary report tailored to present Program Control information.

```

CICSPA IN(SMFIN002),
        APPLID(applid2),
        SELECT(PERFORMANCE(INCLUDE(PCLOADTM(TIME(1-999999999))))),
        SUMMARY(OUTPUT(SUMM0002),
                FIELDS(
                        TRAN,                Summarize by Transaction ID
                        TASKCNT,            Total Task count
                        PCLINK(AVE),        Program LINK requests
                        PCLOAD(AVE),        Program LOAD requests
                        PCLOADTM(TIME(AVE)), Program Library wait time
                        PCSTGHWM(AVE),      Program Storage HWM above and below 16MB
                        PCXCTL(AVE),        Program XCTL requests
                        PC24BHWM(AVE),      Program Storage HWM below 16MB
                        PC24CHWM(AVE),      Program Storage (CDSA) HWM below 16MB
                        PC24RHWM(AVE),      Program Storage (RDSA) HWM below 16MB
                        PC24SHWM(AVE),      Program Storage (SDSA) HWM below 16MB
                        PC31AHWM(AVE),      Program Storage HWM above 16MB
                        PC31CHWM(AVE),      Program Storage (ECDSA) HWM above 16MB
                        PC31RHWM(AVE),      Program Storage (ERDSA) HWM above 16MB
                        PC31SHWM(AVE)))    Program Storage (ESDSA) HWM above 16MB

```

#### Example 11: Transaction activity each 30 seconds

In this example, each Transaction ID's activity is broken down into 30 second time intervals. This allows you to measure transaction performance variations over time.

```

CICSPA SUMMARY(
        INTERVAL(00:30),                Time Interval is 30 seconds
        FIELDS(                          Sort by Tran ID and Start Interval
                TRAN,                    Transaction ID
                START,                  Transaction Start Time
                TASKCNT,                Total Task count
                RESPONSE(AVE,MAX),      Transaction response time
                DISPATCH(TIME(AVE)),    Dispatch time
                CPU(TIME(AVE)),          CPU time
                SUSPEND(TIME(AVE)),     Suspend time
                DISPWAIT(TIME(AVE)),    Redispatch wait time
                FCWAIT(TIME(AVE)),      File I/O wait time
                FCAMCT(AVE),            File access-method requests
                IRWAIT(TIME(AVE)),      MRO link wait time
                SC24UHWM(AVE),          UDSA HWM below 16MB
                SC31UHWM(AVE)))         EUDSA HWM above 16MB

```

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Tran	Start Interval	#Tasks	Avg Response Time	Max Response Time	Avg Dispatch Time	Avg User CPU Time	Avg Suspend Time	Avg DispWait Time	Avg FC Wait Time	Avg FCAMRq	Avg IR Wait Time	Avg SC24UHM	Avg SC31UHM
TR01	15:04:00	89	.0584	.1233	.0012	.0011	.0572	.0015	.0025	3	.0000	0	88363
TR01	15:04:30	109	.0562	.1220	.0011	.0011	.0550	.0016	.0026	3	.0000	0	88360
TR01	15:05:00	104	.0551	.1328	.0013	.0012	.0538	.0017	.0027	3	.0000	0	88356
TR01	15:05:30	106	.0550	.1041	.0011	.0011	.0539	.0018	.0028	3	.0000	0	88355
TR01	15:06:00	86	.0588	.1354	.0012	.0011	.0576	.0016	.0026	3	.0000	0	88362
TR01	15:06:30	99	.0557	.0823	.0012	.0011	.0545	.0018	.0029	3	.0000	0	88352
TR01	15:07:00	117	.0549	.0912	.0012	.0011	.0537	.0016	.0024	3	.0000	0	88353
TR01		710	.0562	.1354	.0012	.0011	.0550	.0016	.0026	3	.0000	0	88357
TR02	15:04:00	101	.1719	.3674	.0030	.0029	.1689	.0055	.0134	18	.0000	0	88358
TR02	15:04:30	98	.1612	.3661	.0029	.0028	.1583	.0056	.0134	18	.0000	0	88353
TR02	15:05:00	105	.1548	.3683	.0029	.0029	.1519	.0045	.0116	18	.0000	0	88356
TR02	15:05:30	104	.1693	.4151	.0030	.0029	.1663	.0048	.0122	19	.0000	0	88363
TR02	15:06:00	105	.1631	.4046	.0030	.0029	.1601	.0043	.0122	18	.0000	0	88359
TR02	15:06:30	89	.1572	.3499	.0030	.0028	.1541	.0049	.0125	18	.0000	0	88357
TR02	15:07:00	88	.1541	.3164	.0031	.0028	.1511	.0050	.0123	18	.0000	0	88354
TR02		690	.1619	.4151	.0030	.0029	.1589	.0049	.0125	18	.0000	0	88357

Figure 208. Performance Summary report (by START Interval within TRAN)

## Example 12: Transaction activity per minute

In this example, transaction activity is broken down into 1 minute intervals. Every transaction that completed processing during the interval is reported. This allows you to look at periods of time during which performance might be degraded and examine each Transaction ID's usage.

```

CICSPA SUMMARY(
    INTERVAL(01:00),
    FIELDS(
        STOP,
        TRAN,
        TASKCNT,
        RESPONSE(AVE,MAX),
        DISPATCH(TIME(AVE)),
        CPU(TIME(AVE)),
        SUSPEND(TIME(AVE)),
        DISPWAIT(TIME(AVE)),
        FCWAIT(TIME(AVE)),
        FCAMCT(AVE),
        IRWAIT(TIME(AVE)),
        SC24UHM(AVE),
        SC31UHM(AVE)))

```

Time Interval is 1 minute  
Sort by Stop Interval and Tran ID  
Transaction Stop Time  
Transaction ID  
Total Task count  
Transaction response time  
Dispatch time  
CPU time  
Suspend time  
Redispatch wait time  
File I/O wait time  
File access-method requests  
MRO link wait time  
UDSA HWM below 16MB  
EUDSA HWM above 16MB



Stop Interval	Tran	#Tasks	Avg Response Time	Max Response Time	Avg Dispatch Time	Avg User CPU Time	Avg Suspend Time	Avg DispWait Time	Avg FC Wait Time	Avg FCAMRq	Avg IR Wait Time	Avg SC24UHM	Avg SC31UHM
15:04:00	TR01	198	.0572	.1233	.0012	.0011	.0560	.0016	.0026	3	.0000	0	88361
15:04:00	TR02	199	.0569	.2220	.0012	.0011	.0557	.0016	.0024	3	.0000	0	88359
15:04:00	TR03	201	.1743	.3789	.0030	.0029	.1713	.0053	.0125	18	.0000	0	88360
15:04:00	TR04	199	.1666	.3674	.0029	.0028	.1637	.0056	.0134	18	.0000	0	88356
. . .													
15:04:00	TR10	215	.0069	.0133	.0038	.0037	.0031	.0004	.0026	34	.0000	0	88352
15:04:00	TR11	130	.3033	.5730	.0033	.0032	.3000	.0090	.0193	21	.0000	0	88391
15:04:00	TR12	216	.0901	.1345	.0014	.0013	.0887	.0021	.0049	5	.0000	0	88359
15:04:00	TR13	225	.0888	.1234	.0014	.0013	.0874	.0024	.0050	5	.0000	0	88357
15:04:00		8903	.0473	.6318	.0013	.0013	.0460	.0015	.0035	7	.0000	0	69261
. . .													
15:05:00	TR01	210	.0551	.1328	.0012	.0011	.0538	.0017	.0027	3	.0000	0	88355
15:05:00	TR02	207	.1609	.4151	.0030	.0029	.1579	.0046	.0119	18	.0000	0	88359
15:05:00	TR03	211	.0062	.0125	.0026	.0025	.0036	.0005	.0031	18	.0000	0	88352
15:05:00	TR04	246	.0069	.0148	.0038	.0037	.0031	.0003	.0026	34	.0000	0	88352
. . .													
15:05:00	TR10	230	.0062	.0119	.0026	.0025	.0036	.0005	.0031	18	.0000	0	88352
15:05:00	TR11	234	.0070	.0173	.0039	.0038	.0031	.0004	.0027	34	.0000	0	88352
15:05:00	TR12	244	.0874	.1227	.0014	.0013	.0860	.0026	.0052	5	.0000	0	88354
15:05:00	TR13	283	.0887	.1924	.0014	.0013	.0873	.0024	.0051	5	.0000	0	88360
15:05:00		9275	.0476	.7551	.0014	.0013	.0462	.0014	.0035	7	.0000	0	70591

Figure 209. Performance Summary report (by TRAN within STOP Interval)

## Example 13: DBCTL activity

The following Summary report summarizes DBCTL activity by Transaction ID and PSB name.

```

CICSPA SUMMARY(
    FIELDS(
        TRAN,
        DBCTL(PBSNAME),
        TASKCNT,
        RESPONSE(AVE),
        DISPATCH(TIME(AVE)),
        CPU(TIME(AVE)),
        SUSPEND(TIME(AVE)),
        DBCTL(DLICALLS(AVE),
            POOLWAIT(AVE),
            INTCWAIT(AVE),
            SCHTELAP(AVE),
            DBIOELAP(AVE),
            PILOCKEL(AVE),
            THREDCPU(AVE)))
        Sort by Transaction ID and PSB name
        Transaction identifier
        PSB name
        Total Task count
        Average Response time
        Average Dispatch time
        Average CPU time
        Average Suspend time
        Total DL/I Database calls
        Elapsed wait time for Pool Space
        Elapsed wait time for Intent Conflict
        Elapsed time for Schedule Process
        Elapsed time for Database I/O
        Elapsed time for PI Locking
        Thread TCB CPU time
    )

```

## Example 14: DBCTL activity with filtering

This DBCTL example produces a Performance Summary report like that shown in Figure 210 on page 444.

```

CICSPA IN(SMFIN004),
    SELECT(PERFORMANCE(EXCLUDE(
        CHARACTER(OWNER(DBCTL),
        SUBSTR(1,1,VALUE(' '))))),
        Exclude transactions
        without a PSB name
    )
    SUMMARY(FIELDS(
        TRAN,
        DBCTL(PBSNAME),
        TASKCNT,
        RESPONSE,
        CPU,
        DISPATCH,
        SUSPEND,
        DBCTL(
            POOLWAIT,
            INTCWAIT,
            SCHTELAP,
            DBIOELAP,
            Sort by Transaction ID and PSB name
            Transaction identifier
            PSB name
            Total Task count
            Transaction response time
            CPU time
            Dispatch time
            Suspend time
            Elapsed wait time for Pool Space
            Elapsed wait time for Intent Conflict
            Elapsed time for Schedule Process
            Elapsed time for Database I/O
        )
    )

```

PILOCKEL, Elapsed time for PI Locking  
 DBIOCALL, Number of Database I/Os  
 DLICALLS))) Total DL/I Database calls

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 Performance Summary

SUMM0001 Printed at 12:03:45 11/12/2013 Data from 15:58:47 2/19/2005 to 15:58:28 2/21/2005 Page 1

\*\*\* All DBCTL transactions \*\*\*

Tran	PSB	#Tasks	Avg Response Time	Avg User CPU Time	Avg Dispatch Time	Avg Suspend Time	Avg PoolWait Time	Avg ICwait Time	Avg SchedElp Time	Avg DBIOElap Time	Avg PILockEl Time	Avg DBIOcall Count	Avg DLICalls Count
DLI0	DDLPSB51	16	9.3221	.0255	.5016	8.8205	.0000	.0000	.0104	.0000	.0000	0	0
DLI0	PSB99	13	1.4249	.5201	.7799	.6450	.0000	.0000	.0780	.0000	.0000	0	1
DLI0		29	5.7820	.2472	.6264	5.1556	.0000	.0000	.0407	.0000	.0000	0	1
DLI1	DDLPSB51	4	26.4267	.0125	.8290	25.5977	.0000	.0000	.0041	.0000	.0000	0	0
DLI1	PSB99	1	95.2870	1.9511	16.4508	78.8363	.0000	.0000	.0050	.0000	.0000	0	1
DLI1		5	40.1988	.4003	3.9534	36.2454	.0000	.0000	.0043	.0000	.0000	0	0
DLI2	DDLPSB51	4	19.3463	.0125	.2029	19.1433	.0000	.0000	.0040	.0000	.0000	0	0
DLI2	PSB99	1	91.8213	1.8717	2.0128	89.8085	.0000	.0000	.0010	.0000	.0000	0	1
DLI2		5	33.8413	.3843	.5649	33.2764	.0000	.0000	.0034	.0000	.0000	0	0
DLI3	DDLPSB51	4	21.6261	.0124	.9275	20.6986	.0000	.0000	.0047	.0000	.0000	0	0
DLI3	PSB99	1	156.501	1.9866	24.4980	132.003	.0000	.0000	.0055	.0000	.0000	0	1
DLI3		5	48.6011	.4073	5.6416	42.9595	.0000	.0000	.0049	.0000	.0000	0	0

Figure 210. Performance Summary report (DBCTL activity)

**Note:** The IMS Performance Analyzer (IMS PA) can provide a more comprehensive analysis of IMS DBCTL performance.

#### Example 15: Summarize by transaction ID

This example produces a Performance Summary report like that shown in Figure 211, summarized by transaction identifier.

**Note:** This example only applies to the CMF performance class data from CICS Transaction Server Version 1.3 or later.

CICSPA SUMMARY(FIELDS(TRAN,TASKCNT,RESPONSE(AVE,MAX),  
 DISPATCH,CPU,SUSPEND,DISPWAIT,  
 QRDISP,QRCP,QRMODDLY,MSDISPT,  
 MSCPU))

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 Performance Summary

SUMM0001 Printed at 12:03:45 11/12/2013 Data from 11:10:52 2/04/2004 to 08:10:28 2/16/2004 Page 1

Tran	#Tasks	Avg Response Time	Max Response Time	Avg Dispatch Time	Avg User CPU Time	Avg Suspend Time	Avg DispWait Time	Avg QR Disp Time	Avg QR CPU Time	Avg QRModDly Time	Avg ChngMode Time	Avg MS Disp Time	Avg MS CPU Time
AADD	13	.0152	.0945	.0129	.0023	.0023	.0011	.0021	.0015	.0010	1	.0108	.0008
ABRW	970	.0830	36.6088	.0026	.0015	.0804	.0000	.0020	.0015	.0000	0	.0005	.0000
ADD0	1	.0482	.0482	.0350	.0049	.0132	.0125	.0024	.0017	.0124	2	.0326	.0032
AINQ	8	.0021	.0033	.0017	.0014	.0004	.0000	.0017	.0014	.0000	0	.0000	.0000
AMNU	10	.0158	.0713	.0125	.0027	.0032	.0015	.0037	.0018	.0014	1	.0088	.0010
AUPD	9	.0165	.0623	.0124	.0025	.0041	.0001	.0024	.0017	.0000	0	.0100	.0008
CALL	9	2.0920	2.1935	.0101	.0021	2.0819	.0009	.0026	.0015	.0002	6	.0073	.0004
CATA	11	.0282	.0882	.0110	.0054	.0171	.0002	.0080	.0048	.0002	0	.0030	.0006
CATD	2	.0344	.0570	.0184	.0065	.0160	.0062	.0043	.0042	.0062	1	.0141	.0023
CATR	1	.0296	.0296	.0287	.0047	.0009	.0008	.0017	.0014	.0008	2	.0270	.0033
CBAM	5	22.4438	51.3803	.0211	.0100	22.4227	.0002	.0095	.0058	.0001	1	.0116	.0042
CBTR	1	.0024	.0024	.0023	.0014	.0001	.0000	.0023	.0014	.0000	0	.0000	.0000
CEBR	1	575.916	575.916	.0061	.0046	575.910	.0003	.0059	.0044	.0001	2	.0002	.0002

Figure 211. Performance Summary report (by TRAN)

#### Example 16: Application naming

The example in Figure 212 on page 445 is a Performance Summary report produced from CMF performance class data with application naming enabled. This report can be produced from the following command:

```

CICSPA IN(SMFIN001),
SUMMARY(EXTERNAL(CPAXW001),
        FIELDS(TRAN,      Transaction identifier
                APPLTRAN,  Application naming Transaction ID
                APPLPROG,  Application naming Program name
                TASKCNT,   Total Task count
                RESPONSE,  Transaction response time
                DISPATCH,  Dispatch time
                CPU,        CPU time
                SUSPEND,   Suspend time
                DISPWAIT)) Redispatch wait time

```

```

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                                      Performance Summary

SUMM0001 Printed at 12:03:45 11/12/2013   Data from 07:30:47 5/29/2004 to 08:35:48 5/29/2004   Page 4

```

Tran	Tran	Program	#Tasks	Avg Response Time	Avg Dispatch Time	Avg User CPU Time	Avg Suspend Time	Avg DispWait Time
MENU	TOP1	PROGOPT1	5	.0152	.0934	.0196	684.379	.0064
	TOP2	PROGOPT2	48	.0183	.7688	.2039	1.1260	.1046
	TOP3	PROGOPT3	1	.0482	.0002	.0002	.0029	.0000
	TOP4	PROGOPT4	49	.0021	.7531	.1997	1.1030	.1025
	TOP5	PROGOPT5	4	.0165	.0695	.0088	.0191	.0191

Figure 212. Example of a Performance Summary report (Application Naming)

#### Example 17:

This example produces a Performance Summary extract data set with a Recap report like that in Figure 213. See “Performance Data extract” on page 257 for more information on the Performance Data Extract facility.

```

CICSPA SUMMARY(
  OUTPUT(EXPT0003),
  DDNAME(CPAOEX03),
  DELIMIT(', '),
  LABELS,
  TITLE1('SUMMARY Performance Data Extract'),
  EXTERNAL(CPAXW003),
  INTERVAL(00:05:00),
  FIELDS(START(TIMES),STOP(TIMES),TRAN,
        TASKCNT,
        RESPONSE(AVE,MAX),
        DISPATCH(TIME(AVE)),
        CPU(TIME(AVE)),
        SC31UHW(M(AVE)))

```

```

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                                      Performance Summary

EXPT0003 Printed at 12:03:45 11/12/2013   Data from 15:41:19 6/12/2004 to 16:15:40 6/16/2004   Page 1
SUMMARY Performance Data Extract

CPAOEX03 Extract has completed successfully
Data Set Name . . . . CICSPA.SUMMARY.EXTRACT
Record count . . . . 65

```

Figure 213. Performance Summary extract (Recap report)

#### Example 18: Summarize response times by range

Figure 214 on page 446 shows a Performance Summary report that uses the RNGCOUNT and RNGPERCENT functions to show the distribution of transaction response times in ranges of 0.2 seconds. You can use this report to answer questions such as: How many transactions had a response time between 0.4 and 0.6 seconds? What percentage of transactions had a response time of 1 second or longer?

```

CICSPA SUMMARY(
    FIELDS(TRAN(ASCEND),
        TASKCNT,
        RESPONSE(AVE,MAX),
        RESPONSE(RNGCOUNT(<0.2)),
        RESPONSE(RNGPERCENT(<0.2)),
        RESPONSE(RNGCOUNT(0.2-0.4)),
        RESPONSE(RNGPERCENT(0.2-0.4)),
        RESPONSE(RNGCOUNT(0.4-0.6)),
        RESPONSE(RNGPERCENT(0.4-0.6)),
        RESPONSE(RNGCOUNT(0.6-0.8)),
        RESPONSE(RNGPERCENT(0.6-0.8)),
        RESPONSE(RNGCOUNT(0.8-1.0)),
        RESPONSE(RNGPERCENT(0.8-1.0)),
        RESPONSE(RNGCOUNT(>=1.0)),
        RESPONSE(RNGPERCENT(>=1.0))))

```

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CICS Performance Analyzer  
Performance Summary

SUMM0001 Printed at 12:03:45 11/12/2013      Data from 16:20:08 12/15/2004 to 11:28:14 12/16/2004      Page 1

Tran	#Tasks	Avg Response Time	Max Response Time	<0.2 Response Time	<0.2 Response Time	0.2-0.4 Response Time	0.2-0.4 Response Time	0.4-0.6 Response Time	0.4-0.6 Response Time	0.6-0.8 Response Time	0.6-0.8 Response Time	0.8-1.0 Response Time	0.8-1.0 Response Time	>=1.0 Response Time	>=1.0 Response Time
AP01	5	.822835	1.539306	0	.0	0	.0	0	.0	4	79.9	0	.0	1	19.9
AP02	5	.005847	.007620	5	100.0	0	.0	0	.0	0	.0	0	.0	0	.0
AP03	5	.003338	.003827	5	100.0	0	.0	0	.0	0	.0	0	.0	0	.0
CATA	28	.098631	.866135	25	89.2	0	.0	2	7.1	0	.0	1	3.5	0	.0
CATD	2	.310097	.594725	1	50.0	0	.0	1	50.0	0	.0	0	.0	0	.0
CATR	33	.014969	.047388	33	100.0	0	.0	0	.0	0	.0	0	.0	0	.0
CDBC	5	2.329661	3.600855	0	.0	0	.0	0	.0	0	.0	0	.0	5	100.0
CDBI	5	2.227452	4.431367	0	.0	0	.0	0	.0	0	.0	0	.0	5	100.0
CDBQ	9	.217337	.399723	5	55.5	4	44.4	0	.0	0	.0	0	.0	0	.0
CDTS	21	.004606	.006927	21	100.0	0	.0	0	.0	0	.0	0	.0	0	.0
CEBR	11	193.7346	936.1108	0	.0	0	.0	0	.0	0	.0	0	.0	11	100.0
CECI	22	65.44253	1087.786	0	.0	0	.0	0	.0	1	4.5	0	.0	21	95.4
:															

Figure 214. Performance Summary report (response time distributions)

Notice that the column headings for counts and percentages are identical. To distinguish between these columns, check the values under the headings: percentages appear with a decimal point, whereas counts are integers, and hence have no decimal point.

#### Example 19: Application Grouping by transaction ID

This Application Grouping example produces a Performance Summary report like that shown in Figure 215 on page 447. This report uses the BUSFUNC Application Group shown in Figure 172 on page 337.

```

CICSPA SUMMARY(OUTPUT(SUMM0001),
    TOTALS(8),
    INTERVAL(00:01:00),
    FIELDS(BUSFUNC(APG,ASCEND),
        TRAN(ASCEND),
        TASKCNT,
        RESPONSE(AVE),
        RESPONSE(MAX),
        DISPATCH(TIME(AVE)),
        CPU(TIME(AVE)),
        SUSPEND(TIME(AVE)),
        SUSPEND(TIME(MAX)),
        DISPWAIT(TIME(AVE)),
        FCWAIT(TIME(AVE))))

```

BUSFUNC Group	Tran	#Tasks	Avg Response Time	Max Response Time	Avg Dispatch Time	Avg User Time	Avg CPU Time	Avg Suspend Time	Max Suspend Time	Avg DispWait Time	Avg FC Wait Time
Accounting	ADJQ	9	.3912	.8376	.0030	.0022	.3881	.8312	.0034	.0000	.0000
Accounting	ADUS	9	.3343	.7729	.2517	.0485	.0825	.1783	.0243	.0000	.0000
Accounting	AEVS	39	.0281	.3362	.0015	.0012	.0266	.3344	.0010	.0000	.0000
Accounting		76	1.2924	74.6819	.3350	.0808	.9574	64.9890	.0382	.0000	.0000
CICS-supplied transactions	CSKP	16	.0090	.0232	.0016	.0011	.0074	.0213	.0017	.0000	.0000
CICS-supplied transactions	CSMI	34193	.2999	31.9736	.0013	.0009	.2986	31.9695	.0005	.0041	.0000
CICS-supplied transactions	CSM2	2	.0010	.0015	.0004	.0004	.0005	.0008	.0000	.0000	.0000
CICS-supplied transactions		34340	.3002	31.9736	.0026	.0009	.2976	31.9695	.0007	.0041	.0000
Delivery	DBEC	99	.0196	.1998	.0015	.0012	.0180	.1981	.0031	.0175	.0000
Delivery	DBUS	23	.6747	2.5609	.5730	.1066	.1017	.2060	.0220	.0000	.0000
Delivery	DI12	148	.0284	.1486	.0012	.0009	.0272	.1467	.0017	.0000	.0000
Delivery		326	.2626	2.5609	.0473	.0114	.2152	2.3320	.0047	.0053	.0000
Finance	FJD3	46	.0024	.0185	.0019	.0015	.0005	.0165	.0000	.0000	.0000
Finance	FTB2	2	9.4656	10.4636	.0059	.0045	9.4597	10.4562	.0018	.0000	.0000
Finance	FTB3	8	2.0977	2.1966	.0019	.0014	2.0958	2.1951	.0030	.0000	.0000
Finance		102	1.3056	10.4636	.0019	.0015	1.3036	10.4562	.0006	.0000	.0000
Statistics collection	\$SFR	9	.0264	.0359	.0221	.0054	.0043	.0096	.0012	.0000	.0000
Statistics collection	#BEK	3	.0020	.0022	.0008	.0007	.0012	.0013	.0002	.0000	.0000
Statistics collection	#DDS	927	4.9054	20.0135	2.4500	.0376	2.4554	15.8274	.0254	.0000	.0000
Statistics collection		3497	1.8609	24.1543	.8081	.0335	1.0528	24.0906	.0146	.0000	.0000
Unassigned transactions	IFB4	4	.8400	2.7034	.6737	.0057	.1663	.2678	.0067	.0000	.0000
Unassigned transactions	MD15	1	.0199	.0199	.0016	.0012	.0182	.0182	.0002	.0000	.0000
Unassigned transactions	MD16	6	.0003	.0005	.0002	.0002	.0001	.0003	.0000	.0000	.0000
Unassigned transactions		21599	.2013	8.2288	.1256	.0239	.0756	6.6346	.0235	.0000	.0000
Total		59940	.3584	74.6819	.0946	.0113	.2638	64.9890	.0098	.0024	.0000

Figure 215. Performance Summary report (Application Grouping)

Example 20: Performance Alerts Summary report and extract.

```

CICSPA PRECISION(4),
SUMMARY(OUTPUT(SUMM0001),
ALERTDEF(ALERT01),SEVERITY(ELIGIBLE),
TOTALS(8),INTERVAL(00:01:00),
FIELDS(TRAN(ASCEND),
TASKCNT,
ALERT(SEV(CRITICAL,PERCENT)),
ALERT(SEV(CRITICAL,COUNT)),
ALERT(SEV(WARNING,COUNT)),
ALERT(SEV(INFO,COUNT)),
RESPONSE(SEV(CRITICAL,COUNT)),
RESPONSE(SEV(WARNING,COUNT)),
RESPONSE(SEV(INFO,COUNT)),
RESPONSE(AVE),
CPU(TIME(SEV(CRITICAL,COUNT))),
CPU(TIME(SEV(WARNING,COUNT))),
CPU(TIME(SEV(INFO,COUNT))),
CPU(TIME(AVE)))

```

SUMM0001 Printed at 17:00:22 4/20/2010 Data from 07:50:50 3/26/2009 to 07:54:28 3/26/2009

Tran	#Tasks	Critical ALERT	Critical ALERT	Warning ALERT	Info ALERT	Critical Response Time	Warning Response Time	Info Response Time	Avg Response Time	Critical User CPU Time	Warning User CPU Time	Info User CPU Time	Avg User CPU Time
CEDA	1	100.00	1	0	0	1	0	0	163.3748	1	0	0	.3450
CEJR	8	12.50	1	2	2	1	1	2	.4349	1	2	1	.2348
CEMT	4	25.00	1	1	1	1	0	1	4.9471	0	1	1	.0198
CESD	1	.00	0	0	0	0	0	0	.0037	0	0	0	.0007
CESN	2	.00	0	0	2	0	0	1	.0261	0	0	2	.0032
CSAC	1	.00	0	1	0	0	1	0	.5235	0	0	0	.0003
CSFU	1	.00	0	1	0	0	1	0	.8119	0	1	0	.0415
CSHQ	1	100.00	1	0	1	1	0	0	192.6462	0	0	1	.0091
CSKL	1	100.00	1	1	0	1	0	0	191.6213	0	1	0	.0134
CSNC	1	100.00	1	0	1	1	0	0	205.4532	0	0	1	.0022
CSNE	2	50.00	1	0	1	1	0	0	99.8076	0	0	1	.0020
CSSY	13	15.38	2	6	9	2	6	3	1.3247	1	0	8	.0457
CSTE	1	.00	0	0	1	0	0	1	.0490	0	0	1	.0032
CSZI	1	100.00	1	0	1	1	0	0	209.1438	0	0	1	.0077
Total	38	26.32	10	12	19	10	9	8	31.6785	3	5	17	.0786

Figure 216. Performance Alerts Summary report

See the sample jobs CPAPASUM and CPAPAXTS in the SCPASAMP library.

Example 21: Platforms and Applications Summary report in tiered format based on Primary keys.

START(DATE)+START(TIMES)+APPLID form the primary key printed as a group key followed by summary data keyed on TRAN.

```

CICSPA IN(SMFIN001),
LINECNT(60),
FORMAT(':', '/', ' '),
PRECISION(4),
SUMMARY(OUTPUT(SUMM0001),
EXTERNAL(CPAXW001),
LINECNT(60),
TOTALS(0),
INTERVAL(00:05:00),
FIELDS(START( DATE, PRIMARY),
START(TIMES, PRIMARY),
APPLID(PRIMARY),
TRAN(ASCEND),
TASKCNT,
RESPONSE(AVE),
RESPONSE(MAX),
DISPATCH(TIME(AVE)),
CPU(TIME(AVE)),
SUSPEND(TIME(AVE)),
SUSPEND(TIME(MAX)),
DISPWAIT(TIME(AVE)),
FCWAIT(TIME(AVE)),
FCAMCT(AVE),
IRWAIT(TIME(AVE)),
SC24UHW(M(AVE)),
SC31UHW(M(AVE)),
TITLE1(
'Tier Summary report

```

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CICS Performance Analyzer  
Performance SummarySUMM0001 Printed at 18:43:01 3/17/2014 Data from 07:10:16 2/18/2014 to 09:20:38 2/20/2014  
Tier Summary report

Page 1

Start : 02/18/2014 Start : 07:10:00 APPLID : IYK2Z1V1

Tran	#Tasks	Avg Response Time	Max Response Time	Avg Dispatch Time	User CPU	Avg Suspend Time	Max Suspend Time	Avg DispWait Time	FC Wait Time	Avg FCAMRq Count	Avg IR Wait Time	Avg SC24UHW Count	Avg SC31UHW Count
CATA	1	.0255	.0255	.0178	.0036	.0077	.0077	.0002	.0000	0	.0000	0	4016
CEDA	2	10.2589	13.5250	.1371	.0694	10.1218	13.4018	.0025	.4415	5128	.0000	0	4016
CEPF	1	6224.765	6224.765	.0107	.0012	6224.754	6224.754	.0243	.0000	0	.0000	0	4016
CEPM	1	6225.064	6225.064	.0066	.0017	6225.057	6225.057	.0351	.0000	0	.0000	0	4016
CESN	2	.0536	.0703	.0474	.0036	.0063	.0121	.0006	.0000	0	.0000	0	4072
CFQR	1	6234.225	6234.225	.0001	.0001	6234.224	6234.224	.0066	.0000	0	.0000	0	4016
CFQS	1	6234.218	6234.218	.0110	.0026	6234.207	6234.207	.0009	.0000	0	.0000	0	4016
CFTL	1	.1112	.1112	.0248	.0054	.0864	.0864	.0024	.0277	4	.0000	0	4016
CGRP	1	.0451	.0451	.0089	.0017	.0362	.0362	.0052	.0000	0	.0000	0	4016

:

CSOL	1	1887.539	1887.539	.1126	.0145	1887.426	1887.426	.0340	.0000	0	.0000	0	4016
CSSY	12	.8661	9.0606	.2227	.0373	.6433	6.5953	.0560	.1565	307	.0000	94	4150
CSZI	1	6227.855	6227.855	.0168	.0058	6227.839	6227.839	.0254	.0000	0	.0000	0	4016
CWBG	1	.0336	.0336	.0057	.0014	.0279	.0279	.0279	.0000	0	.0000	0	4016
CXRE	1	.0116	.0116	.0072	.0014	.0044	.0044	.0044	.0000	0	.0000	0	4016

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CICS Performance Analyzer  
Performance SummarySUMM0001 Printed at 18:43:01 3/17/2014 Data from 07:10:16 2/18/2014 to 09:20:38 2/20/2014  
Tier Summary report

Page 2

Start : 02/18/2014 Start : 07:15:00 APPLID : IYK2Z1V1

Tran	#Tasks	Avg Response Time	Max Response Time	Avg Dispatch Time	User CPU	Avg Suspend Time	Max Suspend Time	Avg DispWait Time	FC Wait Time	Avg FCAMRq Count	Avg IR Wait Time	Avg SC24UHW Count	Avg SC31UHW Count
CATR	1	.0038	.0038	.0035	.0023	.0004	.0004	.0003	.0000	0	.0000	0	4016
CRTP	2	.0022	.0024	.0008	.0003	.0014	.0016	.0000	.0000	0	.0000	0	4016
CSSY	1	5877.833	5877.833	.0005	.0002	5877.832	5877.832	.0000	.0000	0	.0000	0	4016
STAT	1	5871.863	5871.863	.1504	.0433	5871.713	5871.713	.0008	.0000	0	.0000	0	4016

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CICS Performance Analyzer  
Performance SummarySUMM0001 Printed at 18:43:01 3/17/2014 Data from 07:10:16 2/18/2014 to 09:20:38 2/20/2014  
Tier Summary report

Page 3

Start : 02/18/2014 Start : 07:20:00 APPLID : IYK2Z1V1

Tran	#Tasks	Avg Response Time	Max Response Time	Avg Dispatch Time	User CPU	Avg Suspend Time	Max Suspend Time	Avg DispWait Time	FC Wait Time	Avg FCAMRq Count	Avg IR Wait Time	Avg SC24UHW Count	Avg SC31UHW Count
CRTP	3	.0057	.0094	.0024	.0003	.0033	.0044	.0002	.0000	0	.0000	0	4016

:

Figure 217. Platforms and Applications Summary report

## TOTAL - Performance Totals report

The TOTAL operand requests the Performance Totals report.

The command format is:

```

CICSPA TOTAL(
    [OUTPUT(ddname),]
    [LINECount(nnn),]
    [TITLE1('...up to 64 characters...'),]
    [TITLE2('...up to 64 characters...'),]
    [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),
        ...))])

```

The options are:

## OUTPUT

Controls the report output DDname. If not specified, CICS PA assigns a DDname in the format **TOTLnnnn** where nnnn is the report sequence number **0001-9999**. See “OUTPUT” on page 390 for further information.

## LINECOUNT

Controls the number of lines per page. See “LINECount” on page 392 for further information.

## TITLE1, TITLE2

Controls the report title (left and right half of subheading line). See “TITLE1 and TITLE2” on page 392 for further information.

## SELECT(PERFORMANCE(INCLUDE|EXCLUDE

Specifies what data to include or exclude from the report based on data field values. See “Using SELECT statements” on page 525 for an explanation and examples.

## TOTAL examples

Example 1: Default report

```
CICSPA TOTAL
```

Example 2: Report interval

This example shows the TOTAL operand combined with SELECT(PERFORMANCE. The SELECT statement will restrict the input data to be that of the specified day, January 12, 2005.

```
CICSPA TOTAL(SELECT(PERFORMANCE(INCLUDE(  
                                START(FROM(2005/01/12,),TO(2005/01/13,))))))
```

Example 3: Exclude CICS-supplied transactions

The following command generates a Performance Totals report for the data from September 25, 2004.

```
CICSPA APPLID(IYK2Z1V3),  
      TOTAL(OUTPUT(TOTL0002),  
            SELECT(PERFORMANCE(  
                  EXCLUDE(TRAN(CSHQ,CSNC,CSNE,CSOL,CSSY,CWXN)),  
                  INCLUDE(ACTIVE(FROM(2004/09/25,))))))
```

Figure 218 on page 451 shows an example of the output.

The Performance Totals report has four parts:

1. **CICS System Statistics.** Statistics about the CICS system as a whole, including:
  - CPU and Dispatch times
  - Performance Record and Task counts
2. **CPU and Dispatch Statistics.** Breakdown of CPU, Dispatch, and Suspend counts and elapsed time.
3. **Resource Utilization Statistics.** Each field in the performance record is summarized:
  - For Clock fields, the count and time components are broken down.
  - For Count fields, the count values are reported.
4. **User Field Statistics.** Statistics for the User Fields defined in the CMF performance class records.



TOTL0001 Printed at 12:03:45 11/12/2013 Data from 15:05:46 2/15/2009 to 15:17:57 2/15/2009

	Dispatched Time		CPU Time	
	DD HH:MM:SS	Secs	DD HH:MM:SS	Secs
Total Elapsed Run Time	00:12:11	731		
From Selected Performance Records				
QR Dispatch/CPU Time	00:00:04	4	00:00:02	2
MS Dispatch/CPU Time	00:00:12	12	00:00:01	1
TOTAL (QR + MS)	00:00:16	16	00:00:03	3
L8 CPU Time			00:00:00	0
J8 CPU Time			00:00:02	2
S8 CPU Time			00:00:00	0
T8 CPU Time			00:00:00	0
X8 CPU Time			00:00:00	0
TOTAL (L8 + J8 + S8 + T8 + X8)	00:00:10	10	00:00:02	2
L9 CPU Time			00:00:00	0
J9 CPU Time			00:00:00	0
X9 CPU Time			00:00:00	0
TOTAL (L9 + J9 + X9)	00:00:00	0	00:00:00	0
Total CICS TCB Time	00:00:26	26	00:00:04	4
Total Performance Records (Type C)		0		
Total Performance Records (Type D)		0		
Total Performance Records (Type F)		0		
Total Performance Records (Type S)		0		
Total Performance Records (Type T)		183		
Total Performance Records (Selected)		183	Total Performance Records	183
From Selected Performance Records				
	..... C O U N T S .....			..... T I M E .....
	Total	Avg/Task	Max/Task	Total Avg/Task Max/Task
Dispatch Time	17803	97.3	6670	26 .141 8.540
CPU Time				4 .023 1.680
RLS CPU (SRB) Time				0 .000 .000
:				
From Selected User Records				
	..... C O U N T S .....			..... T I M E .....
	Total	Avg/Task	Max/Task	Total Avg/Task Max/Task
INIT EZA01 S001	0	.0	0	0 .000 .000
READ EZA01 S002	0	.0	0	0 .000 .000
WRITE EZA01 S003	0	.0	0	0 .000 .000
:				

Figure 218. Performance Totals report

## WAITANALYSIS - Wait Analysis report

The WAITANALYSIS or WAIT operand requests the Wait Analysis report.

The command format is:

```

CICSPA WAITANALYSIS(
    [OUTPUT(ddname),]
    [BY(by1[,by2][,by3]),]
    [INTERVAL(hh:mm:ss),]
    [LINECount(nnn),]
    [TITLE1('...sub-heading left ...'),]
    [TITLE2('...sub-heading right...'),]
    [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),
        ...))])

```

The options are:

#### **OUTPUT**

Controls the report output DDname. If not specified, CICS PA assigns a DDname in the format **WAITnnnn** where nnnn is the report sequence number **0001-9999**. See “OUTPUT” on page 390 for further information.

#### **INTERVAL**

Specifies a time interval when the report summarizes transaction activity over time. The interval is in the range 1 second to 24 hours in the format *hh:mm:ss* for hours, minutes, and seconds.

This operand applies only when the report or extract is sorted by transaction Start or Stop time; that is, when the BY operand specifies START or STOP. For reporting, data is accumulated for each interval in the report period and a report line or extract record is written for each interval. If INTERVAL is not specified, the default is **00:01:00** (1 minute).

A time interval of less than one hour must fit evenly into the hour. CICS PA will round it down to the nearest interval that aligns to the hour. For example, 1.35 is reduced to 00:01:30 minutes which will produce 40 interval report lines for each hour of data.

A time interval of more than one hour must fit evenly into the day. CICS PA will round it down to the nearest interval that aligns to the day. For example, 10.30.23 is reduced to 08:00:00 hours which will produce 3 interval report lines for each day of data.

Minutes take precedence for an abbreviated entry. For example:

**1** becomes 00:01:00

**1.1** becomes 00:01:00 (rounded down from 00:01:01)

**1.1.1** becomes 01:00:00 (rounded down from 01:01:01)

**BY** Controls the summarization order of the report. Up to three fields can be specified, and the order in which they are specified dictates the sort precedence. Only fields of type T (Time Stamp) and C (Character) can be sort fields. See “WAITANALYSIS(BY)” for further information and the list of fields which are sort candidates.

#### **LINECOUNT**

Controls the number of lines per page. See “LINECount” on page 392 for further information.

#### **TITLE1, TITLE2**

Controls the report title (left and right half of subheading line). See “TITLE1 and TITLE2” on page 392 for further information.

#### **SELECT(PERFORMANCE(INCLUDE|EXCLUDE**

Specifies what data to include or exclude from the report based on data field values. See “Using SELECT statements” on page 525 for an explanation and examples.

## **WAITANALYSIS(BY**

The summarization order of the Wait Analysis report can be modified. This is done with the BY operand followed by one to three field names specified in the order of the intended sort precedence. The data is collated in ascending sequence.

If BY is omitted, the default is **BY(TRAN)**.

The format of the command is:

CICSPA WAITANALYSIS(BY(by1[,by2][,by3]))

The CICS-defined character fields that can be selected for the Wait Analysis report are:

**TRAN** Transaction identifier  
**APPLID**  
CICS Generic APPLID  
**PROGRAM**  
Program name  
**TERM** Terminal identifier  
**USERID**  
User ID  
**APPLPROG**  
Application naming Program name  
**APPLTRAN**  
Application naming Transaction ID  
**FCTY** Transaction Facility name  
**LUNAME**  
VTAM<sup>®</sup> logical unit name  
**RLUNAME**  
VTAM LUALIAS logical unit name  
**RPTCLASS**  
Workload Manager (WLM) Report Class  
**SRVCLASS**  
Workload Manager (WLM) Service Class  
**TCLASSNM**  
Transaction Class name  
**TCPSRVCE**  
TCP/IP Service Name  
**TERMCNNM**  
Terminal session Connection name  
**ISIPICNM**  
Name of IPCONN definition that attached the task  
**WBATMSNM**  
Web ATOMSERVICE resource definition  
**WBPIPLNM**  
Web PIPELINE resource definition  
**WBPROGNM**  
Web program in URIMAP resource definition  
**WBSVCENM**  
Web WEBSERVICE resource definition  
**WBSVOPNM**  
Web WEBSERVICE operation name  
**WBURIMNM**  
Web URIMAP resource definition

To summarize wait activity over time, select one or both of the time stamp fields:

**START**  
Task start time  
**STOP** Task stop time

## WAITANALYSIS examples

Example 1: Default report

CICSPA WAITANAL

The report is sorted by TRAN.

V5R2M0		CICS Performance Analyzer			
		Wait Analysis Report			
WAIT0001 Printed at 12:03:45 11/12/2013		Data from 15:05:46 2/15/2009 to 15:17:57 2/15/2009			Page 1
-----					
Tran=CATA					
Summary Data		----- Time -----		----- Count -----	
		Total	Average	Total	Average
# Tasks				3	
Response Time		0.0331	0.0110		
Dispatch Time		0.0276	0.0092	18	6.0
CPU Time		0.0082	0.0027	18	6.0
Suspend Wait Time		0.0056	0.0019	18	6.0
Dispatch Wait Time		0.0021	0.0007	15	5.0
QR TCB Redispach Wait Time		0.0021	0.0007	12	4.0
Resource Manager Interface (RMI) elapsed time		0.0000	0.0000	0	0.0
Resource Manager Interface (RMI) suspend time		0.0000	0.0000	0	0.0
-----					
Suspend Detail		----- Suspend Time -----			----- Count -----
		Total	Average	%age	Graph
N/A Other Wait Time		0.0025	0.0008	45.0%	*****
DSCHMDLY Redispach wait time caused by change-TCB mode		0.0015	0.0005	27.6%	*****
JCIOWTT Journal I/O wait time		0.0015	0.0005	26.1%	*****
DSPDELAY First dispatch wait time		0.0001	0.0000	1.3%	
GVUPWAIT Give up control wait time		0.0000	0.0000	0.0%	
-----					

Figure 219. Wait Analysis report

## Example 2: Report interval

This example shows the WAITANALYSIS operand combined with SELECT(PERFORMANCE. The SELECT statement will restrict the input data to be that of the specified day, January 12, 2005.

```
CICSPA WAITANAL(SELECT(PERFORMANCE(INCLUDE(
START(FROM(2005/01/12, ) ,TO(2005/01/13, ))))))
```

## PROFILING - Transaction Profiling report

The **PROFILING** operand requests the Transaction Profiling report.

The command format for the Transaction Profiling report is:

```
CICSPA PROFILING([ID(profile#)],REPORT(SMF|hdbname),
[SUFACTOR(ddname|hdbname(nnnnn.nnn)),]
[SMFSTART(date,time),]
[SMFSTOP(date,time),]
[SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...)),]
[SELECT2(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...)),]
[FIELDS(field1[(options)],...),]
[INTERVAL(hh:mm:ss),]
[PRINT(REPORT,BASELINE,DELTA,CHANGE,
FULL|EXCEPTIONSONLY,NOBLANKLINES|BLANKLINES),]
[THRESHOLD(%abovebaseline,%belowbaseline),]
[OUTPUT(ddname),]
[EXTERNAL(ddname),]
[NOTOTALS|TOTALS(n),]
[LINECount(nnn),]
[TITLE1('...1st 64 characters of title... '),]
[TITLE2('...2nd 64 characters of title... '),])

PROFILING([ID(profile#)],BASELINE(SMF|hdbname),
[SUFACTOR(ddname|hdbname(nnnnn.nnn)),]
[SMFSTART(date,time),]
[SMFSTOP(date,time),]
[SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...)),]
[SELECT2(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...)),]
[FIELDS(field1[(options)],...),]
[INTERVAL(hh:mm:ss)])
```

You must specify two PROFILING operands for each Transaction Profiling report:

- One with a REPORT suboperand that defines the source of the report data
- One with a BASELINE suboperand that defines the source of the baseline data

You can specify CICSPA control operands between the two PROFILING operands, allowing you to specify different control operand values for processing the report data and the baseline data. However, only the following control operands affect the processing of the baseline data: APPLID|NOAPPLID, INPUT, SELECT, SELECT2, SMFSTART, SMFSTOP, and ZONE. For other control operands, if you specify different values for the report data and the baseline data, the Transaction Profiling report uses the values in effect for the report data; that is, the PROFILING(REPORT(...)) operand.

For details on how the APPLID|NOAPPLID, INPUT, and ZONE control operands affect the processing of the baseline data, see the description of the BASELINE operand.

The following options apply to both PROFILING operands:

#### **ID(profile#)**

Explicitly matches the two PROFILING operands for each Transaction Profiling report by an integer value, profile#.

If you only request a single Transaction Profiling report in a batch job, so you have only one PROFILING(REPORT(...)) operand and one PROFILING(BASELINE(...)) operand, then an ID is unnecessary, and you can specify the two PROFILING operands in either order.

The ID operand is always optional, even when you request more than one Transaction Profiling report in the same batch job.

If you omit IDs, the order of the PROFILING operands is significant: CICS PA counts the PROFILING(REPORT(...)) operands and the PROFILING(BASELINE(...)) operands, and then matches the first PROFILING(REPORT(...)) operand with the first PROFILING(BASELINE(...)) operand, the second with the second, and so on.

If you specify IDs, the order of PROFILING operands is not significant:

```
CICSPA ...  
      PROFILING(ID(1),REPORT(...)),  
      ...  
      PROFILING(ID(2),REPORT(...)),  
      ...  
      PROFILING(ID(2),BASELINE(...))  
      ...  
      PROFILING(ID(1),BASELINE(...))
```

Never specify a mix of PROFILING operands with and without IDs. To improve the readability of your batch commands, specify IDs and keep each REPORT and BASELINE pair together.

#### **REPORT|BASELINE(SMF|hdbname)**

**REPORT** indicates that this PROFILING operand defines the report data and other Transaction Profiling report options.

**BASELINE** indicates that this PROFILING operand defines the baseline data.

The values of BASELINE and REPORT define the source of the baseline data and the report data. For example:

- REPORT(SMF) defines the source of the report data as the SMF files identified by either the most recent INPUT operand, if specified, or the DDname SMFIN, if no INPUT operand is specified.
- BASELINE(PROD) defines the source of the baseline data as the HDB named PROD that is defined in the Repository identified by the DDname CPAHDBRG.

**Note:** Do not name a performance HDB “SMF” if you plan to use it for a Transaction Profiling report.

If the report data and the baseline data both reside in HDBs, then the HDBs must exist in the same Repository.

If the report data and the baseline data both reside in the same set of SMF files, then you only need to specify a single INPUT operand or the DDname SMFIN:

```
CICSPA ...  
      INPUT(SMFIN001),  
      PROFILING(REPORT(SMF), ...),  
      PROFILING(BASELINE(SMF), ...)
```

If the report data and the baseline data reside in different sets of SMF files, then you need to specify an INPUT operand before the PROFILING operand for the baseline data. In the following example, the report data resides in the SMF files identified by the DDname SMFIN001, and the baseline data resides in the SMF files identified by the DDname SMFIN002:

```
CICSPA ...  
      INPUT(SMFIN001),  
      PROFILING(REPORT(SMF), ...),  
      INPUT(SMFIN002),  
      PROFILING(BASELINE(SMF), ...)
```

## SUFACTOR

Specifies a CPU SU conversion factor to apply to the SMF file or HDB. The SUFACTOR value is used to convert the transaction CPU time to service units in the CPUSU field. The SUFACTOR operand includes two keywords to identify the SMF file or HDB name and its associated conversion factor. The conversion factor must be a decimal number or integer in the range 1 - 999999999 (nine 9s).

A different SUFACTOR can be applied to the BASELINE and REPORT data. The following example shows how to specify the PROFILING operand where the REPORT and the BASELINE are both sourced from an SMF file:

```
CICSPA IN(ddname1),  
      SUFACTOR(ddname1(nnnnn.nnn)),  
      PROFILING(ID(nnn),REPORT(SMF),  
      ...  
CICSPA IN(ddname2),  
      PROFILING(ID(nnn),BASELINE(SMF),  
      ...  
      SUFACTOR(ddname2(nnnnn.nnn))]
```

This example shows how to specify the PROFILING operand where the REPORT is sourced from an SMF file and the BASELINE is sourced from an HDB:

```

CICSPA IN(ddname),
        SUFACTOR(ddname(nnnnn.nnn)),
        PROFILING(ID(nnn),REPORT(SMF),
        ...
        PROFILING(ID(nnn),BASELINE(hdname),
        ...
        SUFACTOR(hdbname(nnnnn.nnn))])

```

## SMFSTART, SMFSTOP

Filter the input records of the report data or the baseline data according to the specified time period. For input records in SMF files, SMFSTART and SMFSTOP refer to SMF record time stamps. For input records in HDBs, SMFSTART and SMFSTOP refer to transaction start times. (HDBs do not contain SMF record time stamps.)

For details on specifying values for SMFSTART and SMFSTOP, see “SMFSTART and SMFSTOP” on page 400.

When specified as control operands of the CICSPA command, rather than as suboperands of the PROFILING operand, SMFSTART and SMFSTOP apply to all of the reports that follow them, including the Transaction Profiling report. When specified “locally”, as suboperands of the PROFILING operand, SMFSTART and SMFSTOP override the “global” control operands, but only for that PROFILING operand.

Typically, when running the Transaction Profiling report in a Report Set with other reports, you only specify local SMFSTART and SMFSTOP values for the baseline data (in the PROFILING operand that contains the BASELINE suboperand). The report data uses the global values specified by the SMFSTART and SMFSTOP CICSPA control operands:

```

CICSPA ...
        SMFSTART(...),SMFSTOP(...), 1
        PROFILING(
                BASELINE(PROD),
                SMFSTART(...),SMFSTOP(...), 2
                ...),
        PROFILING(REPORT(SMF), ...)

```

**1** “Global” control operands whose values apply to all reports that follow.

**2** “Local” values that apply only to this PROFILING operand for the baseline data, overriding the global values.

## INTERVAL

Specifies a time interval for summarizing transaction activity over time. The interval is in the range 1 second to 24 hours in the format *hh:mm:ss* for hours, minutes, and seconds.

This operand applies only when the FIELDS operand specifies a time stamp key field, such as START or STOP (transaction start or stop time). For each time interval covered by the report period, CICS PA accumulates input records, and creates a line of summarized data. If INTERVAL is not specified, the default is **00:01:00** (1 minute).

**Summary HDBs only:** Data in a Summary HDB is already summarized by the interval that was used to load the data into the HDB. To further summarize the data, specify a multiple of the interval that was used to load the data. If you specify an interval that is equal to or less than the interval used to load the data, the report uses the data as-is, without further summarization.

Typically, you specify the same time interval for the report data, in PROFILING(REPORT(...)...), and for the baseline data, in PROFILING(BASELINE(...)...), so that the Transaction Profiling report compares data summarized over time intervals of the same length. In this case, you must explicitly specify INTERVAL in both PROFILING operands; the baseline data will not default to the same interval value as the report data.

Time intervals begin at the start of the day (00:00:00), not from the start of the report period. This ensures that the time stamp key field values in the summarized report data and the summarized baseline data are synchronized.

If you want to summarize report data at time intervals, and compare each time interval with a single, common set of summarized baseline data, then omit the time stamp key field from the FIELDS operand for the baseline data. For example, you could compare hourly performance data with a single set of performance data for the entire day.

In rare cases, you might want to specify different time intervals for the report data and the baseline data. The Transaction Profiling report matches each report data interval with the baseline data interval that covers the start of the report data interval. For example, suppose you summarize report data using an interval of 15 minutes and baseline data using an interval of 30 minutes. The Transaction Profiling report matches each consecutive pair of 15-minute report data intervals with the same single 30-minute baseline data interval, because the 30-minute baseline data interval covers the start of both 15-minute report data intervals. That is, the Transaction Profiling report matches 15 minutes of report data with 30 minutes of baseline data, and then matches the next 15 minutes of report data with the same 30 minutes of baseline data. The time interval you specify for the baseline data should be greater than or equal to the time interval for the report data. Otherwise, some baseline data intervals will not match the start of any report data intervals, and so that baseline data will not appear in the report.

A time interval of less than one hour must fit evenly into the hour. CICS PA will round it down to the nearest interval that aligns to the hour. For example, 1.35 is reduced to 00:01:30 minutes which will produce 40 interval report lines for each hour of data.

A time interval of more than one hour must fit evenly into the day. CICS PA will round it down to the nearest interval that aligns to the day. For example, 10.30.23 is reduced to 08:00:00 hours which will produce 3 interval report lines for each day of data.

Minutes take precedence for an abbreviated entry. For example:

- 1 becomes 00:01:00
- 1.1 becomes 00:01:00 (rounded down from 00:01:01)
- 1.1.1 becomes 01:00:00 (rounded down from 01:01:01)

## FIELDS

Specifies the key fields that you want report data and baseline data records to be grouped and sorted by, the “non-key” fields whose values you want to compare, and the functions for summarizing the non-key field values (for example, as an average or a total).

To understand how the Transaction Profiling report uses the FIELDS operand, it is useful to think of it as a comparison of two Performance Summary reports:



- One for the report data, as specified by the PROFILING(REPORT(...), FIELDS(...)) operand
- One for the baseline data, as specified by the PROFILING(BASELINE(...), FIELDS(...)) operand

See “Transaction Profiling report compares two Performance Summary reports” on page 194.

For details on specifying the FIELDS operand, see the description of the FIELDS operand for the Performance Summary report, “SUMMARY(FIELDS” on page 428. The values that you can specify for the FIELDS operand in the Transaction Profiling report and the Performance Summary report are identical.

The FIELDS operand in the Transaction Profiling report involves the following additional considerations:

- In the PROFILING(REPORT(...)) operand, FIELDS defines the Report Form. The Report Form specifies how the Transaction Profiling report summarizes the report data, and also which fields appear on the Transaction Profiling report. The following FIELDS operand defines a Report Form with two key fields, transaction start time and transaction ID, and two non-key fields, task count and response time:  
FIELDS (START, TRAN, TASKCNT, RESPONSE)
- If you do not specify a Report Form, the Transaction Profiling report creates one:
  - If the report data resides in SMF files, the Transaction Profiling report uses a default form.
  - If the report data resides in an HDB, the Transaction Profiling report uses the HDB Template as the Report Form.  
For a List HDB Template, the Transaction Profiling report treats all character and date fields as key fields, and uses the average function to summarize the other, non-key, fields. The key fields must precede the non-key fields in the Template: otherwise, CICS PA reports an error.
- In the PROFILING(BASELINE(...)) operand, FIELDS defines the Baseline Form. The Baseline Form and the Report Form together specify how the Transaction Profiling report summarizes the baseline data:
  - The Transaction Profiling report ignores any fields in the Baseline Form that are not in the Report Form. For example, if the Baseline Form contains key fields that are not in the Report Form, then these key fields are ignored when summarizing the baseline data. Similarly, any non-key fields that appear in the Baseline Form but not the Report Form are ignored.
  - The Transaction Profiling report ignores the order of the fields in the Baseline Form. For example, when summarizing the baseline data, the Transaction Profiling report uses the key fields in the Baseline Form that also appear in the Report Form, but according to the order of those key fields in the Report Form.
  - If you do not specify a Baseline Form, the Transaction Profiling report creates one:
    - If the baseline data resides in an HDB, the Transaction Profiling report uses the HDB Template as the Baseline Form. As for any Baseline Form, the Transaction Profiling report ignores any fields in the HDB Template that are not in the Report Form, and also ignores the order of the fields in the HDB Template.

For a List HDB Template, the Transaction Profiling report treats character and date fields as key fields, and uses the average function to summarize the other, non-key, fields.

- If the baseline data resides in SMF files, the Transaction Profiling report uses the Report Form as the Baseline Form.
- When summarizing baseline data, the Transaction Profiling report uses only the time-of-day part of any START or STOP key field (transaction start or stop), ignoring the date part. The summarized baseline data for a time-of-day interval matches the summarized report data for that time-of-day interval on any date. For example, if you specify a report data interval of five days and a baseline data interval of five days, then the Transaction Profiling report summarizes each day of report data separately, but summarizes the five days of baseline data together. The Transaction Profiling report compares each daily set of summarized report data with the same set of summarized baseline data. To compare each weekday of the previous week with the same weekday from a week one year ago (compare Monday with another Monday, Tuesday with another Tuesday, etc.), you must run five separate Transaction Profiling reports.
- Defining fields as Primary keys in the report form has no effect in the Transaction Profiling report. These fields are treated as ASCENDING key fields.
- In a Performance Summary report, in addition to key fields, you can select one numeric field as Ascending or Descending to activate **Alternate Sequencing**. This changes the order of report lines from Sort Key to numeric field sequence. The Transaction Profiling report ignores any Alternate Sequencing.

Typically, you only need to specify a Report Form, not a Baseline Form: this ensures matching fields in the two sets of summarized data (assuming that the report data and the baseline data actually contain the fields specified in the form). However, a different Baseline Form is useful in the following cases:

- To specify selection criteria that apply only to the baseline data (you can specify selection criteria inside a form).
- To group the baseline data using fewer key fields than the Report Form uses to group the report data.

If you omit key fields from the Baseline Form that appear in the Report Form, then the Transaction Profiling report matches rows in the two sets of summarized data based on their common key fields. The typical effect is that several rows of summarized report data (with more key fields) match one row of baseline data.

- To limit which non-key fields show values in the Baseline, Delta, and Change lines.

If the Baseline Form omits some of the non-key fields specified by the Report Form, then the Transaction Profiling report shows blanks for these missing fields in the Baseline, Delta, and Change lines.

#### **SELECT | SELECT2(PERFORMANCE(INCLUDE | EXCLUDE**

Specifies what data to include or exclude from the report or extract based on data field values. See "Using SELECT statements" on page 525 for an explanation and examples.

The following options apply only to the PROFILING operand that contains the REPORT suboperand (if you specify these options in the PROFILING operand that contains the BASELINE suboperand, they are ignored):

**LINECount**

Controls the number of lines per page in the Transaction Profiling report. See “LINECount” on page 392 for further information.

**TITLE1, TITLE2**

Controls the report title (left and right half of subheading line) for the Transaction Profiling report. See “TITLE1 and TITLE2” on page 392 for further information.

**OUTPUT**

Controls the report output DDname. If not specified, CICS PA assigns a DDname in the format **PROFnnnn** where nnnn is the report sequence number **0001-9999** to uniquely identify the output. See “OUTPUT” on page 390 for further information.

**EXTERNAL**

Specifies the optional DDname for the work data set used by the external SORT facility. If specified, CICS PA performs an external sort. If not specified, CICS PA performs an internal sort where the records are sorted in storage by CICS PA. The CICS PA dialog always generates the EXTERNAL operand with a DDname in the format **CPAXWnnn** where nnn is the sequence number **001-999**. See “EXTERNAL” on page 391 for further information.

**NOTOTALS | TOTALS(n)**

The totals level applies only to the Summary report.

Specify TOTALS(1) to TOTALS(8) to accumulate subtotals for up to 8 sort fields, print the subtotals when the sort field changes, and print a grand total at the end of the report. Default: **TOTALS(8)**

Specify TOTALS(0) for no subtotals, but print only the grand total.

Specify NOTOTALS for neither subtotals nor grand total.

**THRESHOLD(%abovebaseline,%belowbaseline)**

Specifies minimum thresholds for the Change values that you want the report to include. Change values are the percentage difference between the report data and the baseline data (for details, see the PRINT operand):

- If a Change value is within the thresholds, the report excludes the Change value and its corresponding Delta value (shows them as blanks).
- If all values on a Change line are within the thresholds, and you have also specified the NOWITHINTHRESHOLD operand, then the report excludes that entire Change line, its corresponding Report, Baseline, and Delta lines, and its key field values.

You can specify either or both of the following thresholds:

**%abovebaseline**

This threshold applies only to positive Change values; that is, where the Report value is greater than the Baseline value. The allowed values for this threshold are integers in the range 0-999.

For example, a threshold of 150 excludes Change values smaller than +150%.

### **%belowbaseline**

This threshold applies only to negative Change values. The allowed values for this threshold are integers in the range 0-100.

For example, a threshold of 80 excludes Change values smaller than -80%.

For example, THRESHOLD(150,80) excludes Change values within +150% and -80%.

If you omit both thresholds or you specify both thresholds as 0, the report includes all Change values.

If you specify a value for **%abovebaseline** but you omit **%belowbaseline**, then the report:

- Applies the threshold to positive Change values
- Excludes all negative Change values

If you specify a value for **%belowbaseline** but you leave **%abovebaseline** blank, then the report:

- Applies the threshold to negative Change values
- Excludes all positive Change values

### **PRINT(REPORT,BASELINE,DELTA,CHANGE, FULL | EXCEPTIONSONLY,NOBLANKLINES | BLANKLINES)**

The values REPORT, BASELINE, DELTA, and CHANGE specify the lines of data that you want the Transaction Profiling report to show for each non-key field in the Report Form:

#### **Report**

Summarized report data value. This line is always implicitly specified.

#### **Baseline**

Summarized baseline data value.

**Delta**    **Report** minus **Baseline**.

#### **Change**

Percentage difference between **Report** and **Baseline**. For example:

Report	1.0	0.1
Baseline	0.4	0.5
Change%	+150.00	-80.00

This option generates the REPORT, BASELINE, DELTA, and CHANGE values of the PRINT operand.

If you do not specify any lines, the Transaction Profiling report shows all lines. Otherwise, the Transaction Profiling report shows only the specified lines, except for the Report line, which is always implicitly specified, regardless of whether the value REPORT is explicitly specified in the PRINT operand. For example, to show only the Report line, specify PRINT(REPORT). To show the Report line and the Change line, specify either of these equivalent operands: PRINT(REPORT,CHANGE) or PRINT(CHANGE).

The remaining values of the PRINT operand specify conditions for including or excluding lines:

### **FULL | EXCEPTIONSONLY**

FULL includes lines in the report even when the difference between the report data and the baseline data is within the thresholds specified by the THRESHOLDS operand. This is the

default. Specifying FULL ensures that the Report line is always included, regardless of thresholds. However, specifying FULL does not necessarily mean that the report always includes all lines specified by the PRINT operand. If you also specify NOBLANKLINES, the report excludes any blank Baseline, Delta, or Change lines.

EXCEPTIONSONLY excludes all lines, including the Report line, where the difference between every non-key field in a row of summarized baseline data and the same fields in the matching row of summarized report data are all within the thresholds.

The Baseline Form can specify a subset of the non-key fields in the Report Form, leaving the summarized baseline data with fewer non-key fields than the summarized report data. Specifying EXCEPTIONSONLY, together with a Baseline Form that contains only one non-key field, enables you to produce a Transaction Profiling report that only shows data where that field is not within thresholds. For example, if you specify a Baseline Form where the only non-key field is average response time, then you can produce a Transaction Profiling report that shows only the transactions that are not within an acceptable percentage difference of a baseline average response time.

#### **NOBLANKLINES | BLANKLINES**

NOBLANKLINES excludes any Baseline, Delta, or Change lines whose data consists entirely of blank values. Blank values on these lines indicate either fields with no baseline data or, on the Delta and Change lines, fields where the difference between the report data and the baseline data is within the thresholds specified by the THRESHOLDS operand. NOBLANKLINES has no effect on the Report line, which shows the summarized report data even when NOBLANKLINES excludes all other lines. To exclude all lines, including the Report line, when the difference between the report data and the baseline data is within the thresholds, specify EXCEPTIONSONLY.

BLANKLINES includes all specified lines, even when their data consists entirely of blank values.

Omitting the PRINT operand or specifying PRINT() is equivalent to specifying PRINT(REPORT,BASELINE,DELTA,CHANGE,FULL,NOBLANKLINES).

## **PROFILING examples**

A set of sample Report Forms is provided with CICS PA. See Table 6 on page 295 for the sample SUMMARY Report Forms. You can use these sample Report Forms with your Transaction Profiling reports to provide detailed comparisons of the many aspects affecting CICS system performance.

The following examples show progressively more complex uses for the Transaction Profiling report.

### **Example 1: Comparing data using the default form**

This example compares data from two sets of SMF files. The report data resides in the SMF files identified by the DDname SMFIN001, and the baseline data resides in the SMF files identified by SMFIN002. This example contains no FIELDS

operands, so, to summarize the data, the report uses the default SUMMARY Report Form shown in Figure 161 on page 305.

```
CICSPA IN(SMFIN001),
        PROFILING(REPORT(SMF)),
        IN(SMFIN002),
        PROFILING(BASELINE(SMF),
                  NOTOTALS)
```

V5R2M0		CICS Performance Analyzer Transaction Profiling											
PROF0001 Printed at 12:03:45 11/12/2013		Report Data from 17:24:50 5/02/2006 to 17:27:15 5/02/2006 Baseline Data from 16:21:47 5/02/2006 to 16:23:42 5/02/2006											
Tran		#Tasks	Avg Response Time	Avg Dispatch Time	Avg User CPU Time	Avg Suspend Time	Avg DispWait Time	Avg FC Wait Time	Avg FCAMRq Count	Avg IR Wait Time	Avg SC24UHW Count	Avg SC31UHW Count	
DB2D	Report	560	.0504	.0057	.0017	.0446	.0028	.0000	0	.0000	1040	1296	
DB2D	Baseline	448	.0369	.0047	.0018	.0322	.0015	.0000	0	.0000	1040	1296	
	Delta	+112	+.0134	+.0010	-.0000	+.0125	+.0012	+.0000	+0	+.0000	+0	+0	
	Change%	+25.00	+36.43	+20.59	-2.41	+38.77	+79.51	+.00	+.00	+.00	+.00	+.00	
DC01	Report	560	.0598	.0011	.0005	.0587	.0059	.0000	0	.0000	976	1296	
GLCT	Report	560	.0543	.0005	.0004	.0538	.0023	.0000	0	.0000	0	0	
GLCT	Baseline	448	.0432	.0005	.0003	.0427	.0012	.0000	0	.0000	0	0	
	Delta	+112	+.0111	+.0000	+.0000	+.0111	+.0011	+.0000	+0	+.0000	+0	+0	
	Change%	+25.00	+25.82	+7.37	+10.61	+26.03	+92.24	+.00	+.00	+.00	+.00	+.00	

Figure 220. Transaction Profiling report (comparing data using the default form)

The row headings Report, Baseline, Delta, and Change% appear between the column for the last key field (in this case, there is only one), TRAN, represented by the column heading Tran, and the first non-key field, TASKCNT, represented by the column heading #Tasks. For a cross-reference between field names and column headings, see Chapter 28, “CMF Field IDs by CICS version,” on page 759.

For each line of summarized report data, the report contains a block of lines followed by a blank line. This example report contains three blocks of lines, one for each unique key field value (transaction ID) in the report data. The NOTOTALS operand suppresses the block of lines for the grand total that would otherwise appear at the bottom of the report (with the heading “Total” instead a key field value).

Notice that, in the blocks for transaction IDs DB2D and GLCT, the key field value appears twice. The top value is the key field from the report data; this always appears on the top line of each block, next to the Report line heading. The bottom value is the key field from the matching baseline data; this only appears if there is matching baseline data, and then only if the block would normally contain at least one other line in addition to the Report line. The block for transaction ID DC01 shows no baseline key field value, for two reasons:

- There is no matching baseline data for DC01
- The block contains only the Report line; the other lines have been suppressed by the default NOBLANKLINES option (for the same reason: no matching baseline data). If this example had specified BLANKLINES, then the block of lines for DC01 would have looked like this:

```
DC01  Report      560  .0598  .0011  .0005  .0587  .0059  .0000      0  .0000  976  1296
      Baseline
      Delta
      Change%
```

That is, with blank lines, but still no key field value for baseline data.

## Example 2: Comparing data using a specified form

This example compares data using a Report Form specified by the FIELDS operand. In this example, the Report Form is the sample form CPUSUM1 provided with CICS PA.

```
CICSPA INPUT(SMFIN001),
        PROFILING(REPORT(SMF),
                  FIELDS(TRAN(ASCEND),
                        TASKCNT,
                        RESPONSE(AVE),
                        RESPONSE(MAX),
                        DISPATCH(TIME(AVE)),
                        CPU(TIME(AVE)),
                        SUSPEND(TIME(AVE)),
                        DISPWAIT(TIME(AVE)),
                        QRCPU(TIME(AVE)),
                        MSCPU(TIME(AVE)),
                        ROCPU(TIME(AVE)),
                        KY8CPU(TIME(AVE)),
                        KY9CPU(TIME(AVE)))),
        INPUT(SMFIN002),
        PROFILING(BASELINE(SMF))
```

V5R2M0		CICS Performance Analyzer Transaction Profiling													
PROF0001 Printed at 12:03:45 11/12/2013		Report Data from 17:24:50 5/02/2006 to 17:27:15 5/02/2006						5/02/2006 to 16:23:42 5/02/2006						Page	1
Tran		#Tasks	Avg Response Time	Max Response Time	Avg Dispatch Time	Avg User CPU Time	Avg Suspend Time	Avg Displwait Time	Avg QR CPU Time	Avg MS CPU Time	Avg RO CPU Time	Avg KY8 CPU Time	Avg KY9 CPU Time		
DB2D	Report	560	.0504	1.1744	.0057	.0017	.0446	.0028	.0007	.0000	.0000	.0010	.0001		
DB2D	Baseline	448	.0369	.3085	.0047	.0018	.0322	.0015	.0006	.0000	.0000	.0010	.0001		
	Delta	+112	+.0134	+.8660	+.0010	-.0000	+.0125	+.0012	+.0000	-.0000	-.0000	-.0001	-.0000		
	Change%	+25.00	+36.43	+280.73	+20.59	-2.41	+38.77	+79.51	+3.89	-32.17	-32.17	-5.82	-5.22		
DC01	Report	560	.0598	1.4905	.0011	.0005	.0587	.0059	.0005	.0000	.0000	.0000	.0000		
DC01	Baseline	448	.0472	.7251	.0010	.0005	.0463	.0031	.0005	.0000	.0000	.0000	.0000		
	Delta	+112	+.0126	+.7654	+.0001	+.0000	+.0125	+.0028	+.0000	-.0000	-.0000	+.0000	+.0000		
	Change%	+25.00	+26.67	+105.56	+12.78	+7.70	+26.97	+90.89	+8.50	-23.68	-23.68	+.00	+.00		
GLCT	Report	560	.0543	1.3972	.0005	.0004	.0538	.0023	.0004	.0000	.0000	.0000	.0000		
GLCT	Baseline	448	.0432	.6345	.0005	.0003	.0427	.0012	.0003	.0000	.0000	.0000	.0000		
	Delta	+112	+.0111	+.7627	+.0000	+.0000	+.0111	+.0011	+.0000	-.0000	-.0000	+.0000	+.0000		
	Change%	+25.00	+25.82	+120.21	+7.37	+10.61	+26.03	+92.24	+11.59	-16.24	-16.24	+.00	+.00		
Total	Report	1680	.0548	1.4905	.0024	.0009	.0524	.0037	.0005	.0000	.0000	.0003	.0000		
	Baseline	1344	.0424	.7251	.0021	.0009	.0404	.0019	.0005	.0000	.0000	.0003	.0000		
	Delta	+336	+.0124	+.7654	+.0004	+.0000	+.0120	+.0017	+.0000	-.0000	-.0000	-.0000	-.0000		
	Change%	+25.00	+29.21	+105.56	+18.34	+1.22	+29.77	+88.17	+7.16	-23.77	-23.77	-5.82	-5.22		

Figure 221. Transaction Profiling report (comparing data using a specified form)

## Example 3: Comparing a subset of fields in the report data

Suppose that you are interested in the values of several fields of report data, but you are only interested in comparing one, or a few, of these fields with baseline data. To do this, you specify a Baseline Form with the same key fields as the Report Form, but fewer non-key fields, as shown in this example.

```
CICSPA INPUT(SMFIN001),
        PROFILING(REPORT(SMF),
                  FIELDS(TRAN(ASCEND),
                        TASKCNT,
                        RESPONSE(AVE),
                        RESPONSE(MAX),
                        DISPATCH(TIME(AVE)),
                        CPU(TIME(AVE)),
                        SUSPEND(TIME(AVE)),
                        DISPWAIT(TIME(AVE)),
                        QRCPU(TIME(AVE))),
        INPUT(SMFIN002),
        PROFILING(BASELINE(SMF),
                  FIELDS(TRAN(ASCEND),
                        TASKCNT,
                        RESPONSE(AVE),
                        RESPONSE(MAX),
                        DISPATCH(TIME(AVE)),
                        CPU(TIME(AVE)),
                        SUSPEND(TIME(AVE)),
                        DISPWAIT(TIME(AVE)),
                        QRCPU(TIME(AVE))))
```



```

MSCPU(TIME(AVE)),
ROCPU(TIME(AVE)),
KY8CPU(TIME(AVE)),
KY9CPU(TIME(AVE))),
INPUT(SMFIN002),
PROFILING(BASELINE(SMF),
          FIELDS(TRAN(ASCEND),
                RESPONSE(AVE)))

```

In this example, the Transaction Profiling report groups and summarizes the report data and the baseline data using the same single key field, TRAN, but only includes baseline data values for the average response times.

V5R2M0		CICS Performance Analyzer Transaction Profiling												
PROF0001 Printed at 12:03:45 11/12/2013		Report Data from 17:24:50 5/02/2006 to 17:27:15 5/02/2006 Baseline Data from 16:21:47 5/02/2006 to 16:23:42 5/02/2006										Page	1	
Tran		#Tasks	Avg Response Time	Max Response Time	Avg Dispatch Time	Avg User CPU Time	Avg Suspend Time	Avg DispWait Time	Avg QR CPU Time	Avg MS CPU Time	Avg RO CPU Time	Avg KY8 CPU Time	Avg KY9 CPU Time	
DB2D	Report	560	.0504	1.1744	.0057	.0017	.0446	.0028	.0007	.0000	.0000	.0010	.0001	
DB2D	Baseline		.0369											
	Delta		+.0134											
	Change%		+36.43											
DC01	Report	560	.0598	1.4905	.0011	.0005	.0587	.0059	.0005	.0000	.0000	.0000	.0000	
DC01	Baseline		.0472											
	Delta		+.0126											
	Change%		+26.67											
GLCT	Report	560	.0543	1.3972	.0005	.0004	.0538	.0023	.0004	.0000	.0000	.0000	.0000	
GLCT	Baseline		.0432											
	Delta		+.0111											
	Change%		+25.82											
Total	Report	1680	.0548	1.4905	.0024	.0009	.0524	.0037	.0005	.0000	.0000	.0003	.0000	
	Baseline		.0424											
	Delta		+.0124											
	Change%		+29.21											

Figure 222. Transaction Profiling report (comparing a subset of fields in the report data)

#### Example 4: Excluding changes that are insignificant to you

This is identical to the previous example, except that this example introduces the operands THRESHOLD(30) and PRINT(EXCEPTIONSONLY).

THRESHOLD(30) sets the minimum threshold for changes (report data values greater than baseline data values) at +30%. PRINT(EXCEPTIONSONLY) excludes from the report any blocks of report data where all of the change values are within the threshold. THRESHOLD(30) does not contain a second value, for negative changes, so any negative change values are also considered to be within this specified threshold, and would be excluded.

```

CICSPA INPUT(SMFIN001),
        PROFILING(REPORT(SMF),
                  THRESHOLD(30),
                  PRINT(EXCEPTIONSONLY),
                  FIELDS(TRAN(ASCEND),
                        TASKCNT,
                        RESPONSE(AVE),
                        RESPONSE(MAX),
                        DISPATCH(TIME(AVE)),
                        CPU(TIME(AVE)),
                        SUSPEND(TIME(AVE)),
                        DISPWAIT(TIME(AVE)),
                        QRCPU(TIME(AVE)),
                        MSCPU(TIME(AVE)),
                        ROCPU(TIME(AVE)),
                        KY8CPU(TIME(AVE)),

```



```

                                KY9CPU(TIME(AVE))),
INPUT(SMFIN002),
PROFILING(BASELINE(SMF),
          FIELDS(TRAN(ASCEND),
                RESPONSE(AVE)))

```

Notice that, in addition to excluding blocks of summarized data for unique key field value, leaving only the block for transaction ID DB2D), the PRINT(EXCEPTIONSONLY) operand has also excluded the Total block. If the overall change value for average response time had been +30% or greater, then the report would have shown the Total.

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PROF0001 Printed at 12:03:45 11/12/2013 Report Data from 17:24:50 5/02/2006 to 17:27:15 5/02/2006 Page 1  
Baseline Data from 16:21:47 5/02/2006 to 16:23:42 5/02/2006

Tran		#Tasks	Avg Response Time	Max Response Time	Avg Dispatch Time	Avg User CPU Time	Avg Suspend Time	Avg DispWait Time	Avg QR CPU Time	Avg MS CPU Time	Avg RO CPU Time	Avg KY8 CPU Time	Avg KY9 CPU Time
DB2D	Report	560	.0504	1.1744	.0057	.0017	.0446	.0028	.0007	.0000	.0000	.0010	.0001
DB2D	Baseline		.0369										
	Delta		+.0134										
	Change%		+36.43										

Figure 223. Transaction Profiling report (excluding changes that are insignificant to you)

## Example 5: Comparing data summarized by time interval

This example uses a Report Form, sample form TRTODSUM, that includes a time stamp key field, transaction stop time (STOP). When a form includes a time stamp key field, the INTERVAL operand specifies a time interval for summarizing input records based on their time stamp values. In this example, the INTERVAL(00:05:00) operand summarizes input records, based on their transaction stop times, at intervals of five minutes.

The TOTALS(2) operand instructs the report to print subtotals for each group of values for sort key field 2 that share the same higher-level key field values. In this example, the effect is to show subtotals for each five-minute time interval.

```

CICSPA INPUT(SMFIN001),
        PROFILING(REPORT(SMF),
                  INTERVAL(00:05:00),
                  TOTALS(2),
                  FIELDS(STOP(TIMES,ASCEND),
                        TRAN(ASCEND),
                        TASKCNT,
                        RESPONSE(AVE),
                        RESPONSE(MAX),
                        DISPATCH(TIME(AVE)),
                        CPU(TIME(AVE)),
                        SUSPEND(TIME(AVE)),
                        DISPWAIT(TIME(AVE)),
                        FCWAIT(TIME(AVE)),
                        FCAMCT(AVE),
                        IRWAIT(TIME(AVE)),
                        SC24UHW(M(AVE)),
                        SC31UHW(M(AVE))),
        INPUT(SMFIN002),
        PROFILING(BASELINE(SMF),
                  INTERVAL(00:05:00))

```

For brevity, this example report shows only a single time interval. Typically, such a report would cover more time intervals: 17:30:00, 17:35:00, etc.

PROF0001 Printed at 12:03:45 11/12/2013

Report Data from 17:25:01 5/02/2006 to 17:27:15 5/02/2006  
Baseline Data from 17:24:50 5/02/2006 to 17:26:58 5/02/2006

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Stop Interval	Tran		#Tasks	Avg Response Time	Max Response Time	Avg Dispatch Time	Avg User CPU Time	Avg Suspend Time	Avg Displwait Time	Avg FC Wait Time	Avg FCAMRq Count	Avg IR Wait Time	Avg SC24UHHM Count	Avg SC31UHHM Count
17:25:00	DB2D	Report	520	.0344	.0848	.0018	.0016	.0326	.0015	.0000	0	.0000	1040	1296
17:25:00	DB2D	Baseline	456	.0344	.0848	.0018	.0016	.0326	.0014	.0000	0	.0000	1040	1296
		Delta	+64	-.0000	+.0000	-.0000	-.0000	-.0000	+.0000	+.0000	+0	+.0000	+0	+0
		Change%	+14.04	-.08	+.00	-.71	-.32	-.04	+2.02	+.00	+.00	+.00	+.00	+.00
17:25:00	DC01	Report	520	.0391	.1164	.0008	.0005	.0383	.0034	.0000	0	.0000	976	1296
17:25:00	DC01	Baseline	456	.0392	.1164	.0008	.0005	.0383	.0034	.0000	0	.0000	976	1296
		Delta	+64	-.0000	+.0000	-.0000	+.0000	-.0000	+.0000	+.0000	+0	+.0000	+0	+0
		Change%	+14.04	-.06	+.00	-.20	+.42	-.05	+2.22	+.00	+.00	+.00	+.00	+.00
17:25:00	GLCT	Report	520	.0349	.0856	.0003	.0004	.0345	.0000	.0000	0	.0000	0	0
17:25:00		Report	1560	.0361	.1164	.0010	.0008	.0351	.0016	.0000	0	.0000	672	864
17:25:00		Baseline	1368	.0353	.1164	.0011	.0009	.0343	.0016	.0000	0	.0000	672	1888
		Delta	+192	+.0008	+.0000	-.0001	-.0001	+.0009	+.0000	+.0000	+0	+.0000	+0	-1024
		Change%	+14.04	+2.24	+.00	-8.67	-5.77	+2.59	+7.75	+.00	+.00	+.00	+.00	-54.24
Total		Report	1560	.0361	.1164	.0010	.0008	.0351	.0016	.0000	0	.0000	672	864
		Baseline	1488	.0547	1.4905	.0027	.0009	.0520	.0037	.0000	0	.0000	672	1888
		Delta	+72	-.0186	-1.3741	-.0017	-.0001	-.0168	-.0021	+.0000	+0	+.0000	+0	-1024
		Change%	+4.84	-33.93	-92.19	-63.80	-12.08	-32.37	-55.80	+.00	+.00	+.00	+.00	-54.24

Figure 224. Transaction Profiling report (comparing data summarized by time interval)

As shown in this example, the subtotals and grand total in the Transaction Profiling report might appear to be inconsistent with each other, and also with the blocks of data for each unique key value. This is because the subtotals and grand totals in the Transaction Profiling report are based on the subtotals and grand totals of the separately summarized report data and the baseline data, not just the consolidated data with matching key field values printed in the Transaction Profiling report. So the subtotals and grand totals for the baseline data represent all rows of summarized baseline data, not just those rows whose key field values match rows of report data.

### Example 6: Comparing several time intervals of report data with a single set of baseline data

This example uses a Report Form with a time stamp key field summarized over intervals of five minutes, and a Baseline Form without a time stamp key field, so that the baseline data is summarized without time intervals.

You can use this technique to compare time intervals within a day with a single set of data representing the average for an entire day. As shown in this example, the report data and the baseline data can have the same source (notice that there is only one INPUT operand), so you can compare time intervals within a day with the average across the same day.

```

CICSPA INPUT(SMFIN001),
        PROFILING(REPORT(SMF),
                    INTERVAL(00:05:00),
                    TOTALS(2),
                    FIELDS(STOP(TIMES,ASCEND),
                            TRAN(ASCEND),
                            TASKCNT,
                            RESPONSE(AVE),
                            RESPONSE(MAX),
                            DISPATCH(TIME(AVE)),
                            CPU(TIME(AVE)),
                            SUSPEND(TIME(AVE)),
                            DISPLWAIT(TIME(AVE)),
                            FCWAIT(TIME(AVE)),
                            FCAMCT(AVE),
                            IRWAIT(TIME(AVE))),

```

```

SC24UHW(M(AVE),
SC31UHW(M(AVE))),
PROFILING(BASELINE(SMF),
FIELDS(TRAN(ASCEND),
TASKCNT,
RESPONSE(AVE),
RESPONSE(MAX),
DISPATCH(TIME(AVE)),
CPU(TIME(AVE)),
SUSPEND(TIME(AVE)),
DISPWAIT(TIME(AVE)),
FCWAIT(TIME(AVE)),
FCAMCT(AVE),
IRWAIT(TIME(AVE)),
SC24UHW(M(AVE),
SC31UHW(M(AVE)))

```

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CICS Performance Analyzer

Transaction Profiling

PROF0001 Printed at 12:03:45 11/12/2013

Report Data from 17:25:01 5/02/2006 to 17:27:15 5/02/2006  
Baseline Data from 10:00:00 5/02/2006 to 17:30:00 5/02/2006

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Stop Interval	Tran		#Tasks	Avg Response Time	Max Response Time	Avg Dispatch Time	Avg User CPU Time	Avg Suspend Time	Avg DispWait Time	Avg FC Wait Time	Avg FCAMRq Count	Avg IR Wait Time	Avg SC24UHW Count	Avg SC31UHW Count
17:25:00	DB2D	Report	520	.0344	.0848	.0018	.0016	.0326	.0015	.0000	0	.0000	1040	1296
	DB2D	Baseline	41600	.0504	1.1744	.0057	.0017	.0446	.0028	.0000	0	.0000	1040	1296
		Delta	-41080	-.0159	-1.0896	-.0039	-.0001	-.0121	-.0013	+.0000	+0	+.0000	+0	+0
		Change%	-98.75	-31.65	-92.78	-68.13	-7.17	-27.00	-46.52	+0.00	+0.00	+0.00	+0.00	+0.00
17:25:00	DC01	Report	520	.0391	.1164	.0008	.0005	.0383	.0034	.0000	0	.0000	976	1296
	DC01	Baseline	41600	.0598	1.4905	.0011	.0005	.0587	.0059	.0000	0	.0000	976	1296
		Delta	-41080	-.0207	-1.3741	-.0003	-.0000	-.0204	-.0025	+.0000	+0	+.0000	+0	+0
		Change%	-98.75	-34.57	-92.19	-24.57	-4.68	-34.76	-42.01	+0.00	+0.00	+0.00	+0.00	+0.00
17:25:00	GLCT	Report	520	.0349	.0856	.0003	.0004	.0345	.0000	.0000	0	.0000	0	0
	GLCT	Baseline	41600	.0543	1.3972	.0005	.0004	.0538	.0023	.0000	0	.0000	0	0
		Delta	-41080	-.0194	-1.3115	-.0002	-.0000	-.0193	-.0023	+.0000	+0	+.0000	+0	+0
		Change%	-98.75	-35.81	-93.87	-38.40	-2.44	-35.79	-100.00	+0.00	+0.00	+0.00	+0.00	+0.00
17:25:00		Report	1560	.0361	.1164	.0010	.0008	.0351	.0016	.0000	0	.0000	672	864
		Baseline	124800	.0548	1.4905	.0024	.0009	.0524	.0037	.0000	0	.0000	672	864
		Delta	-123240	-.0187	-1.3741	-.0014	-.0001	-.0172	-.0020	+.0000	+0	+.0000	+0	+0
		Change%	-98.75	-34.09	-92.19	-59.54	-5.99	-32.91	-55.38	+0.00	+0.00	+0.00	+0.00	+0.00
Total		Report	1560	.0361	.1164	.0010	.0008	.0351	.0016	.0000	0	.0000	672	864
		Baseline	124800	.0548	1.4905	.0024	.0009	.0524	.0037	.0000	0	.0000	672	864
		Delta	-123240	-.0187	-1.3741	-.0014	-.0001	-.0172	-.0020	+.0000	+0	+.0000	+0	+0
		Change%	-98.75	-34.09	-92.19	-59.54	-5.99	-32.91	-55.38	+0.00	+0.00	+0.00	+0.00	+0.00

Figure 225. Transaction Profiling report (comparing several time intervals of report data with a single set of baseline data)

## Example 7: Identifying poorly performing transactions by time of day

This example identifies poorly performing transactions by comparing report data from SMF files with baseline data in an HDB that contains ideal, or expected, response times for each transaction ID.

As in the previous example, this Transaction Profiling report summarizes report data over time intervals, but summarizes the baseline data without time intervals. For each time interval of summarized report data, the Transaction Profiling report compares the average response time of each transaction ID with an average response time for that transaction ID from the summarized baseline data. The summarized baseline data consists only of two fields: the transaction IDs and their corresponding average response times, independent of any time intervals.

In this example, the baseline data is stored in an HDB named EXAMPLE. This HDB was loaded with data selected from a “good” day; its only purpose is to provide the expected results for this Transaction Profiling report.

The REPORT and CHANGE values of the PRINT operand instruct the report to print only the Report and Change% lines. THRESHOLD(25) sets the minimum threshold for changes at +25%. The EXCEPTIONSONLY value of the PRINT operand excludes from the report any blocks of report data where all of the change values are within the threshold. The Baseline Form specifies only a single non-key field, average response time, so EXCEPTIONSONLY causes the report to show blocks of report data only where the average response time is at least 25% higher than the expected value.

```
CICSPA IN(SMFIN001),
      PROFILING(REPORT(SMF),
                PRINT(REPORT,CHANGE,EXCEPTIONSONLY),
                INTERVAL(00:15:00),
                THRESHOLD(25),
                TITLE('Performance exceptions against saved baseline'),
                FIELDS(STOP(TIMES,ASCEND),
                      TRAN(ASCEND),
                      TASKCNT,
                      RESPONSE(AVE),
                      RESPONSE(MAX),
                      DISPATCH(TIME(AVE)),
                      CPU(TIME(AVE)),
                      SUSPEND(TIME(AVE)),
                      DISPWAIT(TIME(AVE)),
                      FCWAIT(TIME(AVE)),
                      FCAMCT(AVE),
                      IRWAIT(TIME(AVE)),
                      SC24UHWM(AVE),
                      SC31UHWM(AVE))),
      PROFILING(BASELINE(EXAMPLE),
                FIELDS(TRAN(ASCEND),
                      RESPONSE(AVE)))
```

Comparing report data and baseline data using a single non-key field enables you to produce a Transaction Profiling report that identifies a particular symptom, such as excessive response time. You can then examine the values of other fields in the report data to begin diagnosing the cause of the problem.

V5R2M0			CICS Performance Analyzer												
			Transaction Profiling												
PROF0001 Printed at 12:03:45 11/12/2013			Report	Data from 15:18:27	5/02/2006 to 17:31:01		5/02/2006		Page 1						
			Baseline	Data from 15:18:00	5/02/2006 to 17:31:00		5/02/2006								
Performance exceptions against saved baseline															
Stop Interval	Tran		#Tasks	Avg Response Time	Max Response Time	Avg Dispatch Time	Avg User Time	Avg CPU Time	Avg Suspend Time	Avg DispWait Time	FC Wait Time	Avg FCAMRq Count	Avg IR Wait Time	Avg SC24UHW Count	Avg SC31UHW Count
16:15:00	CLS1	Report	2	.5281	1.0407	.0052	.0019	.5228	.0018	.0000		0	.0000	0	0
	CLS1	Change%		+221.42											
17:15:00	CLQ2	Report	2	1.0209	1.0257	.0034	.0012	1.0175	.0042	.0000		0	.0000	0	0
	CLQ2	Change%		+49.64											
17:15:00	CQPI	Report	1	.0048	.0048	.0012	.0007	.0036	.0004	.0000		0	.0000	0	0
	CQPI	Change%		+72.82											
17:15:00	CQPO	Report	1	1.0137	1.0137	.0209	.0044	.9928	.0007	.0000		0	.0000	0	0
	CQPO	Change%		+94.86											

Figure 226. Transaction Profiling report (comparing exceptions with saved baseline data)

---

## CROSSsystem - Cross-System Work report and extract

The **CROSSsystem** operand requests the Cross-System Work report, the Cross-System Work extract, or both.

If the Extract is requested, a Recap report containing processing statistics is always printed at the end of extract processing.

The command format is:

```
CICSPA CROSSsystem(  
  Report options:  
    [PRINTMULTIPLE,]  
    [NOPRINTMULTIPLE,]  
    [PRINTSINGLE,]  
    [NOWRITE,]  
    [SELUOW(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...))]  
    [LINECount(nnn),]  
    [TITLE1('...up to 64 characters...'),]  
    [TITLE2('...up to 64 characters...'),]  
    TASKORDER(START|STOP)  
  Extract options:  
    [DDNAME(ddname),]  
    [SYSID(applid,mvsid),]  
    [WRITEMultiple,]  
    [NOWRITEMultiple,]  
    [WRITESingle,]  
    [NOPRINT,]  
    [CHARACTER(OWNER(owner),LENGTH(nnn),HEADER(header)),]  
    [CLOCK(OWNER(owner),NUMBER(nnn),HEADER(header)),]  
    [COMPRESS|NOCOMPRESS,]  
    [COUNT(OWNER(owner),NUMBER(nnn),HEADER(header)),]  
  Report and Extract options:  
    [OUTPUT(ddname),]  
    [EXTERNAL(ddname),]  
    [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...)),]
```

The Cross-System Work report can be tailored using the **LISTX** operand. This produces the Cross-System Work Extended report. For more information, see “LISTX - Performance List Extended report” on page 414.

### Report options

Options applicable to the Cross-System Work report (and not the extract) are:

#### PRINTMULTIPLE

Print only the transaction performance records consisting of units-of-work that include multiple CMF records. This is the default for the report.

#### **NOPRINTMULTIPLE**

Do not print the transaction performance records consisting of units-of-work that include multiple CMF records.

#### **PRINTSINGLE**

Print the transaction performance records consisting of units-of-work that include only a single CMF record. To get a listing containing these records only, you must suppress the default **PRINTMULTIPLE** option by specifying **NOPRINTMULTIPLE** as well.

#### **NOWRITE**

Do not produce an extract data set. This operand can be used to create the report without the extract.

**SELUOW(PERFORMANCE(INCLUDE|EXCLUDE**

Specifies what units-of-work to include or exclude from the report or extract based on data field values. If one task in a multi-task UOW matches the selection criteria, then all tasks for that UOW are selected.

It can be used in conjunction with SELECT to first filter out those tasks that you know are of no interest and thereby optimize the record sort process.

See “CROSSsystem examples” on page 474 for an example using SELECT and SELUOW.

**LINECOUNT**

Controls the number of lines per page for the Cross-System Work report. See “LINECount” on page 392 for further information.

**TITLE1, TITLE2**

Controls the title (left and right half of subheading line) of the Cross-System Work report. See “TITLE1 and TITLE2” on page 392 for further information.

**TASKORDER(START|STOP)**

Sorts tasks within each UOW in either descending order of stop time (the default) or ascending order of start time.

## Extract options

Options applicable to the Cross-System Work extract (and not the report) are:

**DDNAME**

This operand specifies the DDname of the output data set where the Cross-System Work extract is written. If not specified, CICS PA assigns the default DDname **CPAOXSYS**. The CICS PA dialog, however, assigns DDnames in the format **CPAOXSnn** where nn is the extract sequence number **01-99**. (See the sample JCL in Figure 188 on page 367).

**SYSID**

This operand specifies the APPLID and MVS ID to be written in each record of the extract data set. If not specified, CICS PA uses the default APPLID **MULTIPLE** and default MVS ID **CICS**.

**WRITEMultiple**

Write only the transaction performance records consisting of units-of-work that include multiple CMF records. This is the default for the extract.

**NOWRITEMultiple**

Do not write the transaction performance records consisting of units-of-work that include multiple CMF records.

**WRITESingle**

Write the transaction performance records consisting of units-of-work that include only a single CMF record. To get an extract containing these records only, you must suppress the default WRITEMultiple option by specifying **NOWRITEMultiple** as well.

**NOPRINT**

Do not print a Cross-System Work report. This operand can be used to create the Cross-System Work extract without the report.

**COMPRESS|NOCOMPRESS**

Determines whether CICS PA writes CICS SMF records to the extract file in

compressed or uncompressed format. This option applies whether the records in the input SMF file are compressed or not.

If you specify **COMPRESS**, CICS PA writes compressed CICS SMF records, regardless of the CICS release level that created the input records. Although CICS only introduced support for writing compressed SMF records in CICS Transaction Server Version 3.2, you can use CICS PA to create an extract file of compressed CICS SMF records for any CICS release supported by CICS PA. You can use extract files containing compressed SMF records as input to CICS PA, just like any other SMF file, even though the CICS product level that originally created those SMF records cannot write them in compressed format.

**CHARACTER(OWNER(owner), LENGTH(nnn), HEADER(ufldname))**

**CLOCK(OWNER(owner), NUMBER(nnn), HEADER(ufldname))**

**COUNT(OWNER(owner), NUMBER(nnn), HEADER(ufldname))**

Each user field to be included in the extract must be specified separately.

#### **CHARACTER**

A character type user field to be included in the extract.

#### **CLOCK**

A clock type user field to be included in the extract.

**Note:** A clock type field in a CMF record consists of two parts: elapsed time and a count of the number of times the condition occurred. When creating the Cross-System Work extract, **CLOCK** applies to both parts of the field.

#### **COUNT**

A count type user field to be included in the extract.

#### **OWNER**

The 1-8 character owner of the user field. This is the entry name in the DFHMCT ID= macro specification for the user field, or the CICS-assigned default name of 'USER'. CICS PA does not have a default owner name. Even if the owner name is USER, the OWNER operand must be specified.

#### **LENGTH**

Required with the CHARACTER operand. It specifies the length of the character user field on the Cross-System Work extract. If LENGTH is missing, the character user field will not be written. If the specified cross-system length is shorter than the original length, the value is truncated. If the cross-system length is longer than the original length, the value is padded with binary zeros. The maximum length that can be specified is 256.

#### **NUMBER**

The clock or count to be included in the extract (of the 256 clocks and 256 counts that can be defined for this owner).

#### **HEADER**

The eight-character informal field name. If not specified, CICS PA uses the default value *USER*. This is placed in the CMF dictionary of the Cross-System Work extract and can be used in subsequent reporting. For example, if you produce the CICS PA Performance List, Performance List Extended and Performance Summary reports from the Cross-System Work extract data set, *ufldname* is used as the column heading for the user fields in the reports.



## Report and extract options

Options that apply to both the Cross-System Work report and extract are:

### OUTPUT

Controls the report output DDname. See "OUTPUT" on page 390 for further information. If not specified, CICS PA assigns a DDname in the format **xxxxnnnn** where **nnnn** is the report sequence number **0001-9999** to uniquely identify the output, and **xxxx** is:

- **CROS** for the Cross-System Work report
- **CROX** for the Recap report for the Cross-System Work extract

### EXTERNAL

Specifies the DDname for the work data set used by the external SORT facility. If not specified, CICS PA assigns an External Work File from a pool of External Work Files with DDnames in the format **CPAXWnnn** where **nnn** is the sequence number **001-999**. See "EXTERNAL" on page 391 for further information.

### SELECT(PERFORMANCE(INCLUDE|EXCLUDE

Specifies what data to include or exclude from the report or extract based on data field values. See "Using SELECT statements" on page 525 for an explanation and examples.

If used in conjunction with SELUOW, it does not impact reporting but rather is a first-level pre-sort filter. The purpose of SELECT in this case is to exclude the records that you know are of no interest and thereby reduce the volume of records to be sorted for reporting. It is suitable, for example, for time range checking and selecting all possible transaction IDs of interest.

## CROSSsystem examples

Example 1: Default report and extract

```
CICSPA CROSS
```

Example 2:

The report and extract data sets generated in this example contain all performance records, both from network units of work consisting of multiple CMF records and from units of work consisting of a single CMF record. The specified CHARACTER-type and CLOCK-type user fields are added to the output record.

The extract is written to DDname CPAOXSYS. The report is written to CROS0001, if this is the first Cross-System Work report, and the Recap is written to CROX0001.

```
CICSPA CROSS(PRINTM,PRINTS,WRITE,WRITES,  
              CHARACTER(OWNER(USER),LENGTH(8),HEADER(MINE)),  
              CLOCK(OWNER(USER),NUMBER(2),HEADER(CLOCK2)))
```

Example 3:

To print records from a network unit-of-work containing single and multiple records, use the following command:

```
CICSPA CROSS(PRINTM,PRINTS,NOWRITE,OUTPUT(CROS0001))
```



This produces a report containing information like that shown in Figure 227.

V5R2M0						CICS Performance Analyzer												
						Cross-System Work												
CROS0001 Printed at 12:03:45 11/12/2013 Data from 11:10:29 2/04/2005 to 11:33:51 2/04/2005																	Page	7
Tran	Userid	SC	TranType	Term	LUName	Request Type	Program	Fcty T/Name	Conn Name	NETName	UOW Seq	APPLID	Task T	Stop Time	Response Time	A B		
PAY1	BRENNER	TP	U		S23C	IGCS23C	AP: DFH0PAY1	T/S23C		GBIBMIYA.IGCS23C	1	IYK2Z1V3	197	T 11:18:14.419	.0861			
----	SALE	BRENNER	U	U	R		AP: DFH0SAL2			GBIBMIYA.IGCS23C	1	IYK2Z1V3	198	T 11:18:14.417	.0821			
----	CSAC	BRENNER	TO	U		S23C	IGCS23C	AP: DFHACP	T/S23C		GBIBMIYA.IGCS23C	1	IYK2Z1V3	203	T 11:18:22.466	.0020		
----	CBAM	BRENNER	TO	U		S23C	IGCS23C	AP: DFHECBAM	T/S23C		GBIBMIYA.IGCS23C	1	IYK2Z1V3	204	T 11:18:36.466	11.0373		
----	MENU	BRENNER	TO	U		S23C	IGCS23C	AP: DFH0SALO	T/S23C		GBIBMIYA.IGCS23C	1	IYK2Z1V3	208	T 11:18:40.026	.0023		
----	SALE	BRENNER	U	U	R		AP: DFH0SAL2			GBIBMIYA.IGCS23C	1	IYK2Z1V3	212	T 11:18:47.793	.6282			
	STOC	BRENNER	U	U	R		AP: DFHOSTOC			GBIBMIYA.IGCS23C	1	IYK2Z1V3	214	T 11:18:47.792	.6072			
	RED1	BRENNER	U	U	R		AP: DFH0RED1			GBIBMIYA.IGCS23C	1	IYK2Z1V3	213	T 11:18:47.789	.6162			
	SAL1	BRENNER	TP	U		S23C	IGCS23C	AP: DFH0SAL1	T/S23C		GBIBMIYA.IGCS23C	1	IYK2Z1V3	211	T 11:18:47.270	.1222		
----	SAL1	BRENNER	TP	U		S23C	IGCS23C	AP: DFH0SAL1	T/S23C		GBIBMIYA.IGCS23C	1	IYK2Z1V3	218	T 11:18:49.567	.0022		
----	CBAM	BRENNER	TO	U		S23C	IGCS23C	AP: DFHECBAM	T/S23C		GBIBMIYA.IGCS23C	1	IYK2Z1V3	221	T 11:19:30.467	38.9944		
----	MENU	BRENNER	TO	U		S23C	IGCS23C	AP: DFH0SALO	T/S23C		GBIBMIYA.IGCS23C	1	IYK2Z1V3	233	T 11:19:33.364	.0023		
----	SALE	BRENNER	U	U	R		AP: DFH0SAL2			GBIBMIYA.IGCS23C	1	IYK2Z1V3	240	T 11:19:41.002	.8246			
----																		

Figure 227. Cross-System Work report (UOWs with single and multiple records)

Example 4:

This command produces a report like that shown in Figure 228 which only shows the transaction performance records that are contained in a network unit-of-work that includes only a single record.

CICSPA CROSS(PRINTS,NOPRINTM,NOWRITE)

V5R2M0					CICS Performance Analyzer											
					Cross-System Work											
CROS0001 Printed at 12:03:45 11/12/2013 Data from 11:10:29 2/04/2005 TO 11:33:51 2/04/2005														Page	8	
Tran	Userid	SC	TranType	Term	LUName	Request Type	Program	Fcty T/Name	Conn Name	NETName	UOW Seq	APPLID	Task T	Stop Time	Response Time	A B
CALL	BRENNER	TO	U		S23D	IGCS23D	AP: CALLJT1	T/S23D		GBIBMIYA.IGCS23D	1	IYK2Z1V1	196	T 11:22:57.345	2.1853	
----																
CALL	BRENNER	TO	U		S23D	IGCS23D	AP: CALLJT1	T/S23D		GBIBMIYA.IGCS23D	1	IYK2Z1V1	251	T 11:30:08.310	2.1249	
----																
CESF	BRENNER	TO	U		S23D	IGCS23D	AP: DFHSFP	T/S23D		GBIBMIYA.IGCS23D	1	IYK2Z1V1	268	T 11:32:03.467	.0040	
----																
CESN	CBAKER	S	U		P012	IG2ZP012	AP: DFHSNP	T/P012		GBIBMIYA.IG2ZP012	1	IYK2Z1V1	58	T 11:12:54.056	.0034	
----																
CESN	CBAKER	TP	U		P012	IG2ZP012	AP: DFHSNP	T/P012		GBIBMIYA.IG2ZP012	1	IYK2Z1V1	60	T 11:13:19.394	.0166	
----																
CALL	CBAKER	TO	U		P012	IG2ZP012	AP: CALLJT1	T/P012		GBIBMIYA.IG2ZP012	1	IYK2Z1V1	238	T 11:28:57.007	2.1389	
----																
CALL	CBAKER	TO	U		P012	IG2ZP012	AP: CALLJT1	T/P012		GBIBMIYA.IG2ZP012	1	IYK2Z1V1	246	T 11:29:41.833	2.1265	
----																
CQRY	CBAKER	S	U		P015	IG2ZP015	AP: DFHQRY	T/P015		GBIBMIYA.IG2ZP015	1	IYK2Z1V3	50	T 11:12:53.875	18.3021	
----																
CESN	CBAKER	S	U		P015	IG2ZP015	AP: DFHSNP	T/P015		GBIBMIYA.IG2ZP015	1	IYK2Z1V3	53	T 11:12:55.370	.0021	
----																
CESN	CBAKER	TP	U		P015	IG2ZP015	AP: DFHSNP	T/P015		GBIBMIYA.IG2ZP015	1	IYK2Z1V3	62	T 11:14:05.802	.0273	
----																
CEMT	CBAKER	TO	U		P015	IG2ZP015	AP: DFHEMP	T/P015		GBIBMIYA.IG2ZP015	1	IYK2Z1V3	64	T 11:16:46.019	144.153	
----																
AMNU	CBAKER	TO	U		P015	IG2ZP015	AP: DFHSAMNU	T/P015		GBIBMIYA.IG2ZP015	1	IYK2Z1V3	138	T 11:16:47.866	.0327	
----																
ABRW	CBAKER	TO	U		P015	IG2ZP015	AP: DFHSABRW	T/P015		GBIBMIYA.IG2ZP015	1	IYK2Z1V3	139	T 11:16:51.568	.6982	
----																
ABRW	CBAKER	TP	U		P015	IG2ZP015	AP: DFHSABRW	T/P015		GBIBMIYA.IG2ZP015	1	IYK2Z1V3	140	T 11:16:52.068	.0018	
----																

Figure 228. Cross-System Work report (UOWs with a single record)

Example 5:

The following command creates the Cross-System Work extract while the Cross-System Work report is suppressed. The extract is created using all the performance records. The performance records contained in a network unit-of-work that includes only a single record, as well as multiple records, are written to the extract data set specified in the default DD statement **CPAOXSYS**.

```
CICSPA CROSS(NOPRINT,WRITE,WRITES)
```

#### Example 6:

The following command is an example of how to include user fields from the input data set in the output extract data set.

```
CICSPA CROSS(
    COUNT(OWNER(USER),NUMBER(001),HEADER(MYCOUNT1)),
    CHARACTER(OWNER(USER),LENGTH(40)))
```

#### Example 7:

It can be very useful to analyze the performance data from the Cross-System Work extract. This data can provide an insight into the total resources used by a transaction and shows information such as the accumulated dispatch, CPU, and wait times as well as the five user fields added by CICS PA.

Figure 229 on page 477 shows a Performance List report created from a Cross-System Work extract data set. To create a similar report, use the following command:

```
CICSPA LIST(FIELDS(TRAN,TASKNO,STOP(TIMES),RESPONSE,
    DISPATCH,CPU,SUSPEND,DISPWAIT,
    IRWAIT(COUNT),RMISUSP(COUNT),
    COUNT(OWNER(CICSPA),NUMBER(1)),
    COUNT(OWNER(CICSPA),NUMBER(2)),
    COUNT(OWNER(CICSPA),NUMBER(3)),
    COUNT(OWNER(CICSPA),NUMBER(4)),
    COUNT(OWNER(CICSPA),NUMBER(5))))
```

LIST0001 Printed at 12:03:45 11/12/2013 Data from 11:20:53 2/04/2004 APPLID MULTIPLE PAGE 1

Tran	TaskNo	Stop	Response	Dispatch	User	CPU	Suspend	DispWait	IRWait	RMIsusp	TotRecs	ApplRecs	TranRout	FuncShip	DplRecs
		Time	Time	Time	Time	Time	Time	Time	Count	Count					
ABRW	157	11:20:53	.0079	.0058	.0042	.0062	.0000	.0000	13	0	2	1	0	1	0
ABRW	160	11:20:54	.0074	.0051	.0038	.0063	.0000	.0000	13	0	2	1	0	1	0
ABRW	161	11:20:55	.0060	.0040	.0037	.0059	.0000	.0000	13	0	2	1	0	1	0
ABRW	162	11:20:56	.0069	.0047	.0036	.0063	.0000	.0000	13	0	2	1	0	1	0
ABRW	163	11:20:59	.0028	.0027	.0015	.0001	.0000	.0000	0	0	1	1	0	0	0
ABRW	164	11:21:05	.0146	.0044	.0036	.0146	.0000	.0000	11	0	2	1	0	1	0
ABRW	165	11:21:07	.0014	.0012	.0010	.0002	.0000	.0000	0	0	1	1	0	0	0
ABRW	166	11:21:11	.0062	.0045	.0034	.0050	.0000	.0000	11	0	2	1	0	1	0
ABRW	167	11:21:13	.0053	.0037	.0034	.0053	.0000	.0000	13	0	2	1	0	1	0
ABRW	168	11:21:15	.0073	.0051	.0038	.0065	.0000	.0000	13	0	2	1	0	1	0
ABRW	169	11:21:17	.0124	.0084	.0048	.0112	.0001	.0001	13	0	2	1	0	1	0
ABRW	170	11:21:19	.0085	.0054	.0040	.0083	.0000	.0000	13	0	2	1	0	1	0
ABRW	171	11:21:22	.0069	.0047	.0037	.0061	.0000	.0000	13	0	2	1	0	1	0
ABRW	172	11:21:23	.0065	.0048	.0037	.0053	.0000	.0000	13	0	2	1	0	1	0
ABRW	173	11:21:25	.0067	.0046	.0041	.0066	.0000	.0000	13	0	2	1	0	1	0
ABRW	175	11:21:27	.0097	.0078	.0043	.0062	.0000	.0000	13	0	2	1	0	1	0
ABRW	176	11:21:29	.0085	.0060	.0041	.0071	.0001	.0001	13	0	2	1	0	1	0
ABRW	177	11:21:30	.0071	.0052	.0040	.0059	.0000	.0000	13	0	2	1	0	1	0
ABRW	179	11:21:33	.0061	.0043	.0034	.0046	.0000	.0000	7	0	2	1	0	1	0
ABRW	180	11:21:35	.0022	.0021	.0012	.0001	.0000	.0000	0	0	1	1	0	0	0
AUPD	181	11:21:42	.0041	.0033	.0024	.0016	.0000	.0000	1	0	2	1	0	1	0
AUPD	182	11:21:45	.0024	.0023	.0013	.0001	.0000	.0000	0	0	1	1	0	0	0
AADD	183	11:21:51	.0022	.0022	.0012	.0001	.0000	.0000	0	0	1	1	0	0	0
AADD	184	11:21:58	.0023	.0022	.0013	.0001	.0000	.0000	0	0	1	1	0	0	0
7INQ	185	11:22:06	.0034	.0026	.0019	.0008	.0000	.0000	0	0	1	1	0	0	0
AINQ	186	11:22:08	.0012	.0011	.0010	.0001	.0000	.0000	0	0	1	1	0	0	0
AINQ	187	11:22:14	.0040	.0035	.0026	.0014	.0000	.0000	1	0	2	1	0	1	0
AMNU	188	11:22:17	.0027	.0026	.0012	.0001	.0000	.0000	0	0	1	1	0	0	0
VINQ	189	11:22:25	.0025	.0024	.0015	.0001	.0000	.0000	0	0	1	1	0	0	0
BINQ	190	11:22:26	.0027	.0027	.0015	.0001	.0000	.0000	0	0	1	1	0	0	0
BING	191	11:22:28	.0024	.0023	.0016	.0001	.0000	.0000	0	0	1	1	0	0	0
CEMT	193	11:22:38	2.7279	.0150	.0094	2.7129	.0000	.0000	0	0	4	4	0	0	0
CEMT	194	11:22:59	19.8433	.0617	.0466	19.7816	.0002	.0002	0	0	12	12	0	0	0
CECI	199	11:23:12	8.5587	.4264	.0720	8.1323	.0206	.0206	0	0	10	10	0	0	0
CECI	200	11:23:21	6.7952	.0159	.0061	6.7792	.0001	.0001	0	0	6	6	0	0	0
CECI	201	11:23:37	13.5524	.2257	.1508	13.3267	.0007	.0007	0	0	43	43	0	0	0
CEDA	202	11:24:05	13.1845	2.0588	1.3244	11.1257	.0107	.0107	0	0	73	73	0	0	0
CESF	271	11:32:58	.0039	.0037	.0029	.0002	.0001	.0001	0	0	1	1	0	0	0
CQRY	122	11:15:48	.2205	.0040	.0015	.2165	.0000	.0000	0	0	1	1	0	0	0

Figure 229. Example of a Performance List report from a Cross-System Work extract data set

## Example 8:

Consider that when investigating a problem you know that a transaction had poor response time. You then want to investigate all the activity for units-of-work that involve this poor performing transaction. By specifying selection criteria using SELUOW, the Cross-System Work report can give you all transactions associated with the UOWs that the particular transaction was a part of.

In this example, SELECT is used to provide first-level pre-sort filtering of records. Then SELUOW provides second-level post-sort filtering of units-of-work.

```

CICSPA IN(SMFIN001),
        LINECOUNT(58),
        SELECT(PERFORMANCE(INCL(
            TRAN(STOK,CSMI),
            START(FROM(09:30),TO(09:45))))),
        CROSS(PRINTM,NOWITEM,
            SELUOW(PERFORMANCE(INCL(
                RESP(>0.5),
                TRAN(STOK)))))

```

SELECT will pre-filter the performance records (tasks). Only tasks with a transaction ID of STOK or CSMI that started between 9:30 and 9:45 are included. Note that this first SELECT does not impact reporting. Its purpose is to exclude records you know will never be required for reporting, ensuring that the record sort process is optimized.

SELUOW will post-filter the UOWs. Entire UOWs are reported only when one of the tasks in the UOW has a transaction ID of STOK and a response time greater than 0.5 seconds.

---

## TRANGROUP - Transaction Group report

The **TRANGROUP** operand requests the Transaction Group report.

The command format is:

```
CICSPA TRANGROUP(
    [OUTPUT(ddname),]
    [EXTERNAL(ddname),]
    [PRINTMULTIPLE,]
    [NOPRINTMULTIPLE,]
    [PRINTSINGLE,]
    [LINECount(nnn),]
    [TITLE1('...up to 64 characters...'),]
    [TITLE2('...up to 64 characters...'),]
    [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),
        ...))])
```

The options are:

### OUTPUT

Controls the report output DDname. If not specified, CICS PA assigns a DDname in the format **TRGPnnnn** where nnnn is the report sequence number **0001-9999**. See “OUTPUT” on page 390 for further information.

### EXTERNAL

Specifies the DDname for the work data set used by the external SORT facility. If not specified, CICS PA assigns an External Work File from a pool of External Work Files with DDnames in the format **CPAXWnnn** where nnn is the sequence number **001-999**. See “EXTERNAL” on page 391 for further information.

### PRINTMULTIPLE

Print only the transaction performance records consisting of units-of-work that include multiple CMF records. This is the default condition when creating the report.

### NOPRINTMULTIPLE

Do not print the transaction performance records consisting of units-of-work that include multiple CMF records.

### PRINTSINGLE

Print the transaction performance records consisting of units-of-work that include only a single CMF record. To get a listing containing these records only, you must suppress the default PRINTMULTIPLE option by specifying NOPRINTMULTIPLE as well.

### LINECOUNT

Controls the number of lines per page. See “LINECount” on page 392 for further information.

### TITLE1, TITLE2

Controls the report title (left and right half of subheading line). See “TITLE1 and TITLE2” on page 392 for further information.

## SELECT(PERFORMANCE(INCLUDE|EXCLUDE

Specifies what data to include or exclude from the report based on data field values. See “Using SELECT statements” on page 525 for a detailed explanation and examples.

## TRANGROUP examples

### Example 1: Default report (PRINTM only)

The default is to report task performance records contained in a transaction group that includes multiple CMF records.

CICSPA TRANGROUP

### Example 2: All (both PRINTM and PRINTS)

This example shows how to generate a Transaction Group report containing all performance class records, both from transaction groups consisting of multiple CMF records and from transaction groups consisting of a single CMF record.

CICSPA TRANGROUP(PRINTM,PRINTS)

This creates a report like that shown in Figure 230.

CICS Performance Analyzer													
Transaction Group													
V5R2M0													
TRGP0001 Printed at 12:03:45 11/12/2013 Data from 11:10:29 2/04/2005 to 11:33:51 2/04/2005													
												Page	41
Tran	Userid	SC	Origin	Brdg	Client	Request	Program	Term	LUName	Fcty	Conn	R	Response
				Tran	IP Address	Type				T/Name	Name	Task	Time
SALE	BRENNER	U	SCHEDULE			AP:	DFH0SAL2				IYK2Z1V3	268 T	11:19:52.38 .0399
SALE	BRENNER	U	SCHEDULE			AP:	DFH0SAL2				IYK2Z1V3	279 T	11:19:57.58 .0683
REM1	BRENNER	U	SCHEDULE			AP:	DFH0REM1				IYK2Z1V3	281 T	11:19:57.60 .0231
SALE	BRENNER	U	SCHEDULE			AP:	DFH0SAL2				IYK2Z1V3	282 T	11:19:57.64 .0405
STAT	CBAKER	TO	BRIDGE	CWBA		AP:	DFH0STAT	CAAE	CAAE	B/CAAE	IYK2Z1V3	292 T	11:20:12.04 10.5089
CWBA	CBAKER	U	WEB		9.20.30.232	AP:	DFHWBTTA				IYK2Z1V3	291 T	11:20:01.65 .1188
CWXN	CBAKER	U	SOCKET		9.20.30.232	AP:	DFHWPBXN				IYK2Z1V3	290 T	11:20:01.54 .0169
SALE	BRENNER	U	SCHEDULE			AP:	DFH0SAL2				IYK2Z1V3	293 T	11:20:02.81 .0568
SALE	BRENNER	U	SCHEDULE			AP:	DFH0SAL2				IYK2Z1V3	296 T	11:20:04.33 .1340
SALE	BRENNER	U	SCHEDULE			AP:	DFH0SAL2				IYK2Z1V3	297 T	11:20:04.33 .1326
CWBA	CBAKER	U	WEB		9.20.30.232	AP:	DFHWPBTTA				IYK2Z1V3	299 T	11:20:07.37 1.0015
CWXN	CBAKER	U	SOCKET		9.20.30.232	AP:	DFHWPBXN				IYK2Z1V3	298 T	11:20:06.38 .3103
CWBA	CBAKER	U	WEB		9.20.30.232	AP:	DFHWPBTTA				IYK2Z1V3	302 T	11:20:12.04 .0423
CWXN	CBAKER	U	SOCKET		9.20.30.232	AP:	DFHWPBXN				IYK2Z1V3	301 T	11:20:12.01 .2331
CZUX	CBAKER	QD	TDQUEUE			AP:	DFH0VZUX			D/CSZX	IYK2Z1V3	304 T	11:20:19.36 .0078
SALE	BRENNER	U	SCHEDULE			AP:	DFH0SAL2				IYK2Z1V3	307 T	11:20:20.34 .7041
SALE	BRENNER	U	SCHEDULE			AP:	DFH0SAL2				IYK2Z1V3	308 T	11:20:20.43 .7920
CWXN	CBAKER	U	SOCKET		9.20.30.232	AP:	DFHWPBXN				IYK2Z1V3	331 T	11:34:12.76 782.697
CEMT	CBAKER	TO	BRIDGE	CWBA		AP:	DFHEMTT	CAAG	CAAG	B/CAAG	IYK2Z1V3	354 T	11:21:55.38 13.3797
CWBA	CBAKER	U	WEB		9.20.30.232	AP:	DFHWPBTTA				IYK2Z1V3	353 T	11:21:42.10 .0986
CWBA	CBAKER	U	WEB		9.20.30.232	AP:	DFHWPBTTA				IYK2Z1V3	332 T	11:21:10.12 .0529
CWXN	CBAKER	U	SOCKET		9.20.30.232	AP:	DFHWPBXN				IYK2Z1V3	333 T	11:25:52.65 282.577
CWBA	CBAKER	U	WEB		9.20.30.232	AP:	DFHWPBTTA				IYK2Z1V3	351 T	11:21:32.85 .0378
CWBA	CBAKER	U	WEB		9.20.30.232	AP:	DFHWPBTTA				IYK2Z1V3	334 T	11:21:10.12 .0485
CZUX	CBAKER	QD	TDQUEUE			AP:	DFH0VZUX			D/CSZX	IYK2Z1V3	340 T	11:21:19.48 .0240
CITS	CBAKER	U	NONE			AP:	DFHZATS				IYK2Z1V3	350 T	11:21:31.67 .0063

Figure 230. Transaction Group report (using PRINTS,PRINTM)

---

## BTS - BTS report

The **BTS** operand requests the CICS Business Transaction Services report.

The command format is:

```
CICSPA BTS(
    [OUTPUT(ddname),]
    [EXTERNAL(ddname),]
    [LINECount(nnn),]
    [TITLE1('...up to 64 characters...'),]
    [TITLE2('...up to 64 characters...'),]
    [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),
        ...))])
```

The options are:

### OUTPUT

Controls the report output DDname. If not specified, CICS PA assigns a DDname in the format **CBTSnnnn** where nnnn is the report sequence number **0001-9999**. See “OUTPUT” on page 390 for further information.

### EXTERNAL

Specifies the DDname for the work data set used by the external SORT facility. If not specified, CICS PA assigns an External Work File from a pool of External Work Files with DDnames in the format **CPAXWnnn** where nnn is the sequence number **001-999**. See “EXTERNAL” on page 391 for further information.

### LINECOUNT

Controls the number of lines per page. See “LINECount” on page 392 for further information.

### TITLE1, TITLE2

Controls the report title (left and right half of subheading line). See “TITLE1 and TITLE2” on page 392 for further information.

### SELECT(PERFORMANCE(INCLUDE|EXCLUDE

Specifies what data to include or exclude from the report based on data field values. See “Using SELECT statements” on page 525 for a detailed explanation and examples.

## BTS examples

Example 1: Default report

```
CICSPA BTS
```

Tran	SC	TranType	Process Name	Process Type	Activity Name	Pro/Act Reqs	Cont'er Reqs	Event Reqs	R Task T	Stop Time	Response Time
SAL1	TP	U				2	2	0	146	T 11:17:04.85	.6881
PAY1	TP	U				2	0	0	160	T 11:17:12.21	.2010
SAL1	TP	U				2	2	0	174	T 11:17:53.63	.1657
PAY1	TP	U				2	0	0	197	T 11:18:14.42	.0861
SAL1	TP	U				2	2	0	211	T 11:18:47.27	.1222
SAL1	TP	U				2	2	0	239	T 11:19:40.33	.1835
PAY1	TP	U				2	0	0	294	T 11:20:04.20	.1390
PAY1	TP	U				2	0	0	305	T 11:20:19.64	.0747
RED1	U	U	R SALES111111	ORDER	CREDIT-CHECK	0	2	1	176	T 11:17:54.05	.5333
STOC	U	U	R SALES111111	ORDER	STOCK-CHECK	0	2	1	177	T 11:17:54.05	.5145
SALE	U	U	R SALES111111	ORDER	DFHROOT	10	5	4	175	T 11:17:54.05	.5675
INV1	U	U	SALES111111	ORDER	INVOICE-BUILD	0	1	1	178	T 11:17:54.09	.0359
DEL1	U	U	SALES111111	ORDER	DELIV-NOTE	0	1	1	179	T 11:17:55.29	1.2323
SALE	U	U	SALES111111	ORDER	DFHROOT	0	0	0	180	T 11:17:55.31	1.2198
SALE	U	U	SALES111111	ORDER	DFHROOT	1	3	2	183	T 11:17:55.37	.0800
SALE	U	U	SALES111111	ORDER	DFHROOT	1	3	5	184	T 11:17:55.42	.0519
SALE	U	U	SALES111111	ORDER	DFHROOT	2	2	1	186	T 11:18:00.65	.0566
REM1	U	U	SALES111111	ORDER	SEND-REMINDER	0	1	1	187	T 11:18:00.68	.0243
SALE	U	U	SALES111111	ORDER	DFHROOT	1	0	3	188	T 11:18:00.72	.0389
SALE	U	U	SALES111111	ORDER	DFHROOT	2	2	1	191	T 11:18:05.92	.0826
REM1	U	U	SALES111111	ORDER	SEND-REMINDER	0	1	1	192	T 11:18:05.96	.0367
SALE	U	U	SALES111111	ORDER	DFHROOT	1	0	3	193	T 11:18:06.04	.0824
SALE	U	U	SALES111111	ORDER	DFHROOT	2	2	1	194	T 11:18:11.13	.0463
REM1	U	U	SALES111111	ORDER	SEND-REMINDER	0	1	1	195	T 11:18:11.16	.0282
SALE	U	U	SALES111111	ORDER	DFHROOT	1	0	3	196	T 11:18:11.20	.0437
SALE	U	U	R SALES111111	ORDER	DFHROOT	0	1	3	198	T 11:18:14.42	.0821
SALE	U	U	SALES111111	ORDER	DFHROOT	0	0	0	199	T 11:18:15.03	.6101

Figure 231. BTS report

## WORKLOAD - Workload Activity report

The **WORKLOAD** or **WLM** operand requests the Workload Activity report.

The command format is:

```
CICSPA WORKLOAD(
    [OUTPUT(ddname),]
    [EXTERNAL(ddname),]
    [SUMMARY[(EXE)],]
    [LIST,]
    [PEAK(percentile),]
    TASKORDER(START|STOP)
    [LINECount(nnn),]
    [TITLE1('...up to 64 characters...'),]
    [TITLE2('...up to 64 characters...'),]
    [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),
        ...))])
```

The options are:

### OUTPUT

Controls the report output DDname. If not specified, CICS PA assigns a DDname in the format **WKLDnnnn** where nnnn is the report sequence number **0001-9999**. See “OUTPUT” on page 390 for further information.

### EXTERNAL

Specifies the DDname for the work data set used by the external sort facility. If not specified, CICS PA assigns an External Work File from a pool

of External Work Files with DDnames in the format **CPAXWnnn** where nnn is the sequence number **001-999**. See “EXTERNAL” on page 391 for further information.

An external sort is not required when only a summary report of BTE transactions is requested.

#### **SUMMARY**

Requests the Workload Manager Activity Summary report.

Specify **EXE** to summarize transactions in both EXE (execution) Y and BTE (begin-to-end) phases, otherwise only BTE transactions are listed.

**LIST** Requests the Workload Manager Activity List report, a detailed list of BTE, EXE Y and EXE N transaction activity.

#### **PEAK(percentile)**

Applies to transaction response times in the Workload Activity Summary report and is useful for monitoring service levels. Specify a number between 50 and 100 to report the response time within which that percentage of transactions completed. Computations assume a normal distribution. For example, specify 95 to determine the response time that 95% of transactions completed within. The default is **90**.

#### **TASKORDER(START|STOP)**

In the Workload Manager Activity List report, sorts tasks within each UOW in either descending order of stop time (the default) or ascending order of start time.

#### **LINECOUNT**

Controls the number of lines per page. See “LINECount” on page 392 for further information.

#### **TITLE1, TITLE2**

Controls the report title (left and right half of subheading line). See “TITLE1 and TITLE2” on page 392 for further information.

#### **SELECT(PERFORMANCE(INCLUDE|EXCLUDE**

Specifies what data to include or exclude from the report based on data field values. See “Using SELECT statements” on page 525 for a detailed explanation and examples.

## **WORKLOAD examples**

### Example 1: Default report

This is the Summary report showing BTE work only.

CICSPA WORKLOAD

The following command achieves the same:

CICSPA WORKLOAD(SUMMARY)

### Example 2: Both BTE and EXE transactions

This example produces a Summary report showing both BTE and EXE transactions like that shown in Figure 232 on page 483.

CICSPA WORKLOAD(SUMMARY(EXE)



V5R2M0

CICS Performance Analyzer  
Workload Manager Activity Summary by Service Class

WKLD0001 Printed at 12:03:45 11/12/2013 Data from 15:47:53 6/01/2004 to 15:58:53 6/01/2004 Page 1

Service Class	APPLID	Phase	#Tasks	Response Time			
				Average	Std Dev	90% Peak	Maximum
FINSCLAS	CICPTOR1	BTE	176	.5665	.4369	.8753	1.3745
	CICPAOR1	EXE	169	.5239	.4564	.8280	1.1684
STOSCLAS	CICPTOR1	BTE	2123	.9265	.3981	1.2675	2.0246
	CICPAOR1	EXE	2078	.8639	.3627	1.1927	1.8327
QUIKSERV	CICPAOR1	BTE	5476	.3846	.1976	.4673	.6571
LONGSERV	CICPAOR1	BTE	1958	1.5861	.8392	2.2179	5.5094
* Grand Total	*	BTE	9733	.6853	.4812	1.3718	2.0246
* Grand Total	*	EXE	2247	.8047	.3927	0.9201	5.5094

V5R2M0

CICS Performance Analyzer  
Workload Manager Activity Summary by Report Class

WKLD0001 Printed at 12:03:45 11/12/2013 Data from 15:47:53 6/01/2004 to 15:58:53 6/01/2004 Page 2

Report Class	APPLID	Phase	#Tasks	Response Time			
				Average	Std Dev	90% Peak	Maximum
FINSCLAS	CICPTOR1	BTE	176	.5665	.4369	.8753	1.3745
	CICPAOR1	EXE	169	.5239	.4564	.8280	1.1684
STOSCLAS	CICPTOR1	BTE	2123	.9265	.3981	1.2675	2.0246
	CICPAOR1	EXE	2078	.8639	.3627	1.1927	1.8327
QUIKSERV	CICPAOR1	BTE	5476	.3846	.1976	.4673	.6571
LONGSERV	CICPAOR1	BTE	1958	1.5861	.8392	2.2179	5.5094
* Grand Total	*	BTE	9733	.6853	.4812	1.3718	2.0246
* Grand Total	*	EXE	2247	.8047	.3927	0.9201	5.5094

Figure 232. Workload Activity report (Summary report)

### Example 3: Workload List report only

This example produces only the List report (not the Summary) like that shown in Figure 233.

CICSPA WORKLOAD(LIST)

V5R2M0

CICS Performance Analyzer  
Workload Manager Activity List

WKLD0001 Printed at 12:03:45 11/12/2013 Data from 15:47:53 2/01/2005 to 15:58:53 2/01/2005 Page 1

Tran	Userid	SC	TranType	Term	LUName	Request Type	Program	Fcty T/Name	Conn Name	Service Class	Report Class	APPLID	Task	T	P	C	Stop Time	Response Time	A B
FINA	STEVEP	TP			<AAK	CICPTOR1 AP:	FINANCE	S/0005	53T1	FINSCLAS	FINRCLAS	CICPAOR1	44	T	EXE	Y	15:57:53.92	.5239	
FINS	STEVEP	TP			0005	TCP00005 TR:AOR1		T/0005		FINSCLAS	FINRCLAS	CICPTOR1	73	T	BTE		15:57:53.93	.5612	
STOA	SHIRLEY	TP			<AAK	CICPTOR1 AP:	STOCK	S/0006	53T1	STOSCLAS	STORCLAS	CICPAOR1	46	T	EXE	Y	15:57:54.01	.8574	
STOS	SHIRLEY	TP			0006	TCP00006 TR:AOR1		T/0006		STOSCLAS	STORCLAS	CICPTOR1	78	T	BTE		15:57:54.02	.9123	
ORDQ	SYLVIA	TO			0011	TCP00011 AP:	ORDRINQ	T/0011		QUIKSERV	QUIKSERV	CICPAOR1	79	T	BTE		15:57:55.12	.3762	
ORDQ	JOHNX	TO			0012	TCP00012 AP:	ORDRINQ	T/0012		QUIKSERV	QUIKSERV	CICPAOR1	82	T	BTE		15:50:55.23	.4321	
ORDU	SYLVIA	TO			0011	TCP00011 AP:	ORDRUPD	T/0011		LONGSERV	LONGSERV	CICPAOR1	98	T	BTE		15:54:56.13	1.4581	
ORDU	JOHNX	TO			0012	TCP00012 AP:	ORDRUPD	T/0012		LONGSERV	LONGSERV	CICPAOR1	109	T	BTE		15:58:56.17	1.2394	

Figure 233. Workload Activity report (List report)

## TRACKINGLIST - Transaction Tracking List report

The **TRACKINGLIST** operand requests the Transaction Tracking List report. This report combines CMF records for each originating transaction and its subordinate (group) transactions. Group transactions are identified by sharing the same transaction group ID with other transactions or by having a PHCOUNT > 0.

The command format is:

```

CICSPA TRACKINGLIST(
    [OUTPUT(ddname),]
    [EXTERNAL(ddname),]
    [OFIELDS(field1[(options)],...),]
    [GFIELDS(field1[(options)],...),]
    [PRINTMULTIPLE|NOPRINTMULTIPLE,]
    [PRINTSINGLE|NOPRINTSINGLE,]
    [LINECount(nnn),]
    [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...),)]
    [SELGRP(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...),)]
    [TITLE1('...up to 64 characters...'),]
    [TITLE2('...up to 64 characters...'),])

```

The options are:

#### OUTPUT

Controls the report output DDname. If not specified, CICS PA assigns a DDname in the format **TTLsnnnn** where nnnn is the report sequence number **0001-9999**. See “OUTPUT” on page 390 for further information.

#### EXTERNAL

Specifies the DDname for the work data set used by the external SORT facility. If not specified, CICS PA assigns an External Work File from a pool of External Work Files with DDnames in the format **CPAXWnnn** where nnn is the sequence number **001-999**. See “EXTERNAL” on page 391 for further information.

#### PRINTMULTIPLE

Print only group transactions. This is the default condition when creating the report.

#### NOPRINTMULTIPLE

Do not print group transactions.

#### PRINTSINGLE

Print only transactions that do not belong to a group.

#### NOPRINTSINGLE

Do not print transactions that do not belong to a group.

#### LINECOUNT

Controls the number of lines per page. See “LINECount” on page 392 for further information.

#### OFIELDS

Specifies which fields are included in the origin section of the report and their format.

If the OFIELDS operand is not specified, the default is:

CICSPA TRACKINGLIST(OFIELDS(OTRAN,	Originating Transaction ID
OUSERID,	Originating User ID
OAPPLID,	Originating CICS Application ID
OTASKNO,	Originating Transaction number
OSTART(TIMET),	Originating Task Start time
OORIGIN,	Originating Transaction Origin type
OFCTY,	Originating Transaction Facility name
OTCPSRVC,	Originating TCP/IP Service name
OCLI6ADR,	Originating Client or Telnet IP address
OCLIPORT))	Originating Client IP port number

#### GFIELDS

Specifies which fields are included in the group section of the report and their format.

If the GFIELDS operand is not specified, the default is:

CICSPA TRACKINGLIST(GFIELDS(TRAN,	Transaction ID
USERID,	User ID
APPLID,	CICS Application ID
TASKNO,	Transaction number
START(TIMET),	Task Start time
RTYPE,	Record type
ORIGIN,	Transaction origin
RESPONSE,	Response time
CPU,	User CPU
PHTRAN,	Previous Hop transaction ID
PHTASKNO,	Previous Hop task number
PHAPPLID,	Previous Hop application ID
PHSTART,	Previous Hop start time
PHCOUNT))	Previous Hop count

#### **TITLE1, TITLE2**

Controls the report title (left and right half of subheading line). See “TITLE1 and TITLE2” on page 392 for further information.

#### **SELECT(PERFORMANCE(INCLUDE|EXCLUDE**

Specifies what records to include or exclude from report processing based on data field values. See “Using SELECT statements” on page 525 for a detailed explanation and examples.

#### **SELGRP(PERFORMANCE(INCLUDE|EXCLUDE**

Specifies what records and groups to include or exclude after report processing based on data field values. See “Using SELECT statements” on page 525 for a detailed explanation and examples.

This set of selection criteria is applied as a post-processing step. This is a second level of filtering that determines which Groups are to be included in the report. Only when all of the records in the Group fail this set of selection criteria will the whole group and its associated Origin record be excluded from the report.

**Note:** The combination of PRINTMULTIPLE and PRINTSINGLE results in a report containing all transactions. Conversely, specifying NOPRINTMULTIPLE and NOPRINTSINGLE results in an empty report.

## **TRACKINGLIST examples**

Example 1:

```
CICSPA IN(SMFIN001),
      NOAPPLID,
      LINECNT(60),
      FORMAT(':', '/' ),
      PRECISION(4),
      TRACKINGLIST(OUTPUT(TTLS0001),
      EXTERNAL(CPAXW001),
      PRINTMULTIPLE,NOPRINTSINGLE)
```

V5R2M0		CICS Performance Analyzer Transaction Tracking List												
TTLS0001 Printed at 12:03:45 11/12/2013 Data from 17:07:03 3/07/2011												Page	9	
OTran	OUserid	OAPPLID	OTaskNo	OStart Time	OOrigin	OFcty	OTCPIPSr	OCli6Adr	OCLIPORT					
PS3	JOHNB	IYCUZC03	418	16:25:34.939	TERM	2318			0					
Tran	Userid	APPLID	TaskNo	Start Time	RType	Origin	Response Time	User CPU Time	PHTran	PHTaskNo	PHAPPLID	PHStart Time	PHCount	PHLatncy Time
PS3	JOHNB	IYCUZC03	418	16:25:34.939	T	TERM	.0048	.0001		0			0	.0000
PS3	JOHNB	IYCUZC01	97486	16:25:34.941	T	MRO	.0029	.0007	PS3	418	IYCUZC03	16:25:34.939	1	.0019
CSM1	JOHNB	IYCUZC07	2966	16:25:34.941	T	MRO	.0027	.0004	PS3	97486	IYCUZC01	16:25:34.941	2	.0001
-----														
OTran	OUserid	OAPPLID	OTaskNo	OStart Time	OOrigin	OFcty	OTCPIPSr	OCli6Adr	OCLIPORT					
PX3	JOHNB	IYCUZC03	419	16:25:34.939	TERM	2930			0					
Tran	Userid	APPLID	TaskNo	Start Time	RType	Origin	Response Time	User CPU Time	PHTran	PHTaskNo	PHAPPLID	PHStart Time	PHCount	PHLatncy Time
PX3	JOHNB	IYCUZC03	419	16:25:34.939	T	TERM	.0052	.0001		0			0	.0000
PX3	JOHNB	IYCUZC01	97487	16:25:34.941	T	MRO	.0032	.0008	PX3	419	IYCUZC03	16:25:34.939	1	.0019
CSM1	JOHNB	IYCUZC07	2967	16:25:34.941	T	MRO	.0028	.0004	PX3	97487	IYCUZC01	16:25:34.941	2	.0003
-----														
OTran	OUserid	OAPPLID	OTaskNo	OStart Time	OOrigin	OFcty	OTCPIPSr	OCli6Adr	OCLIPORT					
HR2	JOHNB	IYCUZC04	99073	16:25:34.949	TERM	1865			0					
Tran	Userid	APPLID	TaskNo	Start Time	RType	Origin	Response Time	User CPU Time	PHTran	PHTaskNo	PHAPPLID	PHStart Time	PHCount	PHLatncy Time
CSM1	JOHNB	IYCUZC07	2969	16:25:34.950	T	MRO	.0104	.0002	HR2	96253	IYCUZC02	16:25:34.950	2	.0003
-----														
OTran	OUserid	OAPPLID	OTaskNo	OStart Time	OOrigin	OFcty	OTCPIPSr	OCli6Adr	OCLIPORT					
PA2	JOHNB	IYCUZC03	420	16:25:34.949	TERM	2646			0					
Tran	Userid	APPLID	TaskNo	Start Time	RType	Origin	Response Time	User CPU Time	PHTran	PHTaskNo	PHAPPLID	PHStart Time	PHCount	PHLatncy Time
PA2	JOHNB	IYCUZC03	420	16:25:34.949	T	TERM	.0019	.0001		0			0	.0000
PA2	JOHNB	IYCUZC01	97488	16:25:34.950	T	MRO	.0010	.0002	PA2	420	IYCUZC03	16:25:34.949	1	.0008
-----														

Figure 234. Transaction Tracking List report

## TRACKINGSUMMARY - Transaction Tracking Summary report

The **TRACKINGSUMMARY** operand requests the Transaction Tracking Summary report. The report combines CMF records for each originating transaction and its subordinate (group) transactions. Group transactions are identified by sharing the same transaction group ID with other transactions or by having a PHCOUNT > 0.

The command format is:

```
CICSPA TRACKINGSUMMARY(
    [OUTPUT(ddname),]
    [EXTERNAL(ddname),]
    [PRINTMULTIPLE|NOPRINTMULTIPLE,]
    [PRINTSINGLE|NOPRINTSINGLE,]
    [LINECount(nnn),]
    [FIELDS(field1[(options)],...),]
    [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...)),]
    [SELGRP(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...)),]
    [TITLE1('...up to 64 characters...'),]
    [TITLE2('...up to 64 characters...'),])
```

The options are:

### OUTPUT

Controls the report output DDname. If not specified, CICS PA assigns a DDname in the format **TTSUnnnn** where nnnn is the report sequence number **0001-9999**. See “OUTPUT” on page 390 for further information.

## EXTERNAL

Specifies the DDname for the work data set used by the external SORT facility. If not specified, CICS PA assigns an External Work File from a pool of External Work Files with DDnames in the format **CPAXWnnn** where nnn is the sequence number **001-999**. See “EXTERNAL” on page 391 for further information.

## PRINTMULTIPLE

Print only group transactions. This is the default condition when creating the report.

## NOPRINTMULTIPLE

Do not print group transactions.

## PRINTSINGLE

Print only transactions that do not belong to a group.

## NOPRINTSINGLE

Do not print transactions that do not belong to a group.

## LINECOUNT

Controls the number of lines per page. See “LINECount” on page 392 for further information.

## FIELDS

Specifies which fields are included in the report or extract, their order, and format. If the FIELDS operand is not specified, the default is:

```
CICSPA TRACKINGSUMMARY(FIELDS(
                                PHAPPLID,      Previous Hop application ID
                                PHTRAN,        Previous Hop transaction ID
                                PHCOUNT,     Previous Hop count
                                APPLID,       CICS Application ID
                                TRAN,         Transaction ID
                                TASKCNT,      Task count
                                Avg Response, Average Response time
                                Max Response, Maximum Response time
                                Avg Dispatch, Average Dispatch time
                                Avg CPU,      Average CPU time
                                Avg Suspend,  Average Suspend time
                                Max Suspend,  Maximum Suspend time
                                Avg DispWait, Average Dispatch Wait time
                                Avg FCWAIT,   Average File I/O Wait time
                                Avg FCAMCT,   Average File Access Method requests
                                Avg IRWAIT,   Average MRO link wait time
                                Avg SC24UHM,  Average UDSA HWM below 16MB
                                Avg SC31UHM)) Average EUDSA HWM above 16MB
```

Defining fields as Primary keys has no effect in the Transaction Tracking Summary report. These fields are treated as ASCENDING key fields.

## TITLE1, TITLE2

Controls the report title (left and right half of subheading line). See “TITLE1 and TITLE2” on page 392 for further information.

## SELECT(PERFORMANCE(INCLUDE|EXCLUDE

Specifies what records to include or exclude from report processing based on data field values. See “Using SELECT statements” on page 525 for a detailed explanation and examples.

## SELGRP(PERFORMANCE(INCLUDE|EXCLUDE

Specifies what records and groups to include or exclude after report processing based on data field values. See “Using SELECT statements” on page 525 for a detailed explanation and examples.

This set of selection criteria is applied as a post-processing step. This is a second level of filtering that determines which Groups are to be included in the report. Only when all of the records in the Group fail this set of selection criteria will the whole group and its associated Origin record be excluded from the report.

**Note:** The combination of PRINTMULTIPLE and PRINTSINGLE results in a report containing all transactions. Conversely, specifying NOPRINTMULTIPLE and NOPRINTSINGLE results in an empty report.

## TRACKINGSUMMARY examples

Example 1:

```
CICSPA IN(SMFIN001),
        NOAPPLID,
        LINECNT(60),
        FORMAT(':', '/'),
        PRECISION(4),
TRACKINGSUMMARY(OUTPUT(TTSU0001),
        EXTERNAL(CPAXW001),
        PRINTMULTIPLE,PRINTSINGLE,
        FIELDS(PHAPPLID,
        PHTRAN,
        PHCOUNT,
        APPLID,
        TRAN))
```

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CICS Performance Analyzer  
Performance Transaction Tracking Summary

TTSU0001 Printed at 12:03:45 11/12/2013      Data from 17:07:03 3/07/2011      Page 1

PHAPPLID	PHTran	PHCount	APPLID	Tran	Hop%	#Tasks	Avg Response Time	Max Response Time	Avg Dispatch Time	Avg User Time	Avg CPU Time	Avg Suspend Time	Max Suspend Time	Avg DispWait Time	FC Wait Time	Avg FCAMRq Count	Avg IR Wait Time	Avg SC24UHM Count	Avg SC31UHM Count
IYCUZC03	/FOR	0	IYCUZC03	/FOR	100	17175	.0016	.0529	.0003	.0001	.0001	.0013	.0526	.0002	.0000	0	.0010	0	0
		1	IYCUZC01	/FOR		17175	.0004	.0164	.0001	.0001	.0001	.0003	.0164	.0000	.0000	0	.0000	0	63280
		0	IYCUZC03	CSPG		1449	.0007	.0142	.0003	.0001	.0005	.0139	.0002	.0000	.0000	0	.0000	0	0
IYCUZC03	DE1	0	IYCUZC03	DE1		958	.0136	.0525	.0002	.0001	.0134	.0523	.0002	.0000	.0000	0	.0130	0	0
IYCUZC01	DE1	1	IYCUZC01	DE1	100	958	.0123	.0517	.0004	.0003	.0120	.0513	.0002	.0000	.0000	0	.0110	0	167440
IYCUZC07	CSMI	2	IYCUZC07	CSMI	100	958	.0114	.0504	.0002	.0002	.0113	.0502	.0004	.0008	.0008	3	.0010	0	23
IYCUZC03	DE1	1	IYCUZC01	DE20	9	92	.0088	.0284	.0005	.0005	.0083	.0278	.0001	.0000	.0000	0	.0070	0	499248
IYCUZC03	DE20	2	IYCUZC07	CSMI	9	92	.0083	.0264	.0002	.0002	.0081	.0262	.0002	.0010	.0010	13	.0018	0	0
IYCUZC03	DE1	1	IYCUZC01	DE21	10	104	.0090	.0288	.0005	.0005	.0085	.0282	.0001	.0000	.0000	0	.0073	0	499248
IYCUZC01	DE21	2	IYCUZC07	CSMI	10	104	.0085	.0286	.0003	.0002	.0083	.0282	.0003	.0011	.0011	13	.0018	0	1
IYCUZC03	DE1	1	IYCUZC01	DE22	9	95	.0077	.0341	.0005	.0005	.0072	.0335	.0001	.0000	.0000	0	.0059	0	499248
IYCUZC01	DE22	2	IYCUZC07	CSMI	9	95	.0071	.0329	.0002	.0002	.0069	.0325	.0002	.0009	.0009	13	.0017	0	1
IYCUZC03	DE1	1	IYCUZC01	DE23	10	105	.0092	.0464	.0005	.0005	.0087	.0459	.0002	.0000	.0000	0	.0070	0	499248
IYCUZC01	DE23	2	IYCUZC07	CSMI	10	105	.0086	.0462	.0003	.0002	.0084	.0459	.0002	.0009	.0009	13	.0021	0	0
IYCUZC03	DE1	1	IYCUZC01	DE24	9	89	.0077	.0282	.0005	.0005	.0072	.0276	.0001	.0000	.0000	0	.0059	0	499248
IYCUZC01	DE24	2	IYCUZC07	CSMI	9	89	.0073	.0279	.0002	.0002	.0070	.0276	.0002	.0008	.0008	13	.0019	0	0
IYCUZC03	DE1	1	IYCUZC01	DE25	9	94	.0098	.0269	.0005	.0005	.0093	.0263	.0002	.0000	.0000	0	.0080	0	499248
IYCUZC01	DE25	2	IYCUZC07	CSMI	9	94	.0093	.0266	.0003	.0002	.0090	.0263	.0003	.0012	.0012	13	.0018	0	1
IYCUZC03	DE1	1	IYCUZC01	DE26	8	83	.0081	.0307	.0005	.0005	.0076	.0302	.0001	.0000	.0000	0	.0065	0	499248
IYCUZC01	DE26	2	IYCUZC07	CSMI	8	83	.0077	.0302	.0002	.0002	.0075	.0299	.0002	.0010	.0010	13	.0017	0	0
IYCUZC03	DE1	1	IYCUZC01	DE27	10	103	.0084	.0293	.0005	.0005	.0079	.0288	.0002	.0000	.0000	0	.0066	0	499248
IYCUZC01	DE27	2	IYCUZC07	CSMI	10	103	.0079	.0290	.0002	.0002	.0076	.0288	.0002	.0009	.0009	13	.0020	0	0
IYCUZC03	DE1	1	IYCUZC01	DE28	10	101	.0082	.0333	.0005	.0005	.0077	.0326	.0001	.0000	.0000	0	.0066	0	499248
IYCUZC01	DE28	2	IYCUZC07	CSMI	10	101	.0077	.0324	.0002	.0002	.0075	.0319	.0002	.0008	.0008	13	.0017	0	1
IYCUZC03	DE1	1	IYCUZC01	DE29	9	93	.0080	.0296	.0005	.0005	.0075	.0291	.0001	.0000	.0000	0	.0064	0	499248
IYCUZC01	DE29	2	IYCUZC07	CSMI	9	93	.0076	.0292	.0002	.0002	.0073	.0289	.0002	.0009	.0009	13	.0017	0	0
IYCUZC03	HR2	0	IYCUZC03	HR2		357	.0071	.0234	.0002	.0001	.0068	.0229	.0002	.0000	.0000	0	.0066	0	0
IYCUZC01	HR2	1	IYCUZC01	HR2	100	357	.0061	.0224	.0003	.0003	.0057	.0221	.0001	.0000	.0000	0	.0056	0	132896
		2	IYCUZC07	CSMI	100	357	.0054	.0211	.0001	.0001	.0052	.0210	.0002	.0005	.0005	4	.0003	0	4

Figure 235. Transaction Tracking Summary report

## LISTEXC - Exception List report

The LISTEXCception operand requests the Exception List report.

The command format is:

```
CICSPA LISTEXC(
                [OUTPUT(ddname),]
                [LINECount(nnn),]
```

```
[TITLE1('...up to 64 characters...'),]
[TITLE2('...up to 64 characters...'),]
[SELECT(EXCEPTION(INCLUDE|EXCLUDE(field1(values1),...),
...)))]
```

The options are:

#### OUTPUT

Controls the report output DDname. If not specified, CICS PA assigns a DDname in the format **XLSTnnnn** where nnnn is the report sequence number **0001-9999**. See “OUTPUT” on page 390 for further information.

#### LINECOUNT

Controls the number of lines per page. See “LINECount” on page 392 for further information.

#### TITLE1, TITLE2

Controls the report title (left and right half of subheading line). See “TITLE1 and TITLE2” on page 392 for further information.

#### SELECT(EXCEPTION(INCLUDE|EXCLUDE

Specifies what CMF exception data to include or exclude from the report based on data field values. See “Using SELECT statements” on page 525 for a detailed explanation and examples.

## LISTEXC examples

Example 1: Default report

```
CICSPA LISTEXC
```

Example 2: Exceptions for a particular transaction

In this example, the report only contains exception records for transaction ROLE.

```
CICSPA LISTEXC(SELECT(EXCEPTION(INCLUDE(TRAN(ROLE)))))
```

Example 3: Exceptions for a specified report interval

This example lists the exception data for January 16, 2005.

```
CICSPA IN(SMFIN001),
LISTEXC(SELECT(EXCEPTION(
INCLUDE(ACTIVE(FROM(2005/01/16,),TO(2005/01/17,)))))
```

Example 4: Particular types of exception

You can use SELECT to report only those exception records for transactions that incurred a particular type of CICS resource shortage. For example, the following command generates an Exception List report of only the exception class records for transactions that incurred a storage wait in either the CDSA or ECDSA.

```
CICSPA IN(SMFIN002),
LISTEXC(SELECT(EXCEPTION(
INCLUDE(STORAGEW(CDSA,ECDSA)))))
```

V5R2M0				CICS Performance Analyzer										
				<u>Exception List</u>										
XLST0001 Printed at 12:03:45 11/12/2013				Data from 08:08:37 2/16/2005				APPLID				Page	1	
Tran	Term	LUName	Userid	Tran SC Class	Service Class	Report Class	Taskno	Seq	Exp Start	Time Elapsed	Current Program	Resource Type	Resource ID	Exception Type
ABRW	P045	IG2ZP045	CBAKER	TP			834	1	08:08:37	10.189	DFHSABRW	FILE	FILEA	STRING
ABRW	S205	IGCS205	BRENNER	TP			835	1	08:08:47	7.245	DFHSABRW	FILE	FILEA	STRING
ABRW	S220	IGCS220	BRENNER	TP			837	1	08:08:52	2.996	DFHSABRW	FILE	FILEA	STRING
CECI	S220	IGCS220	BRENNER	TO			1151	1	08:12:10	.005	DFHECID	TEMPSTOR	CACA	BUFFER
CECI	S220	IGCS220	BRENNER	TO			1151	2	08:12:10	.002	DFHECID	TEMPSTOR	CACA	BUFFER
CECI	S220	IGCS220	BRENNER	TO			1151	3	08:12:10	.002	DFHECID	TEMPSTOR	CACA	BUFFER
CECI	P045	IG2ZP045	CBAKER	TO			1149	1	08:12:10	.004	DFHECID	TEMPSTOR	LONGTSNAME	BUFFER
CECI	P045	IG2ZP045	CBAKER	TO			1149	2	08:12:10	.004	DFHECID	TEMPSTOR	LONGTSNAME	BUFFER
CECI	P045	IG2ZP045	CBAKER	TO			1149	3	08:12:10	.002	DFHECID	TEMPSTOR	LONGTSNAME	BUFFER
CECI	P045	IG2ZP045	CBAKER	TO			1149	4	08:12:10	.004	DFHECID	TEMPSTOR	LONGTSNAME	BUFFER
CECI	P045	IG2ZP045	CBAKER	TO			1149	5	08:12:10	.004	DFHECID	TEMPSTOR	LONGTSNAME	BUFFER
CECI	P045	IG2ZP045	CBAKER	TO			1149	6	08:12:10	.004	DFHECID	TEMPSTOR	LONGTSNAME	BUFFER
CECI	P045	IG2ZP045	CBAKER	TO			1149	7	08:12:10	.002	DFHECID	TEMPSTOR	LONGTSNAME	BUFFER

Figure 236. Exception List report - STORAGEW(CDSA,ECDSA)

#### Example 5: Exceptions for FILE resources

This example produces an Exception List report like that shown in Figure 237. It includes only the exception records for a specific resource type of FILE.

```
CICSPA LISTEXC(SELECT(EXCEPTION(INCLUDE(RESOURCETYPE(FILE)))))
```

V5R2M0				CICS Performance Analyzer Exception List										
XLST0001 Printed at 12:03:45 11/12/2013				Data from 08:08:37 2/16/2004				APPLID				Page	1	
Tran	Term	LUName	Userid	SC Class	Service Class	Report Class	Taskno	Seq	Exp Start	Time Elapsed	Current Program	Resource Type	Resource ID	Exception Type
ABRW	P045	IG2ZP045	CBAKER	TP			834	1	08:08:37	10.189	DFHSABRW	FILE	FILEA	STRING
ABRW	S205	IGCS205	BRENNER	TP			835	1	08:08:47	7.245	DFHSABRW	FILE	FILEA	STRING
ABRW	S220	IGCS220	BRENNER	TP			837	1	08:08:52	2.996	DFHSABRW	FILE	FILEA	STRING

Figure 237. Exception List report

#### Example 6: Exceptions for LSRPOOL and FILE resources

This example generates an Exception List report for the exception records for resource types LSRPOOL and FILE.

```
CICSPA LISTEXC(SELECT(EXCEPTION(
INCLUDE(RESOURCETYPE(LSRPOOL,FILE)))))
```

#### Example 7: Exceptions for STORAGE resources

This examples produces an Exception List report that includes only the exception records for a specific resource type of STORAGE.

```
CICSPA LISTEXC(SELECT(EXCEPTION(INCLUDE(RESOURCETYPE(STORAGE)))))
```

#### Example 8: Exceptions for a particular transaction ID

This example produces an Exception List report that only includes the exception records for specific transaction identifiers.

```
CICS LISTEXC(SELECT(EXCEPTION(INCLUDE(TRAN(ABRW)))))
```

## SUMEXC - Exception Summary report

The SUMEXCception operand requests the Exception Summary report.

The command format is:



```

CICSPA SUMEXC(
    [OUTPUT(ddname),]
    [LINECount(nnn),]
    [TITLE1('...up to 64 characters...'),]
    [TITLE2('...up to 64 characters...'),]
    [SELECT(EXCEPTION(INCLUDE|EXCLUDE(field1(values1),...),
        ...))])

```

The options are:

#### OUTPUT

Controls the report output DDname. If not specified, CICS PA assigns a DDname in the format **XSUMnnnn** where nnnn is the report sequence number **0001-9999**. See “OUTPUT” on page 390 for further information.

#### LINECOUNT

Controls the number of lines per page. See “LINECount” on page 392 for further information.

#### TITLE1, TITLE2

Controls the report title (left and right half of subheading line). See “TITLE1 and TITLE2” on page 392 for further information.

#### SELECT(EXCEPTION(INCLUDE|EXCLUDE

Specifies what CMF exception data to include or exclude from the report based on data field values. See “Using SELECT statements” on page 525 for a detailed explanation and examples.

## SUMEXception examples

Example 1: Default report

```
CICSPA SUMEXC
```

Example 2: VSTRINGW exceptions on a particular file

This example shows the SUMEXception operand combined with a SELECT statement. This report will only contain the exception class records that are generated because of a VSAM string wait on file FILEA.

```
CICSPA SUMEXC(SELECT(EXCEPTION(INCLUDE(VSTRINGW(FILEA)))))
```

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CICS Performance Analyzer  
Exception Summary

XSUM0001 Printed at 12:03:45 11/12/2013      Data from 08:08:37 2/16/2005 to 08:12:36 2/16/2005      Page 1

Tran ID	Total Excepts	TS-Buffer-Wait		TS-String-Wait		Pool-Buffer-Wait		Pool-String-Wait		File-String-Wait		..Temp Storage.		..Main Storage.	
		Average	Count	Average	Count	Average	Count	Average	Count	Average	Count	Average	Count	Average	Count
ABRW	3									6.810	3				
CEBR	16			.003	16										
CECI	257	.006	256	.003	1										
TOTAL	276	.006	256	.003	17					6.810	3				

Figure 238. Exception Summary report

## RESUSAGE - Transaction Resource Usage reports

The **RESUSAGE** operand requests the Transaction Resource Usage reports.

The command format is:

```

CICSPA RESUSAGE(
    [OUTPUT(ddname),]
    [TRANLIST(FILE,TEMPSTOR,DPL),]
    [TRANSummary(FILE,TEMPSTOR,DPL),]

```

```
[FILESUMmary(BYTRAN,TOTAL),]
[TEMPSTORSUMmary(BYTRAN,TOTAL),]
[DPLSUMmary(BYTRAN,TOTAL),]
[LINECount(nnn),]
[TITLE1('...up to 64 characters...'),]
[TITLE2('...up to 64 characters...'),]
[SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),
...))]]
```

The default report produces all the Summaries.

The options are:

#### OUTPUT

Controls the report output DDname. If not specified, CICS PA assigns a DDname in the format **RESUnnnn** where nnnn is the report sequence number **0001-9999**. See “OUTPUT” on page 390 for further information.

#### TRANLIST

Requests the Transaction Resource Usage List report, a detailed list of all transactions with CMF transaction resource class data.

Specify **FILE** to report File usage statistics, **TEMPSTOR** to report Temporary Storage usage statistics, and **DPL** to report DPL usage statistics.

Currently these are the only resource types available. The default is **TRANLIST(FILE,TEMPSTOR,DPL)**.

#### TRANSUMMARY

Specify **FILE** to request the Transaction File Usage Summary report, a summary (averages and maximums) of File activity for each Transaction ID.

Specify **TEMPSTOR** to request the Transaction Temporary Storage Usage Summary report, a summary (averages and maximums) of Temporary Storage activity for each Transaction ID.

Specify **DPL** to request the Transaction Distributed Program Link (DPL) Usage Summary report, a summary (averages and maximums) of DPL activity for each Transaction ID.

Currently these are the only resource types available. The default is **TRANSUMMARY(FILE,TEMPSTOR,DPL)**.

#### FILESUMMARY

Requests the File Usage Summary report, a summary (averages and maximums) of File usage for each File.

Specify **BYTRAN** to break down the File usage statistics by Transaction ID.

Specify **TOTAL** to give total usage statistics for each File.

The default is **FILESUMMARY(BYTRAN,TOTAL)**.

#### TEMPSTORSUMMARY

Requests the Temporary Storage Usage Summary report, a summary (averages and maximums) of Temporary Storage usage for each Temporary Storage Queue.

Specify **BYTRAN** to break down the Temporary Storage usage statistics by Transaction ID.

Specify **TOTAL** to give total usage statistics for each Temporary Storage Queue.

The default is **TEMPSTORSUMMARY(BYTRAN,TOTAL)**.

#### **DPLSUMMARY**

Requests the DPL Usage Summary report, a summary (averages and maximums) of usage for each DPL.

Specify **BYTRAN** to break down the DPL usage statistics by Transaction ID.

Specify **TOTAL** to give total usage statistics for each DPL.

The default is **DPLSUMMARY(BYTRAN,TOTAL)**.

#### **LINECOUNT**

Controls the number of lines per page. See “LINECount” on page 392 for further information.

#### **TITLE1, TITLE2**

Controls the report title (left and right half of subheading line). See “TITLE1 and TITLE2” on page 392 for further information.

#### **SELECT(PERFORMANCE(INCLUDE|EXCLUDE**

Specifies what data to include or exclude from the report based on data field values. See “Using SELECT statements” on page 525 for a detailed explanation and examples.

The Transaction Resource Usage report processes transaction resource class and performance class data, and uses Performance Selection Criteria to filter both. For more information, see “Performance Selection Criteria” on page 221.

## **RESUSAGE examples**

### **Example 1: Default report**

The default produces all the Summary reports:

1. Transaction File Usage Summary report
2. Transaction Temporary Storage Usage Summary report
3. Transaction DPL Usage Summary report
4. File Usage Summary report with individual and total Transaction statistics
5. Temporary Storage Usage Summary report with individual and total Transaction statistics
6. DPL Usage Summary report with individual and total Transaction statistics

**CICSPA RESUSAGE**

The following command achieves the same:

```
CICSPA RESUSAGE(TRANSUMM(FILE,TEMPSTOR,DPL),  
                FILESUMM(BYTRAN,TOTAL),  
                TEMPSTORSUMM(BYTRAN,TOTAL),  
                DPLSUMM(BYTRAN,TOTAL))
```

### **Example 2:**

This example produces a Transaction Resource Usage List report showing File Usage, Temporary Storage Usage, and DPL Usage details as shown in Figure 239 on page 494.

```
CICSPA RESUSAGE(TRANLIST(FILE,TEMPSTOR,DPL))
```

RESU0001 Printed at 12:03:45 11/12/2013 Data from 15:05:47 5/15/2014

Page 1

Tran	Userid	SC	TranType	Term	LUName	Request Type	Program	Fcty T/Name	Conn Name	NETName	APPLID	Task	Seq	UOW T	R O	Stop T	/ OStart Time	Response Time
CW2A	CBAKER	U	U	-	-	AP:	DFHW2FI	B/	-	GBIBMIYA.IYK2Z1V2	IYK2Z1V2	44	1	T	-	15:06:26.734	.1473	
CWXN	CBAKER	-	U			-	-	-	-	-	IYK2Z1V2	43	-	-	-	15:06:26.580	.1541	
File					*****	FC	Calls	*****	*****	I/O	Waits	*****	AccMeth					
FILEA					Get	Put	Browse	Add	Delete	Total	File	RLS	CFDT	Requests				
Elapse					.0000	.0000	.0001	.0000	.0000	.0153	.0147	.0000	.0000	143				
Count					11	0	66	0	0	143	2	0	0					
Tran	Userid	SC	TranType	Term	LUName	Request Type	Program	Fcty T/Name	Conn Name	NETName	APPLID	Task	Seq	UOW T	R O	Stop T	/ OStart Time	Response Time
CEJR	CBAKER	U	S			AP:	DFHEJITL			GBIBMIYA.IYK2Z1V2	IYK2Z1V2	58	1	T	-	15:11:26.947	.3140	
File					*****	FC	Calls	*****	*****	I/O	Waits	*****	AccMeth					
DFHEJDIR					Get	Put	Browse	Add	Delete	Total	File	RLS	CFDT	Requests				
Elapse					.0841	.0000	.0000	.0000	.0000	.0841	.0009	.0000	.0000	1				
Count					1	0	0	0	0	1	2	0	0					
DFHEJOS					.0834	.0000	.0000	.0000	.0000	.0834	.0011	.0000	.0000	1				
Count					1	0	0	0	0	1	2	0	0					
Total					.1675	.0000	.0000	.0000	.0000	.1675	.0020	.0000	.0000	2				
Count					2	0	0	0	0	2	4	0	0					
Tran	Userid	SC	TranType	Term	LUName	Request Type	Program	Fcty T/Name	Conn Name	NETName	APPLID	Task	Seq	UOW T	R O	Stop T	/ OStart Time	Response Time
CECI	CBAKER	TO	U	T164	IYCWT164	AP:	DFHECIP	T/T164		GBIBMIYA.IYCWT164	IYK2Z1V2	75	1	T	-	15:13:16.521	10.0157	
DPL					DPL LINK													
Program					Requests													
SYSID					-----													
DFH0STAT					CJB1	Count	2											
DFH0STAT					CJB3	Count	4											
Total					Count	6												
Tran	Userid	SC	TranType	Term	LUName	Request Type	Program	Fcty T/Name	Conn Name	NETName	APPLID	Task	Seq	UOW T	R O	Stop T	/ OStart Time	Response Time
CEMT	CBAKER	TO	U	T164	IYCWT164	AP:	DFHEMTP	T/T164		GBIBMIYA.IYCWT164	IYK2Z1V2	89	6	T	-	15:17:57.532	14.5784	
TSQueue					*****	TS	Calls	*****	***	I/O	Waits	***	*****	TS	Item	*****		
					Get	Put_Aux	Put_Main	Total	TS	Shr_TS								
T164EZA					.0000	.0000	.0000	.0004	.0000	.0000	Length	0	89	0				
Count					0	1	0	2	0	0								

Figure 239. Transaction Resource Usage List report

Example 3:

This example produces the Transaction File Usage Summary report like that shown in Figure 240 on page 495.

CICSPA RESUSAGE(TRANSUMM(FILE))

CICS Performance Analyzer  
Transaction File Usage Summary

RESU0001 Printed at 12:03:45 11/12/2013 Data from 09:00:10 5/23/2014 to 08:35:48 5/29/2014 APPLID IYK2Z1V1 Page 3

Tran	#Tasks			***** FC Calls *****				***** I/O Waits *****			AccMeth				
				Get	Put	Browse	Add	Delete	Total	File	RLS	CFDT	Requests		
CEDA		11	Elapse	Avg						.2031	.0000	.0000			
			Max							1.5718	.0000	.0000			
			Count	Avg	39	0	420	2	1	471	54	0	0	493	
			Max	369	2	4354	8	4	4739	426	0	0	4925		
-----															
File	#Tasks			***** FC Calls *****				***** I/O Waits *****			AccMeth				
				Get	Put	Browse	Add	Delete	Total	File	RLS	CFDT	Requests		
DFHCSD		11	Elapse	Avg	.1560	.0036	.0139	.0126	.0077	.2081	.2031	.0000	.0000		
			Max	1.4601	.0110	.1195	.0458	.0358	1.6370	1.5718	.0000	.0000			
			Count	Avg	39	0	414	2	1	465	54	0	0	493	
			Max	369	2	4354	8	4	4739	426	0	0	4925		
-----															
Tran	#Tasks			***** FC Calls *****				***** I/O Waits *****			AccMeth				
				Get	Put	Browse	Add	Delete	Total	File	RLS	CFDT	Requests		
CMAC		3	Elapse	Avg						.0282	.0000	.0000			
			Max							.0295	.0000	.0000			
			Count	Avg	1	0	0	0	0	2	0	0	1		
			Max	1	0	0	0	0	3	0	0	2			
-----															
Tran	File	#Tasks			***** FC Calls *****				***** I/O Waits *****			AccMeth			
					Get	Put	Browse	Add	Delete	Total	File	RLS	CFDT	Requests	
CMAC	DFHCMACD	3	Elapse	Avg	.0582	.0000	.0000	.0000	.0000	.0000	.0582	.0282	.0000	.0000	
			Max	.1747	.0000	.0000	.0000	.0000	.1747	.0295	.0000	.0000			
			Count	Avg	0	0	0	0	0	0	2	0	0	1	
			Max	1	0	0	0	0	1	3	0	0	2		

Figure 240. Transaction File Usage Summary report

Example 4:

This example produces the File Usage Summary report with individual Transaction ID statistics and total Transaction statistics like that shown in Figure 241. Only data for files whose file names match the CB\* pattern are included in the report.

CICSPA RESUSAGE(FILESUMM,SELECT(PERF(INC(FILENAME(CB\*))))

CICS Performance Analyzer  
File Usage Summary

RESU0001 Printed at 12:03:45 11/12/2013 Data from 09:00:10 5/23/2004 to 08:35:48 5/29/2004 APPLID IYK2Z1V1 Page 2

		***** FC Calls *****								***** I/O Waits *****		*****		AccMeth
File	Tran	#Tasks		Get	Put	Browse	Add	Delete	Total	File	RLS	CFDT	Requests	
-----														
CBFILEA	CMAC	3	Elapse	Avg	.0582	.0000	.0000	.0000	.0000	.0582	.0282	.0000	.0000	
			Max	.1747	.0000	.0000	.0000	.0000	.1747	.0295	.0000	.0000		
			Count	Avg	0	0	0	0	0	2	0	0	1	
			Max	1	0	0	0	0	1	3	0	0	2	
-----														
CBFILEB	CEDA	11	Elapse	Avg	.1560	.0036	.0139	.0126	.0077	.2081	.2031	.0000	.0000	
			Max	1.4601	.0110	.1195	.0458	.0358	1.6370	1.5718	.0000	.0000		
			Count	Avg	39	0	414	2	1	465	54	0	0	493
			Max	369	2	4354	8	4	4739	426	0	0	4925	
-----														
	CSSY	5	Elapse	Avg	.4939	.0000	8111.611	.0000	.0000	8112.355	1.4960	.0000	.0000	
			Max	.8421	.0000	40557.78	.0000	.0000	40557.78	2.3385	.0000	.0000		
			Count	Avg	130	0	2618	0	0	2880	356	0	0	3754
			Max	217	0	3273	0	0	3710	356	0	0	3754	
-----														
	Totl	16	Elapse	Avg	.2616	.0025	2534.888	.0087	.0053	2535.254	.6071	.0000	.0000	
			Max	2.4697	.0401	40558.06	.1390	.0842	40561.78	7.4800	.0000	.0000		
			Count	Avg	67	0	1103	1	0	1219	148	0	0	1512
			Max	651	7	13092	23	12	14403	1780	0	0	18770	

Figure 241. File Usage Summary report

Example 5:

This example produces the Temporary Storage Usage Summary report and the Transaction Temporary Storage Usage Summary report with individual Transaction ID statistics and total Transaction statistics like that shown in Figure 242 and Figure 243.

```
CICSPA RESUSAGE(TRANSUMM(TEMPSTOR),
                TEMPSTORSUMM(BYTRAN,TOTAL))
```

V5R2M0

CICS Performance Analyzer

Transaction Temporary Storage Usage Summary

TEMP0001 Printed at 12:03:45 11/12/2013

Data from 09:14:16 3/20/2004 to 09:41:25 3/20/2004

APPLID IYK2Z1V1

Page

1

Tran	#Tasks	***** TS Calls *****				*** I/O Waits ***					
		Get	Put_Aux	Put_Main	Total	TS	Shr_TS				
CECI	3 Elapse	Avg				.0000	.0139				
		Max				.0000	.0139				
		Count	2	0	6	8	0	10			
		Max	3	0	12	12	0	17			
TSQueue	#Tasks	***** TS Calls *****				*** I/O Waits ***		***** TS Item *****			
		Get	Put_Aux	Put_Main	Total	TS	Shr_TS	Get	Put_Aux	Put_Main	
TS_Queue1	2 Elapse	Avg	.0104	.0000	.0002	.0106	.0000	.0139			
		Max	.0104	.0000	.0002	.0104	.0000	.0139			
		Count	2	0	6	8	0	10			
		Max	3	0	12	12	0	17	Length	56	44
								112	88	756	
TS_Queue2	1 Elapse	Avg	.0104	.0000	.0002	.0000	.0000	.0139			
		Max	.0104	.0000	.0002	.0000	.0000	.0139			
		Count	2	0	6	8	0	104			
		Max	2	0	6	8	0	104	Length	56	44
								112	88	756	
Total	2 Elapse	Avg	.0104	.0000	.0002	.0000	.0000	.0139			
		Max	.0104	.0000	.0002	.0104	.0000	.0139			
		Count	2	0	6	8	0	10			
		Max	3	0	12	12	0	17	Length	56	44
								112	88	756	

Figure 242. Transaction Temporary Storage Usage Summary report

CICS Performance Analyzer									
Temporary Storage Usage Summary									
TEMP0001 Printed at 12:03:45 11/12/2013 Data from 09:14:16 3/20/2004 to 09:41:25 3/20/2004 APPLID IYK2Z1V1 Page 3									
TSQueue	Tran	#Tasks	***** TS Calls *****				*** I/O Waits ***		
			Get	Put_Aux	Put_Main	Total	TS	Shr_TS	***** TS Item *****
CJBTSQNAME	CECI	1 Elapse	Avg	.0000	.0000	.0000	.0000	.0739	
			Max	.0000	.0000	.0000	.0000	.0739	
			Count	0	0	0	0	66	0
			Max	0	0	0	0	66	0
MONITOR	CZUX	15 Elapse	Avg	.0000	.0000	.0000	.0000	.0022	
			Max	.0000	.0000	.0000	.0000	.0048	
			Count	0	0	0	0	1	0
			Max	0	0	0	0	2	0
SHAR1	CEBR	1 Elapse	Avg	.0000	.0000	.0000	.0000	.0012	
			Max	.0000	.0000	.0000	.0000	.0012	
			Count	0	0	0	0	2	0
			Max	0	0	0	0	2	0
	CECI	1 Elapse	Avg	.0000	.0000	.0000	.0000	.0028	
			Max	.0000	.0000	.0000	.0000	.0028	
			Count	0	0	0	0	4	0
			Max	0	0	0	0	4	0
Totl	2 Elapse		Avg	.0000	.0000	.0000	.0000	.0020	
			Max	.0000	.0000	.0000	.0000	.0028	
			Count	0	0	0	0	3	0
			Max	0	0	0	0	4	0

Figure 243. Temporary Storage Usage Summary report

Example 6:

This example produces the DPL Usage Summary report and the Transaction DPL Usage Summary report with individual Transaction ID statistics and total Transaction statistics like that shown in Figure 244 and Figure 245 on page 498.

```
CICSPA RESUSAGE (TRANSUMM(DPL),
                  DPLSUMM(BYTRAN,TOTAL))
```

V5R2M0		CICS Performance Analyzer				
		Transaction DPL Usage Summary				
DPLS0001 Printed at 12:03:45 11/12/2013		Data from 07:12:47 7/15/2014 to 07:56:49 7/15/2014		APPLID CCVT41M	Page	1
Tran	Program	#Tasks		DPL LINK Requests		
-----	-----	-----	-----	-----	-----	
DIAD	DIADPL	29	Count	Avg	8	
				Max	13	
	Program	SYSID	#Tasks	DPL LINK Requests		
	-----	-----	-----	-----	-----	
	DIADLET	T41T	12	Count	Avg	1
					Max	1
	DIADLET	T41X	17	Count	Avg	1
					Max	1
	DIAREAD	T41T	7	Count	Avg	2
					Max	4
	DIAREAD	T41X	17	Count	Avg	7
					Max	9
	DIATDQ	T41T	29	Count	Avg	1
					Max	1
	DIATDQ	T41X	29	Count	Avg	1
					Max	1
	DIAWRITE	T41T	12	Count	Avg	1
					Max	1
	DIAWRITE	T41X	17	Count	Avg	1
					Max	1
	Total		140	Count	Avg	1
					Max	9

Figure 244. Transaction DPL Usage Summary report

Program	SYSID	Tran	#Tasks		DPL LINK Requests
DIADLET	T41T	DIAD	12 Count	Avg	1
				Max	1
	T41X	DIAD	17 Count	Avg	1
				Max	1
		Totl	29 Count	Avg	1
				Max	1
DIAREAD	T41T	DIAD	7 Count	Avg	2
				Max	4
	T41X	DIAD	17 Count	Avg	7
				Max	9
		Totl	24 Count	Avg	5
				Max	9
DIATDQ	T41T	DIAD	29 Count	Avg	1
				Max	1
	T41X	DIAD	29 Count	Avg	1
				Max	1
		Totl	58 Count	Avg	1
				Max	1
DIWRITE	T41T	DIAD	12 Count	Avg	1
				Max	1
	T41X	DIAD	17 Count	Avg	1
				Max	1
		Totl	29 Count	Avg	1
				Max	1

Figure 245. DPL Usage Summary report

## STATISTICS LIST - Statistics List reports

The **STATISTICS LIST** operand requests a Statistics List report.

The command format for a Statistics List report is:

```
CICSPA STATISTICS LIST(
    [FORM(formname),]
    [STALTDEF(statistics-alert-definition),]
    [SEVERITY(CRITICAL|WARNING|INFO|ALL),]
    [INCLUDESEV,]
    [TYPE(EOD,INT,USS,REQ,RR),]
    STTSstid(ddname),
    :
    STTGstid(ddname)
    [LINECount(nnn),]
    [TITLE1('...up to 64 characters...'),]
    [TITLE2('...up to 64 characters...')])
```

The options are:

### FORM

The name of a statistics form to be used to tailor the format and content of the report.

### STALTDEF(statistics-alert-definition)

The Alert Definition containing the conditions used to select the records



that you want to report. You must have already created this Alert Definition in the currently active Repository. To select from a list of Alert Definitions in the Repository, press **Prompt** (F4). To create a new Alert Definition, return to the primary option menu, and then select option 8.5. For details, see Chapter 14, "Statistics alert reporting," on page 355.

In the JCL for the report, the DDname CPAHDBRG identifies the Repository data set that defines the Alert Definition.

#### **SEVERITY**

Determines the minimum threshold level to evaluate which records are to be reported.

##### **CRITICAL**

Only records with Critical alerts are reported, according to the CRITICAL threshold values specified in the Statistics Alert definition.

##### **WARNING**

Only records with Critical or Warning alerts are reported, according to the CRITICAL and WARNING threshold values specified in the Statistics Alert definition.

**INFO** Only records with Critical, Warning, or Informational alerts are reported, according to the CRITICAL, WARNING, and INFO threshold values specified in the Statistics Alert definition.

##### **ELIGIBLE**

Only records that are eligible for alert processing are reported. Eligible records are those that have field values that match the Resource values defined in the Statistics Alert definition. All eligible records are reported regardless of whether they generate an alert.

This option provides the means to filter out records that would never generate an alert because their resource values do not match resource values specified in the alert definition.

**ALL** All records are reported regardless of whether they are eligible or whether they generate an alert.

#### **INCLUDESEV**

This option is used to insert a Sev column in the List report, showing the highest severity encountered for each record. (No other information is shown regarding the alert such as the field or alert that caused it.) This option must be selected if Severity=ALL.

#### **TYPE(...)**

The types of statistics intervals to include in the report.

#### **STTSxxxx|STTGxxxx**

Specifies the ddname of the output data set where each statistics type report is written: STTSxxxx for CICS TS statistics or STTGxxxx for CICS TG statistics, where xxxx is the statistics type ID (STID). The CICS PA dialog defines ddnames in the format LSxxxxnn or LGxxxxnn, respectively, where nn is a 2-digit sequence number that ensures each ddname is unique.

#### **LINECount**

Controls the number of lines per page in the report. See "LINECount" on page 392 for further information.

## TITLE1, TITLE2

Controls the report title (left and right half of subheading line) for the report. See “TITLE1 and TITLE2” on page 392 for further information.

## STATISTICSLIST examples

This example produces Statistics List reports for the statistics types “Task Subpools” and “Transaction Dump Overview”:

```
CICSPA STATISTICSLIST(  
    FORM(SBSFM1),  
    STALTDEF(RXAN),  
    SEVERITY(INFO),  
    TYPE(EOD,INT,USS,REQ,RRT),  
    STTS020A(LS020A01),    Task Subpools  
    STTS087A(LS087A01))    Transaction Dump Overview
```

V5R2M0 CICS Performance Analyzer Stats List - Task Subpools											
LS020A01 Printed at 13:22:50 3/16/2014 Data from 07:59:00 18/02/2014										Page	
System	Type	Collection Time	DSA Name	Location	Access	DSA Index	GETMAIN Requests	FREEMAIN Requests	Element Storage	Page Storage	Element
IYK2Z1V1/MV2C	INT	2014-02-18-07.59.00	CDSA	BELOW	CICS	1	63	63	0	0K	
IYK2Z1V1/MV2C	INT	2014-02-18-07.59.00	UDSA	BELOW	USER	2	1	1	0	0K	
IYK2Z1V1/MV2C	INT	2014-02-18-07.59.00	ECDSA	ABOVE	CICS	9	10096	10055	133232	184K	4
IYK2Z1V1/MV2C	INT	2014-02-18-07.59.00	EUDSA	ABOVE	USER	10	110	90	80320	1M	2
IYK2Z1V1/MV2C	INT	2014-02-18-07.59.00	GCDSA	ABOVEBAR	CICS	17	1	1	0	0K	
IYK2Z1V1/MV2C	INT	2014-02-18-07.59.00	GUDSA	ABOVEBAR	USER	18	0	0	0	0K	
IYK2Z1V1/MV2C	EOD	2014-02-18-08.54.11	CDSA	BELOW	CICS	1	5	5	0	0K	
IYK2Z1V1/MV2C	EOD	2014-02-18-08.54.11	UDSA	BELOW	USER	2	0	0	0	0K	
IYK2Z1V1/MV2C	EOD	2014-02-18-08.54.11	ECDSA	ABOVE	CICS	9	112	132	75952	100K	
IYK2Z1V1/MV2C	EOD	2014-02-18-08.54.11	EUDSA	ABOVE	USER	10	32	40	48192	768K	
IYK2Z1V1/MV2C	EOD	2014-02-18-08.54.11	GCDSA	ABOVEBAR	CICS	17	0	0	0	0K	
IYK2Z1V1/MV2C	EOD	2014-02-18-08.54.11	GUDSA	ABOVEBAR	USER	18	0	0	0	0K	
IYK2Z1V1/MV2C	INT	2014-02-18-08.59.00	CDSA	BELOW	CICS	1	62	62	0	0K	
IYK2Z1V1/MV2C	INT	2014-02-18-08.59.00	UDSA	BELOW	USER	2	1	1	0	0K	
IYK2Z1V1/MV2C	INT	2014-02-18-08.59.00	ECDSA	ABOVE	CICS	9	7405	7363	133296	184K	4
IYK2Z1V1/MV2C	INT	2014-02-18-08.59.00	EUDSA	ABOVE	USER	10	86	66	80320	1M	2
IYK2Z1V1/MV2C	INT	2014-02-18-08.59.00	GCDSA	ABOVEBAR	CICS	17	1	1	0	0K	
IYK2Z1V1/MV2C	INT	2014-02-18-08.59.00	GUDSA	ABOVEBAR	USER	18	0	0	0	0K	
IYK2Z1V1/MV2C	EOD	2014-02-20-09.20.33	CDSA	BELOW	CICS	1	81	81	0	0K	
IYK2Z1V1/MV2C	EOD	2014-02-20-09.20.33	UDSA	BELOW	USER	2	3	3	0	0K	
IYK2Z1V1/MV2C	EOD	2014-02-20-09.20.33	ECDSA	ABOVE	CICS	9	7937	7918	73344	96K	1
IYK2Z1V1/MV2C	EOD	2014-02-20-09.20.33	EUDSA	ABOVE	USER	10	331	320	44176	704K	1
IYK2Z1V1/MV2C	EOD	2014-02-20-09.20.33	GCDSA	ABOVEBAR	CICS	17	1	1	0	0K	
IYK2Z1V1/MV2C	EOD	2014-02-20-09.20.33	GUDSA	ABOVEBAR	USER	18	11	11	0	0K	
V5R2M0 CICS Performance Analyzer Stats List - Transaction Dump Overview											
LS087A01 Printed at 13:22:50 3/16/2014 Data from 07:59:00 18/02/2014										Page	
System	Type	Collection Time	Transaction Dumps Taken	Transaction Dumps Suppressed							
IYK2Z1V1/MV2C	INT	2014-02-18-07.59.00	0	0							
IYK2Z1V1/MV2C	EOD	2014-02-18-08.54.11	0	0							
IYK2Z1V1/MV2C	INT	2014-02-18-08.59.00	0	0							
IYK2Z1V1/MV2C	EOD	2014-02-20-09.20.33	1	2							
:											

Figure 246. Statistics List report - sample form-based tabular report

## STATSALERT - Statistics Alert reports

The STATSALERT operand requests a Statistics Alert report.

The command format for a Statistics Alert report is:

```
CICSPA STATSALERT([OUTPUT(ddname),]  
    [EXTERNAL(ddname),]  
    STALTDEF(statistics-alert-definition),  
    [BY(APPLID([LIST,SUMMARY])]
```

```

ALERT[(LIST,SUMMARY)]|
COLLECT|
INTERVAL|
RESOURCE),,]
[TYPE(EOD,INT,USS,REQ,RRT),,]
[LINECount(nnn),,]
[TITLE1('...up to 64 characters...'),,]
[TITLE2('...up to 64 characters...')]]

```

The options are:

#### **STALTDEF(statistics-alert-definition)**

The name of the Statistics Alert Definition that you want to use for this report. For details, see Chapter 14, “Statistics alert reporting,” on page 355.

In the JCL for the report, the DDname CPAHDBRG identifies the Repository data set that defines the Alert Definition.

**BY(...)** The sort order of the report. For reports sorted by APPLID or Alert, you can specify a report type: List (the default), Summary, or both. Other sorting options are available only as List reports.

List reports show each instance of an Alert on a separate row, with details such as the threshold value and the Formula value that triggered the Alert.

Summary reports show the number of Alerts for the report period, rather than the details of each instance.

#### **TYPE(...)**

The types of statistics intervals to include in the report.

#### **LINECount**

Controls the number of lines per page in the report. See “LINECount” on page 392 for further information.

#### **TITLE1, TITLE2**

Controls the report title (left and right half of subheading line) for the report. See “TITLE1 and TITLE2” on page 392 for further information.

#### **OUTPUT**

Controls the report output DDname. If not specified, CICS PA assigns a DDname in the format **STALnnnn** where nnnn is the report sequence number **0001-9999** to uniquely identify the output. See “OUTPUT” on page 390 for further information.

#### **EXTERNAL**

Specifies the DDname for the work data set used by the external SORT facility. If not specified, CICS PA assigns an External Work File from a pool of External Work Files with DDnames in the format **CPAXWnnn** where nnn is the sequence number **001-999**. See “EXTERNAL” on page 391 for further information.

## **STATSALERT examples**

Example: List and Summary by APPLID

This example produces a “List by APPLID” report followed by a “Summary by APPLID” report in the same output data set, STAL0001, as shown in Figure 247 on page 502 and Figure 248 on page 503:

CICSPA STATSALERT(OUTPUT(STAL0001),  
EXTERNAL(CPAXW001),  
STALTDEF(SAMPLE2),  
BY(APPLID(LIST,SUMMARY)),  
TYPE(EOD,REQ,RRT,INT,USS))

V5R2M0

CICS Performance Analyzer  
Statistics Alerts - List by APPLID

STAL0001 Printed at 12:03:45 11/12/2013 Data from 02:33:10 1/12/2009 to 09:24:07 1/14/2009

Page 1

System: CCVQ32C Image: FTS1 VRM: 650 Type: TS

Sev	Alert	Threshold	Actual	Collection Time	Type
W	Program load requests that waited	>0	2	2009-01-13 00.00.01	EOD
I	DSA limit	>=0K	5120K	2009-01-13 00.00.01	EOD
I	DSA allocated	>=0K	2304K	2009-01-13 00.00.01	EOD
I	DSA peak	>=0K	2304K	2009-01-13 00.00.01	EOD
I	EDSA limit	>=0K	614400K	2009-01-13 00.00.01	EOD
I	EDSA allocated	>=0K	49152K	2009-01-13 00.00.01	EOD
I	EDSA peak	>0K	49152K	2009-01-13 00.00.01	EOD
I	MEMLIMIT size	>=0M	0M	2009-01-13 00.00.01	EOD
I	Active address space: current	>=0M	0M	2009-01-13 00.00.01	EOD
I	Active address space: peak	>=0M	0M	2009-01-13 00.00.01	EOD
I	Active GDSA: current	>=0M	0M	2009-01-13 00.00.01	EOD
I	Active GDSA: peak	>=0M	0M	2009-01-13 00.00.01	EOD
I	Dispatcher settings: ICV (ms)	*	5.000	2009-01-13 00.00.01	EOD
I	Dispatcher settings: ICVR (ms)	*	5.000	2009-01-13 00.00.01	EOD
I	Dispatcher settings: ICVTSD (ms)	*	5.000	2009-01-13 00.00.01	EOD
I	Dispatcher settings: PRTYAGE (ms)	*	32.768	2009-01-13 00.00.01	EOD
I	Dispatcher settings: SUBTSKS	*	1	2009-01-13 00.00.01	EOD
I	Dispatcher settings: MROBTCH	*	1	2009-01-13 00.00.01	EOD
I	Open TCBs limit	*	12	2009-01-13 00.00.01	EOD
	TCB Pool = OPEN				
I	Open TCBs current	*	0	2009-01-13 00.00.01	EOD
	TCB Pool = OPEN				
:					
I	Program load-to-use ratio (%)	>=25	100	2009-01-13 00.00.01	EOD
	Program Name = CEEEV003				
:					

System: CCVQ32D1 Image: FTS1 VRM: 650 Type: TS

Sev	Alert	Threshold	Actual	Collection Time	Type
W	Program load requests that waited	>0	8	2009-01-13 00.00.00	EOD
W	Maximum active transactions in class reached	>0	329	2009-01-13 00.00.00	EOD
	Tclass Name = DFHTCL02				
:					

Figure 247. Statistics Alerts - List by APPLID report

System: CCVQ32C Image: FTS1 Type: TS

Sev	Alert	Intervals	Alerts
W	Program load requests that waited	1	1
I	Tasks: limit	1	1
I	Tasks: current	1	1
I	Tasks: peak	1	1
I	Tasks: total	1	1
I	Transaction class: task limit	6	14
	Tclass Name = DFHCOMCL		1
	Tclass Name = DFHEDFTC		1
	Tclass Name = DFHTCIND		1
:			

System: CCVQ32D1 Image: FTS1 Type: TS

Sev	Alert	Intervals	Alerts
W	Maximum active transactions in class reached	1	1
	Tclass Name = DFHTCL02		1
W	Temporary storage: buffer waits on DFHTEMP	1	1
W	Program load requests that waited	1	1
I	Tasks: limit	1	1
I	Tasks: current	1	1
I	Tasks: peak	1	1
I	Tasks: total	1	1
I	Transaction class: task limit	6	14
	Tclass Name = DFHCOMCL		1
	Tclass Name = DFHEDFTC		1
	Tclass Name = DFHTCIND		1
:			

Figure 248. Statistics Alerts - Summary by APPLID report

## CTGSTATISTICS - CICS TG Statistics reports

The CTGSTATISTICS operand requests the CICS Transaction Gateway statistics reports.

The command format is:

```
CICSPA CTGSTATISTICS[(
    [OUTPUT(ddname|STTG0001),]
    [EXTERNAL(ddname),]
    [LINECNT(nnn),]
    [ACTIVITY,]
    [USAGE(RATIO(90),]
    [CONFIGURATION,]
    [CLIENTWORKLOAD,]
    [CICSWORKLOAD,]
    [TITLE1('...sub-heading left ...'),]
    [TITLE2('...sub-heading right...')]]]
```

The options are:

### OUTPUT

Controls the report output DDname. If not specified, CICS PA assigns a DDname in the format **STTGnnnn** where nnnn is the report sequence number **0001-9999**. See “OUTPUT” on page 390 for further information.

### EXTERNAL

Specifies the optional DDname for the work data set used by the external SORT facility. If specified, CICS PA performs an external sort. If not specified, CICS PA performs an internal sort where the records are sorted in storage by CICS PA. The CICS PA dialog always generates the EXTERNAL operand with a DDname in the format **CPAXWnnn** where nnn is the sequence number **001-999**. See “EXTERNAL” on page 391 for further information.

## LINECount

Controls the number of lines per page. See "LINECount" on page 392 for further information.

## ACTIVITY

Requests the Activity Summary report.

## USAGE

Requests the Usage and Capacity report.

## CONFIGURATION

Requests the Configuration Summary report.

## CLIENTWORKLOAD

Requests the Client Workload report.

## CICSWORKLOAD

Requests the CICS Workload report.

## RATIO

This option applies only to the Usage and Capacity report. A warning indicator is displayed against the EXCI pipes or IPIC sessions columns when the Num/Max or Num/Avail ratio exceeds the specified value. The default is 90.

## TITLE1, TITLE2

Controls the report title (left and right half of subheading line). See "TITLE1 and TITLE2" on page 392 for further information.

## CTGSTATISTICS examples

The following command produces the Activity Summary report and the Usage and Capacity report. The capacity ratio in the Usage and Capacity report is specified as 30.

```
CICSPA CTGSTATISTICS(OUTPUT(STTG0001),
    ACTIVITY,
    USAGE(RATIO(30)))
```

```
V5R2M0
CICS Performance Analyzer
CICS Transaction Gateway - Activity Summary

STTG0001 Printed at 12:03:45 11/12/2013    Data from 11:30:00 11/12/2013 to 13:00:00 11/12/2013    Page    1

Gateway ID      Start time      Up time      Number of  Number of  Peak  Peak TPS time      Connect  Worker
CICSTG.CAI000   2013-11-12 12.33   0days 00.22.15  Intervals requests TPS      2013-11-12 12.55.00  Timeouts Timeouts
                  6                626066      617
                  0                0
```

Figure 249. CICS Transaction Gateway - Activity Summary report

```
CICS Transaction Gateway - Usage and Capacity

STTG0002 Printed at 12:03:45 11/12/2013    Data from 11:30:00 11/12/2013 to 13:00:00 11/12/2013    Page    1

Gateway ID : GBIBMIYA.CTGA22  Jobname : CTGA22  VRM : 800 Start Time : 2013-11-12 12.33
Collection time  Region      Java heap  Clients  Workers  EXCI pipes  IPIC sessions  Client Connections
                  Size/Max    Size/Max    Peak/Max  Peak/Max    Num/Max    Num/Avail    Established/New
2013-11-12 12.35.00  351M/400M  37M/128M  100/250  106/250  106/250 *    0/100        1/0
2013-11-12 12.40.00  357M/400M  39M/128M  100/250  106/250  106/250 *    47/100 *     0/0
2013-11-12 12.45.00  359M/400M  39M/128M  100/250  105/250  106/250 *    47/100 *     2/0
2013-11-12 12.50.00  358M/400M  35M/128M  100/250  105/250  106/250 *    20/100       1/0
2013-11-12 12.55.00  358M/400M  39M/128M  100/250  105/250  106/250 *    49/100 *     1/0
2013-11-12 12.56.00  358M/400M  36M/128M  100/250  103/250  106/250 *    0/100        0/0
```

Figure 250. CICS Transaction Gateway - Usage and Capacity report

---

## DB2 - DB2 report

The **DB2** operand requests the DB2 report.

**Note:** To maximize the DB2 details available for reporting, define your CICS-DB2 resources with ACCOUNTREC(TASK) or ACCOUNTREC(UOW). See the *CICS DB2 Guide* for more information on accounting for DB2 resources and the setup required.

The command format is:

```
CICSPA DB2(
    [OUTPUT(ddname),]
    [EXTERNAL(ddname),]
    [LIST(
        CLASS1,CLASS2,CLASS3,BUFFER,LOCKING,DML1,DML2|ALL),]
    [LONGSUMMARY(
        CLASS1,CLASS2,CLASS3,BUFFER,LOCKING,DML1,DML2|ALL),]
    [SHORTSUMMARY,]
    [SSID(id1,id2,...),]
    [CMFONLY,]
    [LISTZERO,]
    [MAXLONGSUM|NOMAXLONGSUM,]
    [LINECOUNT(nnn),]
    [TITLE1('...sub-heading left ...'),]
    [TITLE2('...sub-heading right...'),]
    [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),
        ...))])
```

The options are:

### OUTPUT

Controls the report output DDname. If not specified, CICS PA assigns a DDname in the format **DB2Rnnnn** where nnnn is the report sequence number **0001-9999**. See “OUTPUT” on page 390 for further information.

### EXTERNAL

Specifies the DDname for the work data set used by the external sort facility. If not specified, CICS PA assigns an External Work File from a pool of External Work Files with DDnames in the format **CPAXWnnn** where nnn is the sequence number **001-999**. See “EXTERNAL” on page 391 for further information.

**LIST** Requests the DB2 List report, a detailed list of all network units-of-work with DB2 activity. This report consolidates CICS CMF performance class records and DB2 accounting statistics from a single or multiple CICS systems. Each line on the report is a single CMF performance or DB2 accounting record.

Specify one or more of the following operands (or **ALL**) to control which DB2 accounting details are to be reported.

**Note:** **Thread Identification** is always reported.

#### CLASS1

Thread Time

#### CLASS2

In-DB2 Time

#### CLASS3

Suspend Time

**BUFFER**

Buffer Manager Summary

**LOCKING**

Locking Summary

**DML1** SQL DML Query/Update**DML2** SQL DML 'Other'

If LIST is specified without operands, the default is  
**LIST(CLASS1,CLASS2,BUFFER,LOCKING).**

**LONGSUMmary**

Requests the DB2 Long Summary report which summarizes these details by transaction and program (CMF performance data) and SSID and plan (DB2 accounting data) within APPLID. For each, average and maximum values are reported. CMF performance data is presented in columns across the page and associated DB2 accounting data is presented in rows down the page.

Specify one or more of the following operands (or **ALL**) to control which of the DB2 accounting details to include in the report.

**Note: Thread Utilization** is always reported.

**CLASS1**

Thread Time

**CLASS2**

In-DB2 Time

**CLASS3**

Suspend Time

**BUFFER**

Buffer Manager Summary

**LOCKING**

Locking Summary

**DML1** SQL DML Query/Update**DML2** SQL DML 'Other'

If LONGSUM is specified without operands, the default is  
**LONGSUM(CLASS1,CLASS2,BUFFER,LOCKING).**

**SHORTSUMmary**

Requests the DB2 Short Summary report, an abridged version of the DB2 Long Summary report, giving averages only (no maximums). This is the default report.

**SSID** Requests reporting to be limited to the DB2 Subsystem IDs that match the specified IDs or patterns. Masking characters are supported: % for one and only one character, and \* for many or none.

**CMFONLY**

Requests CICS PA to process only CMF performance (SMF 110) records and not DB2 accounting records. If not specified, CICS PA will also process associated DB2 accounting (SMF 101) records. The default is to process both.

**LISTZERO**

Applies to the DB2 List report. Specify this option to report CMF performance records with DB2REQCT=0 provided they are part of a network unit-of-work that has some DB2 activity. The default is to omit the CMF performance records with no DB2 activity.



## MAXLONGSUM|NOMAXLONGSUM

Applies to the DB2 Long Summary report.

**MAXLONGSUM** requests that both average and maximum values are to be reported in the DB2 accounting detail lines. This is the default.

**NOMAXLONGSUM** requests that only the averages are to be reported (maximum values omitted).

## **LINECount**

Controls the number of lines per page. See “LINECount” on page 392 for further information.

## **TITLE1, TITLE2**

Controls the report title (left and right half of subheading line). See “TITLE1 and TITLE2” on page 392 for further information.

## **SELECT(PERFORMANCE(INCLUDE|EXCLUDE**

Specifies what data to include or exclude from the report based on data field values. See “Using SELECT statements” on page 525 for a detailed explanation and examples.

## **DB2 examples**

Example 1: Default report (DB2 Short Summary)

This example produces the default report like that shown in Figure 251. The default is the Short Summary report with both CMF performance records (SMF 110) and DB2 accounting (SMF 101) records reported. CMF performance records with DB2REQCT=0 are not included.

CICSPA DB2

The following command achieves the same:

CICSPA DB2(SHORTSUM)

V5R2M0		CICS Performance Analyzer											
		<u>DB2 - Short Summary</u>											
DB2R0001 Printed at 12:03:45 11/12/2013		Data from 15:48:40 7/12/2004 to 15:50:42 7/12/2004				APPLID CICS53T1		Page	1				
Tran/	Program/	#Tasks/	.....Average Elapsed Time.....			.....Average CPU Time.....			.....Average Count.....			#Abends	
SSID	Planname	#Threads	Response	Thread	In-DB2	DB2ConWt	DB2ThdWt	User	Thread	In-DB2	DB2Reqs	GetPage	SysPgUpd
CRD7	CORD07P	2	.4043			.0000	.0000	.031008			3.0		
DB2P	CPAPLAN	2		.0631	.0106			.011408	.009811		4.0	.0	0
CRD9	CORD09P	2	.4091			.0000	.0000	.030680			3.0		
DB2P	CPAPLAN	2		.0776	.0104			.011478	.009870		4.0	.0	0
SALE	DFH0SAL2	10	.2271			.0000	.0000	.038147			1.0		
DB2P	CPAPLAN	10		.1394	.0033			.003865	.003136		N/P	N/P	0
SAL1	DFH0SAL1	2	1.0268			.0000	.0000	.038656			1.0		
DB2P	CPAPLAN	2		.7898	.0033			.003843	.003114		N/P	N/P	0
*** Total ***		16	.3720			.0000	.0000	.036385			1.5		
DB2P		16		.2034	.0051			.005757	.004809		4.0	.0	0

Figure 251. DB2 report (Short Summary)

Example 2: DB2 Long Summary

This example produces a DB2 Long Summary like that in Figure 252 on page 508.

CICSPA DB2(LONG(CLASS1,CLASS2,BUFFER,LOCKING))

These are the default DB2 accounting details for the DB2 Long Summary. The following command achieves the same:

## CICSPA DB2 (LONGSUM)

V5R2M0

## CICS Performance Analyzer DB2 - Long Summary

DB2R0001 Printed at 12:03:45 11/12/2013 Data from 16:58:04 7/03/2004 to 16:17:57 7/12/2004 APPLID CICS53A1 Page 1

Tran/ SSID	Program/ Planname	#Tasks/ #Threads	Avg DB2ConWt Time	Max DB2ConWt Time	Avg DB2ThdWt Time	Max DB2ThdWt Time	Avg DB2Rqst Count	Max DB2Rqst Count	Avg UserCPU Time	Max UserCPU Time	Avg Response Time	Max Response Time	#Abends			
CRDE	CORD14P	2	.0000	.0000	.0000	.0000	24.0	24	.036896	.052480	.3141	.5208	0			
DB2P	CPAPLAN	4	Thread Utilization Class1: Thread Time			Entry= Avg: Elapsed= Max: Elapsed=	0 .0369 .0395	Pool= CPU=	4 .020809 .024879	Command= 0						
			Class2: In-DB2 Time			Avg: Elapsed= Max: Elapsed=	.0166 .0201	CPU= CPU=	.015381 .019369							
			Buffer Manager Summary			Avg: GtPgRq= Max: GtPgRq=	3.3 7	SyPgUp= SyPgUp=	.0 0							
			Locking Summary			Avg: Suspnd= Max: Suspnd=	.0 0	DeadLk= DeadLk=	.0 0	TimeOut= TimeOut=	.0 0	MxPgLk= MxPgLk=	1.0 1			
CRD4	CORD04P	3	.0000	.0000	.0000	.0000	3075.3	9178	1.593973	4.693520	8.5758	24.9328	0			
DB2P	CPAPLAN	4	Thread Utilization Class1: Thread Time			Entry= Avg: Elapsed= Max: Elapsed=	0 .0569 .0850	Pool= CPU=	4 .025045 .029168	Command= 0						
			Class2: In-DB2 Time			Avg: Elapsed= Max: Elapsed=	.0205 .0241	CPU= CPU=	.018777 .022986							
			Buffer Manager Summary			Avg: GtPgRq= Max: GtPgRq=	3.3 7	SyPgUp= SyPgUp=	.0 0							
			Locking Summary			Avg: Suspnd= Max: Suspnd=	.0 0	DeadLk= DeadLk=	.0 0	TimeOut= TimeOut=	.0 0	MxPgLk= MxPgLk=	1.0 1			
*** Total ***			23	.0000	.0000	.0000	.0000	417.3	9178	.227745	4.693520	1.2403	24.9328	0		
DB2P		26	Thread Utilization Class1: Thread Time			Entry= Avg: Elapsed= Max: Elapsed=	0 .0702 .5211	Pool= CPU=	26 .025824 .055524	Command= 0						
			Class2: In-DB2 Time			Avg: Elapsed= Max: Elapsed=	.0204 .0471	CPU= CPU=	.018508 .040673							
			Buffer Manager Summary			Avg: GtPgRq= Max: GtPgRq=	2.8 11	SyPgUp= SyPgUp=	.0 0							
			Locking Summary			Avg: Suspnd= Max: Suspnd=	.0 0	DeadLk= DeadLk=	.0 0	TimeOut= TimeOut=	.0 0	MxPgLk= MxPgLk=	1.0 1			

Figure 252. DB2 report (Long Summary)

### Example 3: DB2 List and DB2 Recap

This produces a DB2 List report like that in Figure 253 on page 509. An example of the Recap report which is always printed at the end of processing is shown in Figure 254 on page 509.

CICSPA DB2(LIST(ALL),LISTZERO)

DB2R0001 Printed at 12:03:45 11/12/2013 Data from 15:41:19 7/12/2004 to 16:19:15 7/12/2004

Page 1

Tran/ SSID	Userid/ Authid	Program/ Planname	APPLID	UOW Task	R Seq	T Term	LUName	..DB2 Connect	Wait Thread	Time.. ReqCnt	DB2 User CPU Time	Start Time	Stop Time	Response Time	A B
CRD8	CICSUSER	CORD08P	CICPAOR1	53	2	T	<AAK CICPTOR1	.0000	.0000	22	.0185	15:49:40.023	15:49:40.105	.0827	
CRD5	CICSUSER	CORD05P	CICPAOR1	52	2	T	<AAK CICPTOR1	.0000	.0000	12	.0137	15:49:39.960	15:49:40.016	.0566	
CRDD	CICSUSER	CORD13P	CICPTOR1	45	1	T	0013 TCP00013	N/A	N/A	0	.0390	15:49:39.521	15:49:40.121	.6006	
DB2P CICSUSER CPAPLAN CICPAOR1 52 Thread Identification ID=POOLCRD50001 NETName=P390.TCP00013 UOWID=1F7D3A6472BA															
Begin Time: 15:49:39.969 7/12/03 End Time: 15:49:40.007 7/12/03															
Class1: Thread Time Elapsed= .0379 CPU= .019536															
Class2: In-DB2 Time Elapsed= .0184 CPU= .014040															
Class3: Suspend Time Total = N/P I/O= N/P Lock/Latch= N/P Other= N/P															
Buffer Manager Summary GtPgRq= 2 SyPgUp= 0															
Locking Summary Suspnd= 0 DeadLk= 0 TmeOut= 0 MxPgLk= 1															
SQL DML Query/Update Sel= 0 Ins= 0 Upd= 0 Del= 0															
SQL DML 'Other' Des= 0 Pre= 0 Ope= 1 Fet= 10 Clo= 1															
DB2P CICSUSER CPAPLAN CICPAOR1 53 Thread Identification ID=POOLCRD50001 NETName=P390.TCP00013 UOWID=1F7D3A6472BA															
Begin Time: 15:49:40.032 7/12/03 End Time: 15:49:40.097 7/12/03															
Class1: Thread Time Elapsed= .0654 CPU= .031185															
Class2: In-DB2 Time Elapsed= .0231 CPU= .021452															
Class3: Suspend Time Total = N/P I/O= N/P Lock/Latch= N/P Other= N/P															
Buffer Manager Summary GtPgRq= 2 SyPgUp= 0															
Locking Summary Suspnd= 0 DeadLk= 0 TmeOut= 0 MxPgLk= 1															
SQL DML Query/Update Sel= 0 Ins= 0 Upd= 0 Del= 0															
SQL DML 'Other' Des= 0 Pre= 0 Ope= 1 Fet= 20 Clo= 1															

Figure 253. DB2 report (List)

DB2R0001 Printed at 12:03:45 11/12/2013 Data from 15:41:19 7/12/2004 to 16:19:15 7/12/2004

Page 1

Records processed by the DB2 report processor:

	Count	% of Total
CMF performance class records:	-----	-----
Included . . . . .	120	.6%
Excluded:		
CICS PA record selection . . . . .	20,670	99.4%
No DB2 activity . . . . .	0	.0%
Other . . . . .	0	.0%
Total . . . . .	20,790	
DB2 accounting records:		
Included . . . . .	30	.5%
Excluded:		
CICS PA record selection . . . . .	0	.0%
Not CICS Attach . . . . .	368	6.6%
Accounting Token not set . . . . .	5,196	92.9%
Other . . . . .	0	.0%
Total . . . . .	5,594	

Network units-of-work with DB2 activity:

	Count	% of Total
Network units-of-work where:	-----	-----
DB2 accounting records were resolved . . . . .	30	100.0%
DB2 accounting records were not resolved . . . . .	0	.0%
DB2 accounting records were not present . . . . .	0	.0%
Total . . . . .	30	
CMF performance class records with DB2 activity:		
Matched to a DB2 accounting record . . . . .	30	100.0%
Not matched to any DB2 accounting records . . . . .	0	.0%
Total . . . . .	30	
CMF performance class records with no DB2 activity:		
Total . . . . .	0	
DB2 accounting records:		
Eligible for summary reporting . . . . .	30	100.0%
Matched to a single CICS task . . . . .	30	100.0%
Matched to two or more CICS tasks . . . . .	0	.0%
Not matched to any CICS tasks . . . . .	0	.0%
Total . . . . .	30	

Figure 254. DB2 report (Recap)

## MQ - WebSphere MQ report

The MQ operand requests the WebSphere MQ report.

**Note:** WebSphere MQ accounting records are produced when the Accounting Trace component of WebSphere MQ is activated. If the MQ accounting trace is active, CLASS(1) subtype 0 records are always produced, but subtypes 1 and 2 are only produced if CLASS(3) is specified when the trace is activated.

See the *WebSphere MQ for z/OS System Setup Guide* for more information on accounting for WebSphere MQ resources and the setup required.

The command format is:

```
CICSPA MQ(
    [OUTPUT(ddname),]
    [LIST,]
    [SUMMARY,]
    [CLASS1|CLASS3,]
    [SORT([TRAN,][QUEUE]),]
    [QNAME(name),]
    [SSID(id1,id2,...),]
    [LINECount(nnn),]
    [TITLE1('...sub-heading left ...'),]
    [TITLE2('...sub-heading right...'),]
    [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),
        ...))])
```

The options are:

#### **OUTPUT**

Controls the report output DDname. If not specified, CICS PA assigns a DDname in the format **MQ00nnnn** where nnnn is the report sequence number **0001-9999**. See “OUTPUT” on page 390 for further information.

**LIST** Requests the WebSphere MQ List report.

#### **SUMMARY**

Requests the WebSphere MQ Summary report.

#### **CLASS1|CLASS3**

CLASS1 requests the reports to process MQ Class 1 records. This is the default.

CLASS3 requests the reports to process MQ Class 3 records.

If the List report is requested, CLASS1 and CLASS3 cannot both be specified because of the different report formats.

**SORT** Specifies the required sorting sequence of the Class 3 Summary report. The choices are:

1. SORT(TRAN) sorts by Transaction ID. This is the default.
2. SORT(QUEUE) sorts by WebSphere Queue name.
3. SORT(TRAN,QUEUE) sorts by Transaction ID, then Queue name.
4. SORT(QUEUE,TRAN) sorts by Queue name, then Transaction ID.

#### **QNAME**

Selects records for a particular WebSphere MQ queue name. You can specify a pattern such as CICS<sup>SM</sup>Q\* to include more than one queue name. The queue name is case-sensitive.

**SSID** Requests reporting to be limited to the MQ Subsystem IDs that match the specified IDs or patterns. Masking characters are supported: % for one and only one character, and \* for many or none.

#### **LINECount**

Controls the number of lines per page. See “LINECount” on page 392 for further information.

## TITLE1, TITLE2

Controls the report title (left and right half of subheading line). See “TITLE1 and TITLE2” on page 392 for further information.

## SELECT(PERFORMANCE(INCLUDE|EXCLUDE

Specifies what data to include or exclude from the report based on data field values. See “Using SELECT statements” on page 525 for a detailed explanation and examples.

The fields that can be specified in Selection Criteria for filtering MQ accounting (SMF 116) records are:

### APPLID

CICS APPLID

TRAN CICS Transaction ID

### TASKNO

CICS Task ID

### START

Thread Start Time

STOP Thread End Time

### ACTIVE

Thread Begin-End Time

## MQ examples

Example 1: Default report (MQ Class 1 Summary)

This example produces the default report like that shown in Figure 255. The default is the Summary report for Class 1 data.

CICSPA MQ

The following command achieves the same:

CICSPA MQ(SUMMARY,CLASS1)

V5R2M0			CICS Performance Analyzer WebSphere MQ Class 1 Summary										
MQ000001 Printed at 12:03:45 11/12/2013 Data from 14:50:34 1/13/2004 to 14:51:24 1/13/2004										Page	1		
----- Key -----			Count	----- Average CPU -----	----- Calls -----	----- Average GET Counts -----				----- Average PUTx Counts -----			
SSID	APPLID	TRAN				<=99	<=999	<=9999	>=10000	<=99	<=999	<=9999	>=10000
MQMD	CICS53A1	CKCN	1	0.000747	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MQMD	CICS53A1	CKTI	1	0.001541	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MQMD	CICS53A1	MQA1	1	0.064342	60.0	0.0	0.0	0.0	0.0	60.0	0.0	0.0	0.0

Figure 255. MQ Summary report (Class 1)

## OMEGAMON - OMEGAMON reports

The OMEGAMON operand requests the OMEGAMON reports.

The command format is:

```
CICSPA OMEGAMON([  
  [OUTPUT(ddname|OMEG0001),]  
  [LINECNT(nnn),]  
  [DBMS(ADABAS, DATACOM, IDMS, SUPRA),]  
  [LIST,]  
  [SUMMARY(TRAN, DATABASE, AVG, MAX, MIN, TOT, DEV, PEAK(percentile)),]  
  [PRINT(TOTALS, DB),]
```

```
[TITLE1('...sub-heading left ...'),]
[TITLE2('...sub-heading right...')]
[SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),
...))]]]
```

The options are:

#### **OUTPUT**

Controls the report output DDname. If not specified, CICS PA assigns a DDname in the format **OMEGnnnn** where nnnn is the report sequence number **0001-9999**. See “OUTPUT” on page 390 for further information.

#### **LINECount**

Controls the number of lines per page. See “LINECount” on page 392 for further information.

#### **DBMS**

The types of DBMS for which you want to produce reports.

**LIST** Requests the OMEGAMON List report.

#### **SUMMARY**

Requests the OMEGAMON Transaction Summary report (**TRAN**), the Database Summary report (**DATABASE**), and also the statistical functions that these reports use to summarize transaction data:

**AVG** Average

**MAX** Maximum

**MIN** Minimum

**TOT** Total

**DEV** Standard deviation

**PEAK** Peak percentile. Specify a percentile value between 50 and 100 to report the value for that percentage of transactions. Computations assume a normal distribution. For example, specify **PEAK(95)** to report the value for 95% of transactions.

Each statistical function that you specify produces additional rows in the reports, with the function name as the row heading.

#### **PRINT**

Each OMEGAMON XE for CICS (SMF 112) record contains database usage details for a single transaction. A transaction might use one database, or it might use multiple databases from different types of DBMS. For each type of DBMS used by the transaction, the record contains a “totals” segment. For each database used by the transaction, the record contains a “detail” segment.

##### **PRINT(TOTALS)**

Includes totals sections in a report, using information from totals segments in the input records.

##### **PRINT(DB)**

Includes database sections in a report, using information from detail segments in the input records.

The **PRINT** operand is relevant only to the List report and the Transaction Summary report; it has no effect on the Database Summary report.

#### **TITLE1, TITLE2**

Controls the report title (left and right half of subheading line). See “TITLE1 and TITLE2” on page 392 for further information.

**SELECT(PERFORMANCE(INCLUDE|EXCLUDE**

Specifies what data to include or exclude from the report based on data field values. See “Using SELECT statements” on page 525 for a detailed explanation and examples.

CICS PA checks only the following Performance Selection Criteria fields when filtering OMEGAMON records:

**APPLID**

CICS APPLID

**FILENAME**

Database (or file) name

**NETUOWPX**

Originating System VTAM network name

**START**

Task start time.

**Note:** Report Interval-based selection for OMEGAMON XE for CICS records is limited to the Attach (START) time; the STOP and ACTIVE options are ignored.

**TASKNO**

Transaction identification number

**TRAN** CICS transaction ID**UOWID**

Unit of work ID

All other fields are ignored.

## OMEGAMON examples

Example 1: Default report (both summary reports)

The default is the Database Summary report and Transaction Summary report for all types of DBMS. The following example shows a Transaction Summary report.

CICSPA OMEGAMON

V5R2M0		CICS Performance Analyzer													
		OMEGAMON - CA-DATACOM Transaction Summary													
OMEG0001 Printed at 12:03:45 11/12/2013		Data from 20:41:14 18/09/2006 to 23:01:08 18/09/2006													
		Page 1													
Tran	#Tasks	Totals													
-----															
DC01	1022	Elapse	Avg	8.0748	.3218	.2696	.2683	.2879	1.3106	.1756	.1304				
			Max	219.9388	31.9160	15.7942	10.2236	6.1604	64.1597	27.1319	56.1644				
		Count	Avg	1	1	1	1	1	1	1	1	1			
			Max	1	1	1	1	1	1	1	1	1			
					Log Oper	Read	Release	Select	Sel Set	Sys/Othr	Update				
					-----										
		Elapse	Avg	.1059	.0851	.1009	.2673	.1338	.0733	.0934					
			Max	18.5467	19.4642	7.1434	70.1891	34.6685	2.9491	3.8011					
		Count	Avg	1	1	1	1	1	1	1	1				
			Max	1	1	1	1	1	1	1	1				
		#Tasks	Database		Add	Count	Delete	Get Next	Get Set	Loc Spec	Read	Release	Select	Sel Set	Update
-----															
1	TBL998	Elapse	Avg	.0655	.0000	.0000	.0000	.0000	.0000	.0000	.3277	.0000	.0000		
			Max	.0655	.0000	.0000	.0000	.0000	.0000	.0000	.3277	.0000	.0000		
		Count	Avg	1	1	1	1	1	1	1	1	1	1	1	
			Max	1	1	1	1	1	1	1	1	1	1	1	
		:													
		(other databases for this transaction)													
:															
#Tasks	Database		Add	Count	Delete	Get Next	Get Set	Loc Spec	Read	Release	Select	Sel Set	Update		
-----															
1022	*Total*	Elapse	Avg	8.0748	.2696	.2683	.2879	1.3106	.1304	.0851	.1009	.2673	.1338	.0934	
			Max	219.9388	15.7942	10.2236	6.1604	64.1597	56.1644	19.4642	7.1434	70.1891	34.6685	3.8011	
		Count	Avg	1	1	1	1	1	1	1	1	1	1	1	
			Max	1	1	1	1	1	1	1	1	1	1	1	
		:													
		(other transactions for this DBMS)													

Figure 256. OMEGAMON CA-Datcom Transaction Summary report

## LOGGER - System Logger report and extract

The **LOGGER** operand requests the System Logger report or extract.

The command format for the System Logger report is:

```
CICSPA LOGGER(
    [OUTPUT(ddname),]
    [EXTERNAL(ddname),]
    [SUMMARY[(SUMMARYINTERVAL(hh:mm))],]
    [LIST[(ALTER,TIMESEQ)],]
    [INTERVAL(minutes),]
    [SORT(LOGSTREAM|STRUCTURE),]
    [TITLE1('...up to 64 characters...'),]
    [TITLE2('...up to 64 characters...'),]
    [SELECT(LOGGER(INCLUDE|EXCLUDE(field1(values1),...), ...))]
    [LOGSTREAM('name.or.pattern'),]
    [STRUCTURE('name.or.pattern'),])
```

The command format for the System Logger extract is:

```
CICSPA LOGGER(
    [OUTPUT(ddname),]
    [DDNAME(ddname),]
    [DELIMIT('field-delimiter'),]
    [LABELS|NOLABELS,]
    [FLOAT,]
    [SELECT(LOGGER(INCLUDE|EXCLUDE(field1(values1),...), ...))]
    [LOGSTREAM('name.or.pattern'),]
    [STRUCTURE('name.or.pattern'),])
```

The options are:



## OUTPUT

Controls the report output DDname. See “OUTPUT” on page 390 for further information. If not specified, CICS PA assigns a DDname in the format **xxxxnnnn** where **nnnn** is the report sequence number **0001-9999** to uniquely identify the output, and **xxxx** is:

**LOGR** for the System Logger report.

**LOEX** for the Recap report for the System Logger extract.

## DDNAME

Specifies the DDname of the extract data set where the extracted data is written. When this operand is specified, instead of producing the report, CICS PA produces the extract file, and a Recap of the extract process is written to the OUTPUT operand report file.

The DDname can be up to 8 alphanumeric characters, with the first non-numeric. The CICS PA dialog assigns DDnames in the format **CPAOEXnn** where **nn** is the extract sequence number **01-99**. (See the sample JCL in Figure 188 on page 367).

## DELIMIT

Specifies the field delimiter, enclosed in quotes, to be used to separate each data field in the extract data set. The default is a semicolon **DELIMIT(';')**.

## LABELS | NOLABELS

**LABELS** indicates that the first record to be written to the extract data set is to be a field labels record. This is the default.

**NOLABELS** indicates that CICS PA is not to write a field labels record to the extract data set.

## FLOAT

Write numeric fields in the extract in S390 FLOAT format.

Specify FLOAT format if you plan to import the extract into a DB2 table. When the DB2 Load Utility is used, it will interpret all numerical fields reliably and consistently in FLOAT format.

If FLOAT is not specified, the numeric fields are written in a mixture of integer, real and exponential using character digits. This is the default and is suitable when importing the extract data into a PC spreadsheet tool.

## EXTERNAL

Specifies the DDname for the work data set used by the external sort facility. If not specified, CICS PA assigns an External Work File from a pool of External Work Files with DDnames in the format **CPAXWnnnn** where **nnn** is the sequence number **001-999**. See “EXTERNAL” on page 391 for further information.

## SUMMARY

Requests the System Logger Logstream Summary and Structure Summary reports. This is the default.

To present a single summary of records for the entire reporting period, omit the optional **SUMMARYINTERVAL** suboperand (this is the default). To summarize records at intervals within the reporting period, specify **SUMMARYINTERVAL** with a multiple of the SMF reporting interval, from 00:01 to 23:59. For example, if the SMF reporting interval was 5 minutes at the time that the logger records were written, then you can generate a System Logger Summary report that summarizes the logger records at any multiple of 5 minutes: 05:00, 10:00, 15:00 etc.

If you specify **SUMMARYINTERVAL**, then ensure that the value you specify is an exact multiple of the SMF reporting interval. Otherwise, each of the summaries in the report might not be calculated from the same number of records.

**LIST** Requests the System Logger List report, a detailed list of Logstream writes, Logstream deletes, and Logstream events.

Specify **ALTER** to also report Structure Alter events. These apply to Structures, not individual Logstreams, and are reported with a Logstream name of \*ALTER\*.

By default, the List report entries are printed in Logstream or Structure name sequence according to the **SORT** operand. However, by specifying **TIMESEQ**, the entries are printed in Logstream or Structure name sequence within each Interval expiry period.

#### **INTERVAL**

Specifies the SMF global recording interval as specified in the INTVAL parameter of the SMFPRMnn PARMLIB member.

Specify an interval from 1 to 60 minutes. If not specified, CICS PA uses the recording interval in effect on the reporting system. The interval value is used by CICS PA for rate per second calculations in the System Logger Summary reports. If the interval used by CICS PA does not match the data, the total interval and rate calculations will be incorrect.

**SORT** Specifies the sort sequence for the List and Summary reports.

Specify **LOGSTREAM** to sort by Logstream name, MVS ID, Structure name, then time stamp. This is the default.

Specify **STRUCTURE** to sort by Structure name, Logstream name, MVS ID, then time stamp.

#### **LOGSTREAM**

Optional filter on Logstream name. Specify a name or pattern enclosed in quotes. Masking characters % and \* are allowed. The percent (%) is for a single character substitution and the asterisk (\*) is for many or none. For example:

**LOGSTREAM('TEST.DFHLOG')**

must match exactly

**LOGSTREAM('PROD.\*')**

can match PROD.DFHLOG

**LOGSTREAM('PROD.MVSA%')**

can match PROD.MVSA1, but not PROD.MVSA1LOG

#### **STRUCTURE**

Optional filter on Structure name. Specify a name or pattern enclosed in quotes. Masking characters % and \* are allowed. For example:

**STRUCTURE('TEST.DFHLOG')**

must match exactly

**STRUCTURE('PROD.\*')**

can match PROD.DFHLOG

**STRUCTURE('PROD.MVSA%')**

can match PROD.MVS1, but not PROD.MVS1LOG

#### **TITLE1, TITLE2**

Controls the report title (left and right half of subheading line). See "TITLE1 and TITLE2" on page 392 for further information.

## SELECT(LOGGER(INCLUDE|EXCLUDE

Specifies what data to include or exclude from the report or extract based on data field values. See "Using SELECT statements" on page 525 for an explanation and examples.

## LOGGER examples

### Example 1: Default report

The default is the System Logger Summary report like that shown in Figure 257 on page 518, sorted by Logstream name, without Alter events, and using the system default interval.

CICSPA LOGGER

The following command achieves the same:

CICSPA LOGGER(SUMMARY),SORT(LOGSTREAMNAME)

V5R2M0		CICS Performance Analyzer							
		System Logger Report - Logstream Summary							
LOGR0001 Printed at 12:03:45 11/12/2013		Data from 7:00:40:14 7/20/2004 to 9:59:40:16 7/20/2004 Page 7							
Logstream name		MVSID	Structure name	Group	First interval start		Last interval stop		Total Interval
IYOT1.IY01.DFHJ03		MVS5	*DASDONLY*		06:45:00:00 7/20/2004		09:00:00:00 7/20/2004		02:15:00
----- IXGWITES -----				----- DELETIONS -----					
	Count	Total Bytes	Average Bytes	Bytes Writn to Interim Storage	Count With DASD Write	Count Without DASD Write	Bytes After Offload w. DASD	Bytes Int Stor w/o DASD Write	
Total	45	2506582	55702	2543616	20	0	1130496	0	
Rate(/Sec)	0	309		314	0	0	140	0	
Minimum	45	2506582		2543616	20	0	1130496	0	
Maximum	45	2506582		2543616	20	0	1130496	0	
----- EVENTS -----									
	Offloads	Staging Threshld	Demand DASD Shifts	Block Length	Staging Full	Entry Full	Struct Full	Demand Init'd Offloads	Staging DS Async Buf Full
Total	2	6	6		0	0	0	0	0
Rate(/Sec)	0	0	0		0	0	0	0	0
Minimum	2	0	6	16998	0	0	0	0	0
Maximum	2	0	6	65372	0	0	0	0	0
----- EVENTS -----				----- DASD Writes -----					
	Type1	Type2	Type3	Struct Rebuilds Init'd	Struct Rebuilds Complt'd	Count	Total Bytes	Average	Waits
Total	0	0	0	0	0	8	1114992	0	0
Rate(/Sec)	0	0	0	0	0	0	138		0
Minimum	0	0	0	0	0	8	1114992		0
Maximum	0	0	0	0	0	8	1114992		0

LOGR0001 Printed at 10:51:02 4/07/2006 Data from 7:00:40:14 7/20/2004 to 9:59:40:16 7/20/2004 Page 8

Structure name	MVSID	Group	First interval start	Last interval stop	Total Interval
LOG_JG	MVS5		07:00:00:00 7/20/2004	09:00:00:00 7/20/2004	02:00:00

----- IXGWrites -----				----- DELETIONS -----				
	Count	Total Bytes	Average Bytes	Bytes Writn to Interim Storage	Count With DASD Write	Count Without DASD Write	Bytes After Offload w. DASD	Bytes Int Stor w/o DASD Write
Total	9025	2549654	283	4622848	4892	3484	1379383	984622
Rate(/Sec)	1	315		571	0	0	170	122
Minimum	0	0		0	0	0	0	0
Maximum	9022	2546799		4619520	4891	3484	1379267	984622

----- EVENTS -----									
	Offloads	Staging Threshld	Demand DASD Shifts	Block Length	Staging Full	Entry Full	Struct Full	Demand Init'd Offloads	Staging DS Async Buf Full
Total	3	257	1		0	0	0	0	0
Rate(/Sec)	0	0	0		0	0	0	0	0
Minimum	0	0	0	116	0	0	0	0	0
Maximum	2	257	1	1422	0	0	0	0	0

----- EVENTS -----					----- DASD Writes -----				
	Type1	Type2	Type3	Struct Rebuilds Init'd	Struct Rebuilds Compl't'd	Count	Total Bytes	Average	Waits
Total	9025	0	0	0	0	9	1575063	0	5
Rate(/Sec)	1	0	0	0	0	0	194		0
Minimum	0	0	0	0	0	0	0		0
Maximum	9022	0	0	0	0	8	1574907		5

Figure 257. System Logger report (Summary report)

## Example 2:

This example produces the System Logger List report like that shown in Figure 258 on page 519.

CICSPA LOGGER(LIST(ALTER))

LOGR0001 Printed at 12:03:45 11/12/2013 Data from 7:00:40:14 7/20/2004 to 9:59:40:16 7/20/2004 Page 1

Logstream name IYOT1.DFHL0G Structure name LOG\_JG MVSID MVS5 Group Flag Staging Interval expired at 09:00:00:00 7/20/2004 Level SP6.0.8

IXGWrites				DELETIONS			
Count	Total Bytes	Average Bytes	Bytes Writn to Interim Storage	Count With DASD Write	Count Without DASD Write	Bytes After Offload w. DASD	Bytes Int Stor w/o DASD Write
11248	4348827	386	6768128	0	9327	0	3348643

EVENTS									
Offloads	Staging Threshld	Demand DASD Shifts	Staging Full	Entry Full	Struct Full	Demand Init'd Offloads	Minimum Block Length	Maximum Block Length	Staging DS Async Buf Full
3	0	0	0	0	0	0	116	1422	0

EVENTS					DASD Writes			
Type1	Type2	Type3	Struct Rebuilds Init'd	Struct Rebuilds Compl't'd	Count	Total Bytes	Average	Waits
11216	32	0	0	0	0	0	0	0

Logstream name \*ALTER\* Structure name LOG\_JG MVSID MVS5 Group Level SP6.0.8

----- STRUCTURE ALTER -----  
SMF record time stamp 9:36:38:05 7/20/2004

Current Bytes Written	Offloads	Current Avg Bufsz	Targeted Avg Bufsz	Struct Size (Blocks)	Log Data Writes	Log Streams Connectd
0	2	768	768	5056	0	0

Figure 258. System Logger report (List report)

## EXTRACTPERFORMANCE - Performance data extract

The **EXTRACTPERFORMANCE** operand requests that a performance extract data set is to be created as a delimited text file from the CMF performance class data.

A more flexible alternative is the extract capability provided by the **LIST** and **SUMMARY** operands. For more information, see “LIST - Performance List report” on page 402 and “SUMMARY - Performance Summary report” on page 426.

A Recap report containing processing statistics is always printed at the end of extract processing.

The command format for the Performance Data extract is:

```
CICS PA EXTRACTPERFORMANCE(
    [OUTPUT(ddname),]
    [DDNAME(ddname),]
    [DELIMIT('field-delimiter'),]
    [LABELS|NOLABELS,]
    [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),
        ...))])
```

The options are:

### OUTPUT

Controls the report output DDname for the Recap report. If not specified, CICS PA assigns a DDname in the format **EXPTnnnn** where nnnn is the report sequence number **0001-9999**

### DDNAME

Specifies the DDname of the output data set where the performance extract is written. If not specified, the default DDname is **CPAOEXPT**. The CICS PA dialog, however, assigns DDnames in the format **CPAOEXnn** where nn is the extract sequence number **01-99**. (See the sample JCL in Figure 188 on page 367).

### DELIMIT

Specifies the field delimiter, enclosed in quotes, to be used to separate each data field in the performance extract data set. The default is a semicolon **DELIMIT(';')**.

### LABELS | NOLABELS

**LABELS** indicates that the first record to be written to the performance extract data set is to be a field labels record. This is the default.

**NOLABELS** indicates that CICS PA is not to write a field labels record to the performance extract data set.

### SELECT(PERFORMANCE(INCLUDE | EXCLUDE

Specifies what CMF performance data to include or exclude from the extract based on data field values. See “Using SELECT statements” on page 525 for an explanation and examples.

## EXTRACTPERFORMANCE examples

Example 1: Default extract

In this example, the extract records are written to the extract data set specified in the default DD statement **CPAOEXPT** and the Recap report is written to **EXPT0001**.

```
CICSPA EXTRACTPERFORMANCE
```

Example 2:

```
CICSPA EXTRACTPERFORMANCE(OUTPUT(EXPT0002),  
                           DDNAME(CPAOEX02),  
                           DELIMIT(','))
```

In this example, a comma is specified for the field delimiter. The extract records are written to the data set specified in the DD statement **CPAOEX02** and the Recap report is written to **EXPT0002**.

---

## RECSEL - Record Selection extract

The **RECSEL** or **RECORDSELECTION** operand requests that a subset of CMF records be extracted from a larger SMF file. Optionally, DB2 and MQ accounting records and MVS System Logger records can also be extracted. This smaller file containing only those records of interest to you can then be used for more efficient CICS PA reporting.

A Recap report containing processing statistics is always printed at the end of extract processing.

The command format for the Record Selection extract is:

```
[CICSPA APPLID(app1id1,app1id2,...)]  
CICSPA RECSEL(  
    [OUTPUT(ddname),]  
    [DDNAME(ddname),]  
    [PERFORMANCE,]
```

```

[EXCEPTION,]
[RESOURCE,]
[IDENTITY,]
[STATISTICS,]
[LOGGER,]
[OMEGAMON,]
[DB2,]
[MQ,]
[SSID(id1,id2,...),]
[COMPRESS|NOCOMPRESS,]
[SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(value1),...),...),)]
[SELECT(EXCEPTION(INCLUDE|EXCLUDE(field1(value1),...),...))]
[SELECT(LOGGER(INCLUDE|EXCLUDE(field1(values1),...), ...))]
[LOGSTREAM('name.or.pattern'),]
[STRUCTURE('name.or.pattern'),)]

```

The options are:

## OUTPUT

Controls the report output DDname for the Recap report. If not specified, CICS PA assigns a DDname in the format **RSELnnnn** where nnnn is the report sequence number **0001-9999**.

## DDNAME

Specifies the DDname of the output data set where the Record Selection extract is written. If not specified, the default DDname is **CPAORSEL**. The CICS PA dialog, however, assigns DDnames in the format **CPAORSnn** where nn is the extract sequence number **01-99**. See the sample JCL in Figure 188 on page 367.

## PERFORMANCE

Include CMF Performance class records in the extract. This is the default.

## EXCEPTION

Include CMF Exception class records in the extract.

## RESOURCE

Include CMF Transaction Resource class records in the extract.

## IDENTITY

Include CMF Identity class data records in the extract.

## STATISTICS

Include CICS Statistics and Server statistics class records in the extract.

## LOGGER

Include MVS System Logger records in the extract.

## OMEGAMON

Include OMEGAMON XE for CICS records in the extract.

## DB2

Include DB2 accounting records in the extract.

## MQ

Include WebSphere MQ accounting records in the extract.

## SSID

Requests that the Record Selection extract include DB2 accounting (SMF 101) records for the specified DB2 Subsystem IDs, and MQ accounting (SMF 116) records for the specified MQ Subsystem IDs . Masking characters are supported: % for one and only one character, and \* for many or none. If no DB2 SSIDs are specified, then no DB2 accounting records are extracted. If no MQ SSIDs are specified, then no MQ accounting records are extracted.

## COMPRESS|NOCOMPRESS

Determines whether CICS PA writes CICS SMF records to the extract file in

compressed or uncompressed format. This option applies whether the records in the input SMF file are compressed or not.

If you specify **COMPRESS**, CICS PA writes compressed CICS SMF records, regardless of the CICS release level that created the input records. Although CICS only introduced support for writing compressed SMF records in CICS Transaction Server Version 3.2, you can use CICS PA to create an extract file of compressed CICS SMF records for any CICS release supported by CICS PA. You can use extract files containing compressed SMF records as input to CICS PA, just like any other SMF file, even though the CICS product level that originally created those SMF records cannot write them in compressed format.

#### **SELECT(PERFORMANCE|EXCEPTION|LOGGER(INCLUDE|EXCLUDE**

Specifies what CMF performance data, CMF exception data, or System Logger data to include or exclude from the extract based on data field values. See “Using SELECT statements” on page 525 for an explanation and examples.

## **RECSEL examples**

Example 1:

Extract only those CMF performance records with Transaction ID starting with R.  
CICSPA RECSEL(SELECT(PERFORMANCE(INC(TRAN(R\*))))))

Example 2:

This example produces a Record Selection extract data set and a Recap report like that in Figure 259. The APPLID operand provides a filter on CICS generic APPLIDs, and the SSID operand provides a filter on DB2 Subsystem ID. You can see the effect of the filtering by comparing the DB2 accounting numbers in the End of File Record Counts and the Extract Recap.

```
CICSPA APPLID(CICS53A%),
      RECSEL(OUTPUT(RSEL0009),
            DDNAME(CPAORS09),
            SSID(DB2P))
```

```
V5R2M0                                CICS Performance Analyzer
                                      Record Selection Extract

RSEL0001 Printed at 12:03:45 11/12/2013   Data from 15:41:28  7/12/2004 to 14:43:47  7/21/2004           Page 1

CPAORS01 Extract has completed successfully
Data Set Name . . . . . CICSPA.RECSEL.EXTRACT
Record Counts:
Performance Dictionary . . . . . 8
Performance Class . . . . . 573
Exception Class . . . . . 0
Resource Class . . . . . 0
Statistics . . . . . 0
DB2 Accounting . . . . . 172
MQ Accounting . . . . . 0
Logger . . . . . 0
SMF Records . . . . . 20
```

*Figure 259. Performance Record Selection extract (Recap report)*

## **HDB(LOAD - HDB Load**

The **HDB(LOAD** operand requests CICS PA to load historical performance data (List or Summary) or Statistics data from SMF data sets into an HDB.



A Recap report containing processing statistics is always printed at the end of extract processing.

The command format is:

```
CICSPA HDB(LOAD(hdbname)
        [,OUTPUT(ddname)])
```

The options are:

#### LOAD

Specifies the name of the HDB to be loaded. The HDB must be defined in the Repository (DDname **CPAHDBRG**).

#### OUTPUT

DDname for the Recap report output. CICS PA records the results of the Load operation in this File. If not specified, CICS PA assigns a DDname of **HDBLnnnn** where nnnn is the numerical sequence number **0001-9999**.

## HDB(LOAD examples

The following job is provided as member CPAHDB in the sample library SCPASAMP. This JCL runs the SMF Dump process, followed by Shared System Take-up from an SMF file, HDB Load, and selected reports. By combining take-up, HDB load and reporting into a single job step, all CICS PA functions can be performed by a single pass of the SMF data.

```
//CPAHDB JOB ,CLASS=A,NOTIFY=&SYSUID
//* SMF Dump
//SMFDUMP EXEC PGM=IFASMFDP
//INDD DD DSN=SYS1.MAN1,DISP=SHR
//OUTDD1 DD DISP=(NEW,CATLG),DSN=CICSPROD.SMFDAILY(+1)
//SYSPRINT DD SYSOUT=A
//SYSIN DD *
        INDD(INDD,OPTIONS(ALL))
        OUTDD(OUTDD1,TYPE(110))
/*
/*
/* CICS PA Take-up, HDB Load, and selected reports
//CICSPA EXEC PGM=CPAMAIN,REGION=4M,PARM=NOSTAE
//STEPLIB DD DSN=CPA.V5R2M0.SCPALINK,DISP=SHR
//SYSPRINT DD SYSOUT=*
/* SMF Input Files
//SMFIN001 DD DISP=(SHR,KEEP),DSN=CICSPROD.SMFDAILY(+1)
/* Repository
//CPAHDBRG DD DISP=SHR,DSN=USER.CICSPA.XYX.REPOSTRY
/*
/* CICS PA command requests
//SYSIN DD *
        CICSPA IN(SMFIN001),
                APPLID(*),

* Take-up from SMF into Shared System Definitions
HDB(TAKEUP,SYSTEMS,FILESYSTEM,OUTPUT(TAKEUP)),

* HDB Load requests
HDB(LOAD(WEEKLY),OUTPUT(WEEKLY)),
HDB(LOAD(DAILY),OUTPUT(DAILY)),
HDB(LOAD(STATS),OUTPUT(STATS)),

* CMF Performance Report requests
SUMMARY(FIELDS(TRAN),OUTPUT(SUMM0001)),
WAITANAL(BY(TRAN),OUTPUT(WAIT0001))
/*
```

Successful completion of the Load request generates a Recap report that provides information about the HDB Load, including a list of container data sets created by the Load process.

```
V5R2M0                                CICS Performance Analyzer
                                      HDB Load Recap Report

WEEKLY  Printed at 9:28:48 8/08/2004  Data from 09:02:00 8/07/2004 to 16:29:00 8/07/2004  Page 1

LOAD requested for HDB: WEEKLY  Repository DSN: USER.CICSPA.XYX.REPOSTRY

The following Containers were created and loaded:
  Container DSN: CPA.WEEKLY.D03219.T092846.HDB      No of Records: 54,567
  Start Time Stamp: 2004-08-07-09.00.00          End Time Stamp: 2004-08-07-16.00.00

LOAD process complete.
```

*Figure 260. HDB Load Recap report*

In this example, CICS PA created container data set CPA.WEEKLY.D03219.T092846.HDB for HDB WEEKLY. It contains 54,567 records for the period 9:00am to 4:00pm on August 7, 2004.

---

## EXTRACTSTATISTICS - Statistics extract

The **EXTRACTSTATISTICS** operand requests that one or more statistics extract data sets are to be created as delimited text files from CICS statistics.

A Recap report containing processing statistics is always printed at the end of extract processing.

The command format for the statistics extract is:

```
CICSPA EXTRACTSTATISTICS(
                                [OUTPUT(ddname),]
                                [DELIMIT('field-delimiter'),]
                                [LABELS|NOLABELS,]
                                [TYPE(EOD,INT,USS,REQ,RRT),]
                                STTSxxxx(ddname)|STTGxxxx(ddname),...)
```

The options are:

### **OUTPUT**

Controls the report output ddname for the Recap report. If not specified, CICS PA assigns a ddname in the format **STEX***nnnn* where *nnnn* is the sequence number **0001-9999**

### **DELIMIT**

Specifies the field delimiter, enclosed in quotes, to be used to separate each data field in the extract data set. The default is a semicolon **DELIMIT(';')**.

### **LABELS|NOLABELS**

**LABELS** indicates that the first record to be written to the extract is to be a field labels record. This is the default.

**NOLABELS** indicates that CICS PA is not to write a field labels record to the extract data set.

### **TYPE(...)**

The types of statistics intervals to extract.

### **STTSxxxx|STTGxxxx**

Specifies the ddname of the output data set where each statistics extract is written: **STTSxxxx** for CICS TS statistics or **STTGxxxx** for CICS TG statistics, where *xxxx* is the statistics ID. The CICS PA dialog defines

ddnames in the format TSxxxxnn or TGxxxxnn, respectively, where *nn* is a 2-digit sequence number that ensures each ddname is unique.

## EXTRACTSTATISTICS examples

Example 1: Extract Transaction Manager and Domain Subpools statistics

```
CICSPA EXTRACTSTATISTICS(OUTPUT(STEX0001),
                          DELIMIT(','),
                          LABELS,
                          TYPE(EOD,INT),
                          STTS010A(TS010A01),
                          STTS005A(TS005A01))
```

This example creates two extract data sets: it writes Transaction Manager statistics (ID: 010A) to the extract data set specified in the DD statement TS010A01, and Domain Subpools statistics (ID: 005A) to the extract data set specified in the DD statement TS005A01.

Commas delimit the statistics field values in the extracts. The first record of each extract contains field headings. The extracts contain end-of-day (EOD) and interval (INT) statistics. The Recap report is written to STEX0001.

---

## Using SELECT statements

**SELECT** statements are optionally specified for report and extract processing to filter CMF records or System Logger records based on the values in particular fields.

The **SELECT** statement is used to **INCLUDE** or **EXCLUDE** data for the requested reports and extracts. Data is selected according to the type of record (CMF **PERFORMANCE**, CMF **EXCEPTION**, **LOGGER**) and within that, the values in certain fields.

The format of the statement is:

```
SELECT(PERFORMANCE|EXCEPTION|LOGGER(
    INCLUDE|EXCLUDE(field1(values1),...),
    INCLUDE|EXCLUDE(field2(values2),...),
    ...))
```

For the complete list of operands which can be used with **SELECT** to control the selection of records, see “**SELECT(PERFORMANCE)**” on page 532 and “**SELECT(EXCEPTION)**” on page 533.

**SELECT(PERFORMANCE)** and **SELECT(EXCEPTION)** can be used as a *global* operand to control multiple reports and extracts, or as a *report-level* operand to control an individual report or extract. Any number of global or report-level **SELECT** statements can be used together in a command stream. **SELECT(LOGGER)** can be used only to control an individual report or extract.

**Note:** The global **SELECT** criteria is not reset with the next **CICSPA** command, however:

- A report-level **SELECT** takes precedence over global selection criteria for that specific report or extract only, after which the selection criteria specified on the global **SELECT** again takes effect.
- The next global **SELECT** statement *adds* the new selection criteria to the previous selection criteria (it does not replace it).

## Specifying Selection Criteria in Report Forms

When Selection Criteria are specified both in a Report Form and in a report that uses the Report Form, two operands **SELECT2** and **SELECT** are required, one for the Form and one for the report. If both **SELECT** and **SELECT2** are specified, the record must match both for the record to be processed.

## PERFORMANCE|EXCEPTION|LOGGER record types

A separate **SELECT** statement is used for each CMF record type.

**SELECT(PERFORMANCE** is used when requesting any of the reports, graphs, and extracts that process:

- CMF performance class records
- CMF transaction resource class records
- DB2 accounting records
- MQ accounting records

For more information, see “Selecting DB2 accounting records” on page 166, “Selecting MQ accounting records” on page 166 and Transaction Resource Class “Performance Selection Criteria” on page 221.

**SELECT(EXCEPTION** is used when requesting reports that process CMF exception class records.

No error occurs if a CMF record type is specified but is not otherwise used in the report operands. This allows all **SELECT**s to be specified as global operands and then used by CICS PA where appropriate.

**SELECT(LOGGER** is used when requesting reports or extracts that process System Logger records.

## INCLUDE|EXCLUDE actions

**INCLUDE** and **EXCLUDE** are used with **SELECT** to specify criteria for including or excluding certain records in a report.

**INCLUDE** issues an order to *include* records that match the specified criteria.

**EXCLUDE** issues an order to *exclude* records that match the specified criteria.

CICS PA examines each **SELECT** statement, comparing its specified criteria against the data in the input record, until this results in one of three outcomes:

1. The record is *included* (and no more **SELECT** statements will affect it).
2. The record is *excluded* (and no more **SELECT** statements will affect it).
3. The record is *passed forward* for checking against the next **SELECT** statement. If there are no more **SELECT** statements, either of two things can happen:
  - a. If **SELECT** statements (global and local) specified **INCLUDE**s, the record is *excluded*.
  - b. If **SELECT** statements (global and local) specified **EXCLUDE**s, the record is *included*.

A single **SELECT** statement can contain multiple **INCLUDE/EXCLUDE** clauses, each specifying a list of fields and values for these fields. The data in the input record is compared against the specified values for each field in the

INCLUDE/EXCLUDE list. The record must match *all* the criteria coded under one INCLUDE or EXCLUDE, for the record to be accordingly included or excluded.

If there are multiple INCLUDE operands in one SELECT statement, the record must match *all* the INCLUDEs for the record to be included. Similarly, if there are multiple EXCLUDE operands in one SELECT statement, the record must match *all* the EXCLUDEs for the record to be excluded. If there are both INCLUDEs and EXCLUDEs in one SELECT statement, the final outcome depends on which of the criteria the record matches.

The decision matrix in Table 13 shows which action is taken after examining a **single** SELECT statement against a record.

Table 13. *SELECT Decision Table*

SELECT Statement Contains...	Result of Examination Against Record	Outcome
INCLUDEs only	All fields matched	Record included
INCLUDEs only	Not all fields matched	Record passed to next SELECT
EXCLUDEs only	All fields matched	Record excluded
EXCLUDEs only	Not all fields matched	Record passed to next SELECT
INCLUDEs and EXCLUDEs	All INCLUDE fields matched, but not all EXCLUDE fields matched	Record included
INCLUDEs and EXCLUDEs	All EXCLUDE fields matched	Record excluded
INCLUDEs and EXCLUDEs	Not all INCLUDE fields matched and not all EXCLUDE fields matched	Record passed to next SELECT

Within a *single* SELECT statement, the order of the INCLUDEs and EXCLUDEs and the order of the fields specified within them does not matter, as each is analyzed to determine the outcome. However, the order of the INCLUDEs and EXCLUDEs can make a difference with *multiple* SELECT statements. For some examples, see “Examples: INCLUDE and EXCLUDE sensitivity” on page 536.

## Specifying values for different field types

The CMF record data fields are defined as specific types:

- For CICS-defined fields, the field types are:
  - character
  - time stamp
  - count
  - clock, containing two parts:
    - elapsed time (TIME)
    - number of times condition occurred (COUNT)
  - decimal
- For user fields, the field types are:
  - CHARACTER
  - COUNT
  - clock, containing two parts:
    - elapsed time (CLOCKTIME)
    - number of times condition occurred (CLOCKCOUNT)

System Logger record data fields, the field types are:

- character
- time stamp
- count
- flag (1 to indicate yes, 0 to indicate no)

Each field type has a particular format for specifying in **SELECT** statements. User fields also require the additional operand: **VALUE**.

The following sections discuss the field types and how their values must be specified. For the format of the command for specifying each field type, and the relevant field names, see “**SELECT(PERFORMANCE)**” on page 532, “**SELECT(EXCEPTION)**” on page 533, and “**SELECT(LOGGER)**” on page 534.

### Character fields

The command format is:

```
SELECT(PERFORMANCE|EXCEPTION(  
    INCLUDE|EXCLUDE(charfld1(values1),...),...))
```

The syntax of the values for these fields is a series of words separated by commas. The length of the words is determined by the field lengths. If the word is too short, it is padded with blanks at the end. If it is too long, a command error occurs. For each character field name, a maximum of 200 characters is allowed.

For example, the following command includes the performance records for transactions TR01, TR02, and TR03 on terminal TM01.

```
SELECT(PERFORMANCE(  
    INCLUDE(TRAN(TR01,TR02,TR03),  
        TERM(TM01))))
```

CICS PA recognizes generic values. The masking characters % and \* are supported. The percent (%) is for a single character substitution and the asterisk (\*) is for many or none.

For example, to exclude all performance records from all 50 terminals whose terminal IDs start with PR, you could specify all 50 terminal ID values, or instead you could specify the pattern PR\* as follows:

```
SELECT(PERFORMANCE(EXCLUDE(TERM(PR*))))
```

### Time Stamp fields

The command format is:

```
SELECT(PERFORMANCE|EXCEPTION|LOGGER(  
    INCLUDE|EXCLUDE(  
        START|STOP|ACTIVE(FROM(date,time),TO(date,time)),...),...))
```

Three time stamp fields can be specified with the **SELECT(PERFORMANCE)** and **SELECT(EXCEPTION)** operands:

#### START

Refers to when the transaction was attached or when processing continued from a conversational transaction.

**STOP** Refers to when the transaction was detached or a conversational transaction waited for terminal input.

#### ACTIVE

Refers to the entire time span between the Start and Stop times. **ACTIVE**

can be used to make sure long-running transactions are included when their Start or Stop times fall out of the selection range.

Only the **STOP** time stamp field can be specified with the **SELECT(LOGGER** operand.

**FROM** and **TO** together specify the report interval, and represent either a *date/time range* or a *time slot* (times only). The operands are positional, with FROM preceding TO. Up to 14 report intervals can be specified.

The *date* is either a calendar date in the format *yyyy/mm/dd* or a relative date. Relative dates are specified as 0, -1, -2,... to signify a date relative to the current date. 0 represents today, -1 yesterday, -2 two days ago, and so on. If both FROM and TO dates are specified, they must be in the same format.

The *time* is a time-of-day in the format *hh:mm:ss.th*.

For a date/time range:

- Either FROM or TO can be omitted to indicate that the range is open-ended. If FROM is omitted, it defaults to the first input record. If TO is omitted, it defaults to the end of file.
- If the FROM date is specified with no time, a time of zero is assumed (start of day)
- If the TO date is specified with no time, a time of 23:59:59.99 is assumed (end of day).

For a time slot, both times must be specified with no dates to signify the same time slot every day. The times can span midnight.

For example, the following command includes performance records for transactions running between 8:00 in the morning and 6:00 in the evening:

```
SELECT(PERFORMANCE(INCLUDE(ACTIVE(FROM(08:00),TO(18:00)))))
```

To specify both date and time, the format is:

Calendar date: FROM(yyyy/mm/dd, hh:mm:ss.th)

Relative date: FROM(-n, hh:mm:ss.th)

To specify a date only, the format is:

Calendar date: FROM(yyyy/mm/dd,)

Relative date: FROM(-n,)

**Note:** The comma following the date is required to designate the missing time value.

To specify a time only, the format is FROM(, hh:mm:ss.th) or FROM(hh:mm:ss.th). The comma preceding the time is optional.

For further information on specifying date and time values, see “Operand value formats” on page 385.

## Count fields

The command format is:

```
SELECT(PERFORMANCE|EXCEPTION(INCLUDE|EXCLUDE(countfld1(values1),...),...))
```

The syntax is a string of 1 to 30 decimal ranges, separated by commas. A single number is valid. It is treated as a range that only includes itself. The acceptable values of the numbers in the ranges are the positive integers from 0 to 999999999. This allows selection on all the values that the count fields in the monitoring data can hold.

For example, the following command includes all performance records for transactions that issued 1 to 20 File Control ADD functions:

```
SELECT(PERFORMANCE(INCLUDE(FCADD(1-20))))
```

### **Clock (Time-Count) fields**

The command format is:

```
SELECT(PERFORMANCE|EXCEPTION(  
    INCLUDE|EXCLUDE(clockfld1(TIME|COUNT(values1),...
```

The Clock type fields contain two parts: an elapsed time and a count of the number of times a condition occurred. When specified in the SELECT operand, the part being referenced must be identified by using the **TIME** or **COUNT** operands. Unlike references in the FIELDS operand, there is no default.

The TIME part of clock fields is a count in units of thousandths of a second. Therefore, the rules for specifying the value are the same for both TIME and COUNT parts of clock type fields.

Specify a value, or a list of up to 30 ranges of values, separated by commas. A single number is valid (it is treated as a range that only includes itself). Specify the values in the range as positive integers from 0 to 999999999. This allows selection on all the values that the clock type fields in the monitor data can hold.

Alternatively you can precede the From value with a comparison operator. For example, specify `>=1` for a comparison of greater than or equal to 1. Allowed operators are:

=   >   >=   <   <=

Specify time values in seconds (using a decimal point) or milliseconds. For example, we can request RESPONSE in the range 1.12 to 1.25 seconds or the equivalent 1120 to 1250 milliseconds.

For example:

- The following command identifies transactions whose elapsed suspend time is between 0 and 3 seconds:

```
SELECT(PERFORMANCE(INCLUDE(SUSPEND(TIME(0-3000)))))
```

- The following command identifies transactions that have been suspended no more than 3000 times:

```
SELECT(PERFORMANCE(INCLUDE(SUSPEND(COUNT(0-3000)))))
```

### **Flag fields**

Flag fields occur only in System Logger selection criteria. The command format is:

```
SELECT(LOGGER(INCLUDE|EXCLUDE(flagfld1(0|1),...),...))
```

where 0 indicates “no” and 1 indicates “yes”.

### **Decimal fields**

Decimal fields such as CPUSU require a value to be entered that includes the decimal point, for example 12.5 or 10.0. The command format is:



```
SELECT( PERFORMANCE( INCLUDE( CPUSU(>12.5) ) ) )
```

## User fields

CICS PA can access user fields in the CMF performance records. The user fields are defined in the CICS Monitoring Control Table (MCT) as either character type, count type, or clock type.

The command format is:

```
SELECT( PERFORMANCE( EXCLUDE| INCLUDE(
    CHARACTER(
        OWNER(owner),
        SUBSTR(offset,length),
        VALUE(value list)),
    COUNT|CLOCKTIME|CLOCKCOUNT(
        OWNER(owner),
        NUMBER(nnn),
        VALUE(value list) ) ) ) )
```

All the **FIELDS** operands documented in “Suboperands for User fields” on page 394 are required with **SELECT**. These are:

- For character user fields: **OWNER**, **SUBSTR** and **VALUE**
- For numeric user fields: **OWNER**, **NUMBER** and **VALUE**

### OWNER

The 1-8 character name of the owner of the user field. This is the entry name in the DFHMCT ID= macro specification for the user field, or the CICS-assigned default name of *USER*.

### SUBSTR

Specifies that only part of the field is to be checked, from the *offset* position for the given *length*. For example, if the character user field contains *ANIMALS*, then **SUBSTR(4,3)** is *MAL*.

### NUMBER

The three-digit integer that identifies a specific count or clock type field.

### VALUE

Identifies the value used in the selection criteria. The syntax for the values for user fields is the same as that for character, clock, and count fields.

Example:

If user fields are defined in the MCT, consider a user character field that is set to **INQUIRY** whenever an **INQUIRY** function of the **TEST** transaction is run. The following command then generates a Performance List report containing only data for the **TEST** transaction **INQUIRY** function where:

- Count 1 has a value between 1 and 10
- Clock 1 has an elapsed time greater than 1 second
- Clock 1 was stopped and restarted at least once

```
CICSPA SELECT( PERFORMANCE( INCLUDE(
    TRAN(TEST),
    CHARACTER( OWNER(USEREMP), SUBSTR(1,7), VALUE(INQUIRY)),
    COUNT( OWNER(USEREMP),
        NUMBER(001),
        VALUE(1-10)),
    CLOCKTIME( OWNER(USEREMP),
        NUMBER(001),
        VALUE(1000-999999999)),
```

```

CLOCKCOUNT(OWNER(USEREMP),
             NUMBER(001),
             VALUE(2-999999999))),
LIST

```

## SELECT(PERFORMANCE

The general format of the SELECT statement for CMF performance class records is:

```

SELECT(PERFORMANCE(EXCLUDE|INCLUDE(
    [ACTIVE|START|STOP(FROM(date,time),TO(date,time)),]
    [char-fieldname(text string),]
    [count-fieldname(value list),]
    [decimal-fieldname(value list),]
    [clock-fieldname(TIME|COUNT(value list)),]
    [CHARACTER(
        OWNER(owner),SUBSTR(offset,length),VALUE(value list)),]
    [CLOCKTIME|CLOCKCOUNT|COUNT(
        OWNER(owner),NUMBER(nnn),VALUE(value list))]))))

```

CMF record data fields are defined as specific types. Each field type has a particular format in the SELECT statement:

1. ACTIVE, START, STOP time stamp fields require at least one FROM or TO operand. The format of *(date,time)* can be either:  
*(yyyy/mm/dd,hh:mm:ss.th)* or *(-n,hh:mm:ss.th)* or  
*(yyyy/mm/dd,)* or *(-n,)* or  
*(,hh:mm:ss.th)*

If both FROM and TO dates are specified, they must be in the same format; both must be calendar dates or both must be relative dates.

2. Values for character fields are specified as *text strings*.

For each character field, a maximum of 200 characters can be specified. A text string can be entered either alone or in a list:

*(text)* or  
*(text1,text2,text3)*

3. Values for count and time fields are specified as *value lists*.

For count fields, specify positive integers from 0 to 999999999. For time fields, specify values as thousandths of a second (or seconds if you specify the number with a decimal point).

A value list can be made up of individual values, ranges, or both. Up to 30 values or ranges can be specified. For example:

*(value)*  
*(value1-value2)*  
*(value1,value2,value3)*  
*(value1-value2,value3-value4,value5-value6)*  
*(value1,value2-value3,value4)*

Alternatively you can precede the From value in the range with a comparison operator. For example, specify  $\geq 1$  for a comparison of greater than or equal to 1. Allowed operators are:

= > >= < <=

Specify time values in seconds (using a decimal point) or milliseconds. For example, we can request RESPONSE in the range 1.12 to 1.25 seconds or the equivalent 1120 to 1250 milliseconds.

4. CICS-defined clock type fields require either the TIME or COUNT operand.
5. CHARACTER user fields require the OWNER, SUBSTR, and VALUE operands.
6. Decimal fields such as CPUSU require a value to be entered that includes the decimal point, for example 12.5 or 10.0.

7. CLOCKTIME, CLOCKCOUNT, COUNT user fields require the OWNER, NUMBER, and VALUE operands.
8. See Chapter 30, "Fields by forms, HDB templates," on page 783 for the name and format of the CICS-defined fields that can be specified in **SELECT(PERFORMANCE)** statements.

## SELECT(EXCEPTION

The general format of the SELECT statement for CMF exception class records is:

```
SELECT(EXCEPTION(EXCLUDE|INCLUDE(
    [ACTIVE|START|STOP(FROM(date,time),TO(date,time)),]
    [char-fieldname(text string),]
    [numeric-fieldname(value list)])))
```

CMF record data fields are defined as specific types. Each field type has a particular format in the SELECT statement:

1. ACTIVE, START, STOP time stamp fields require at least one FROM or TO operand. The format of *(date,time)* can be either:  
*(yyyy/mm/dd,hh:mm:ss.th)* or *(-n,hh:mm:ss.th)* or  
*(yyyy/mm/dd,)* or *(-n,)* or  
*(hh:mm:ss.th)*

If both FROM and TO dates are specified, they must be in the same format; both must be calendar dates or both must be relative dates.

2. Values for character fields are specified as *text strings*.

For each character field, a maximum of 200 characters can be specified. A text string can be entered either alone or in a list:

*(text)* or  
*(text1,text2,text3)*

3. Values for count and time fields are specified as *value lists*.

For count fields, specify positive integers from 0 to 999999999. For time fields, specify values as thousandths of a second (or seconds if you specify the number with a decimal point).

A value list can be made up of individual values, ranges, or both. Up to 30 values or ranges can be specified. For example:

*(value)*  
*(value1-value2)*  
*(value1,value2,value3)*  
*(value1-value2,value3-value4,value5-value6)*  
*(value1,value2-value3,value4)*

Alternatively you can precede the From value with a comparison operator. For example, specify *>=1* for a comparison of greater than or equal to 1. Allowed operators are:

= > >= < <=

Specify time values in seconds (using a decimal point) or milliseconds. For example, we can request RESPONSE in the range 1.12 to 1.25 seconds or the equivalent 1120 to 1250 milliseconds.

## SELECT(EXCEPTION fields

The name and format of the fields that can be specified in **SELECT(EXCEPTION** statements are:

**CFDTSLOT(text)**

Coupling facility data table name that incurred a wait for a locking or non-locking request slot

**FSTRINGW(text)**

File name that waited for a string

**LUNAME(text)**

VTAM logical unit name

**RESOURCE(text)**

Type of resource that caused the wait exception (CFDTLRSW, CFDTPPOOL, STORAGE, TEMPSTOR, LSRPOOL, or FILE)

**RESPONSE(values)**

Response time

**STORAGEW(text)**

DSA (Dynamic Storage Area) that caused a wait (CDSA, RDSA, SDSA, UDSA, ECDSA, ERDSA, ESDSA, or EUDSA)

**TASKNO(values)**

Task number

**TCLASS(text)**

Transaction Class name

**TERM(text)**

Terminal ID

**PRTY(values)**

Transaction priority

**TRAN(text)**

Transaction ID

**TSBUFFER(text)**

Temporary Storage queue name that waited for a buffer

**TSSTRING(text)**

Temporary Storage queue name that waited for a string

**USERID(text)**

User ID

**VBUFFERW(text)**

File name that incurred a wait for a VSAM buffer

**VSTRINGW(text)**

File name that incurred a wait for a VSAM string

**SELECT(LOGGER**

The general format of the SELECT statement for System Logger records is:

```
SELECT (LOGGER (EXCLUDE | INCLUDE (
    [STOP (FROM (date,time), TO (date,time)),]
    [char-fieldname (text string),]
    [count-fieldname (value list),]
    [flag-fieldname (0|1),]
```

CMF record data fields are defined as specific types. Each field type has a particular format in the SELECT statement:

1. STOP time stamp fields require at least one FROM or TO operand. The format of *(date,time)* can be either:  
(*yyyy/mm/dd,hh:mm:ss.th*) or (*-n,hh:mm:ss.th*) or

(yyyy/mm/dd,) or (-n,) or  
(hh:mm:ss.th)

If both FROM and TO dates are specified, they must be in the same format; both must be calendar dates or both must be relative dates.

2. Values for character fields are specified as *text strings*.

For each character field, a maximum of 200 characters can be specified. A text string can be entered either alone or in a list:

(text) or  
(text1,text2,text3)

3. Values for count fields are specified as *value lists*.

Specify positive integers from 0 to 999999999.

A value list can be made up of individual values, ranges, or both. Up to 30 values or ranges can be specified. For example:

(value)  
(value1-value2)  
(value1,value2,value3)  
(value1-value2,value3-value4,value5-value6)  
(value1,value2-value3,value4)

Alternatively you can precede the From value in the range with a comparison operator. For example, specify >=1 for a comparison of greater than or equal to 1. Allowed operators are:

= > >= < <=

4. For the name and format of the System Logger fields that can be specified in **SELECT(LOGGER** statements, see the prompt list in the CICS PA online dialog. For details, see "Specifying Selection Criteria" on page 156.

## SELECT examples

This section illustrates various ways of using SELECT.

### Examples: Using SELECT as a global operand

The following examples illustrate the use of SELECT as a global operand applying to all reports and extracts that follow it.

1. In this example, the performance class records from transactions that were active between 08:00 and 16:00 are included in both the Performance List and Performance Summary reports.

```
CICSPA SELECT(PERFORMANCE(INCLUDE(  
    ACTIVE(FROM(08:00:00),TO(16:00:00)))))  
    LIST,  
    SUMMARY
```

2. In this example, the Performance List report will only contain the performance class records from transactions with file (FC) wait time between 1 and 1000 seconds, except transactions that are attached from terminal TRM1.

```
CICSPA SELECT(PERFORMANCE(  
    EXCLUDE(TERM(TRM1)),  
    INCLUDE(FCWAIT(TIME(1000-1000000)))))  
    LIST
```

3. In this example, the exception class records from transactions that were active between 08:00 and 16:00 are included in both the Exception List and Exception Summary reports.

```
CICSPA SELECT(EXCEPTION(INCLUDE(  
    ACTIVE(FROM(08:00:00),TO(16:00:00)))))  
    LISTEXC,  
    SUMEXC
```

### Examples: Using SELECT as a report or extract suboperand

The following examples illustrate the use of SELECT as a report-level operand associated only with the particular report or extract it is coded with. Report-level SELECT statements take precedence over any global SELECT statements.

1. This example shows SELECT used as a suboperand to the LIST operand. The Performance List report will only contain performance class records from transactions TRA1 and TRA2 that were attached from terminal TRM1.  

```
CICSPA LIST(SELECT(PERFORMANCE(INCLUDE(TERM(TRM1),TRANS(TRA1,TRA2)))))
```
2. This example shows SELECT used as a suboperand to the LIST operand. The Performance List report will only contain performance class records which have the value ADD in the character user field TESTFUNC.  

```
CICSPA LIST(SELECT(PERFORMANCE(INCLUDE(  
                                CHARACTER(OWNER(TESTFUNC),SUBSTR(1,3),  
                                VALUE(ADD)))))
```
3. This example shows SELECT used as a suboperand to LISTEXCEPTION. The Exception List report will only contain the exception class records from transactions TRA1 and TRA2 that were attached from terminal TRM1.  

```
CICSPA LISTEXC(SELECT(EXCEPTION(INCLUDE(  
                                TERM(TRM1),TRANS(TRA1,TRA2)))))
```

### Examples: INCLUDE and EXCLUDE sensitivity

The following report examples show how slight variations to SELECT statements can change report content.

1. This command generates a Performance Summary report for all records except those with terminal TM01.  

```
CICSPA IN(SMFIN001),  
        SELECT(PERFORMANCE(EXCLUDE(TERM(TM01)))),  
        SUMMARY
```
2. This command generates a Performance Summary report with data from performance class records for terminals TM01 and TM02.  

```
CICSPA IN(SMFIN003),  
        SELECT(PERFORMANCE(INCLUDE(TERM(TM01)))),  
        SELECT(PERFORMANCE(INCLUDE(TERM(TM02)))),  
        SUMMARY
```

The two SELECT statements could have been combined as `SELECT(PERFORMANCE(INCLUDE(TERM(TM01,TM02))))`. However, this command shows a method that can be used if more values need to be listed than CICS PA will allow for one character field.

Be careful, as all selection criteria stay in effect when specifying more than one SELECT statement for a single field.

The following command generates a Performance Summary report for only transaction XXXX on terminal TM01 and for all transactions on terminal TM02.

```
CICSPA IN(SMFIN004),  
        SELECT(PERFORMANCE(INCLUDE(TRAN(XXXX),  
                                TERM(TM01)))),  
        SELECT(PERFORMANCE(INCLUDE(TERM(TM02)))),  
        SUMMARY
```

The following command generates a Performance Summary report for transaction XXXX on all terminals, and all other transactions on terminals TM01 and TM02.

```
CICSPA IN(SMFIN004),  
        SELECT(PERFORMANCE(INCLUDE(TRAN(XXXX)))),  
        SELECT(PERFORMANCE(INCLUDE(TERM(TM01)))),  
        SELECT(PERFORMANCE(INCLUDE(TERM(TM02)))),  
        SUMMARY
```

The following command generates a Performance Summary report for transaction XXXX on terminals TM01 and TM02.

```
CICSPA IN(SMFIN004),
      SELECT(PERFORMANCE(INCLUDE(TRAN(XXXX),
                                TERM(TM01)))),
      SELECT(PERFORMANCE(INCLUDE(TRAN(XXXX),
                                TERM(TM02)))),
      SUMMARY
```

3. INCLUDE and EXCLUDE parameters can be specified in any order within one SELECT statement. However, with multiple SELECT statements, the order is important.

- The following two commands generate the same Performance Summary report.

```
CICSPA IN(SMFIN005),
      SELECT(PERFORMANCE(INCLUDE(TERM(TM01)),
                        EXCLUDE(TRAN(XXXX)))),
      SUMMARY
```

```
CICSPA IN(SMFIN005),
      SELECT(PERFORMANCE(EXCLUDE(TRAN(XXXX)),
                        INCLUDE(TERM(TM01)))),
      SUMMARY
```

- The following command also generates the same Performance Summary report

```
CICSPA IN(SMFIN005),
      SELECT(PERFORMANCE(EXCLUDE(TRAN(XXXX)))),
      SELECT(PERFORMANCE(INCLUDE(TERM(TM01)))),
      SUMMARY
```

- However, the following command generates a different Performance Summary report. This one includes all transactions for terminal TM01, including transaction XXXX.

```
CICSPA IN(SMFIN005),
      SELECT(PERFORMANCE(INCLUDE(TERM(TM01)))),
      SELECT(PERFORMANCE(EXCLUDE(TRAN(XXXX)))),
      SUMMARY
```

4. Remember that global SELECT operands cannot be removed. The following commands generate three Performance List reports:

- a. The first report contains data for transaction XXXX on terminal TM01
- b. The second report contains the same data as the first report as well as data for transaction YYYY on terminal TM02
- c. The third report contains the same data as the second report as well as data for transaction ZZZZ on terminal TM03

```
CICSPA IN(SMFIN006),
      SELECT(PERFORMANCE(INCLUDE(TERM(TM01),
                                TRAN(XXXX)))),
      LIST,
      SELECT(PERFORMANCE(INCLUDE(TERM(TM02),
                                TRAN(YYYY)))),
      LIST
```

```
CICSPA IN(SMFIN006),
      SELECT(PERFORMANCE(INCLUDE(TERM(TM03),
                                TRAN(ZZZZ)))),
      LIST
```

If three exclusive reports are wanted, specify the SELECT statements as operands. The following command generates three Performance List reports:

- a. The first report contains data for transaction XXXX on terminal TM01
- b. The second report contains data for transaction YYYY on terminal TM02

c. The third report contains data for transaction ZZZZ on terminal TM03

```
CICSPA IN(SMFIN006),  
      LIST(SELECT(PERFORMANCE(INCLUDE(TERM(TM01),  
                                   TRAN(XXXX))))) ,  
      LIST(SELECT(PERFORMANCE(INCLUDE(TERM(TM02),  
                                   TRAN(YYYY))))) ,  
      LIST(SELECT(PERFORMANCE(INCLUDE(TERM(TM03),  
                                   TRAN(ZZZZ)))))
```

### Example: Specifying a time period

1. The following command generates a Performance List report like that shown in Figure 261 on page 539. It includes transactions that both started and stopped within the specified time period. It does *not* include any long-running transactions that started before the interval or stopped after the interval.

```
CICSPA LIST(SELECT(PERFORMANCE(INCLUDE(  
    START(FROM(11:15:00),TO(11:20:00)),  
    STOP(FROM(11:15:00),TO(11:20:00)))))
```

2. However, the following command generates a Performance List report that includes transactions that either:
  - a. Started before and ended during or after the time period selected, or
  - b. Started during and ended during or after the time period selected

```
CICSPA LIST(SELECT(PERFORMANCE(INCLUDE(  
    ACTIVE(FROM(11:15:00),TO(11:20:00)))))
```



LIST0001 Printed at 12:03:45 11/12/2013

Data from 11:15:15 2/14/2005

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Tran	SC	Term	Userid	RSID	Program	TaskNo	Stop Time	Response Time	Dispatch Time	User CPU Time	Suspend Time	DispWait Time	FC Wait Time	FCAMRq	IR Wait Time
CEMT	TO	S208	BRENNER		DFHEMTP	66	11:15:15	3.7618	.0028	.0022	3.7590	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	67	11:15:17	.0041	.0040	.0035	.0001	.0000	.0000	0	.0000
CEMT	TO	S208	BRENNER		DFHEMTP	66	11:15:22	6.5224	.0068	.0032	6.5156	.0000	.0000	0	.0000
CATA	U		CBAKER		DFHZATA	69	11:15:29	.0157	.0099	.0048	.0058	.0002	.0000	0	.0000
CQRY	S	TC26	CBAKER		DFHQRY	70	11:15:30	.2049	.0022	.0008	.2027	.0000	.0000	0	.0000
CQRY	S	TC26	CBAKER		DFHQRY	70	11:15:30	.0177	.0020	.0008	.0156	.0000	.0000	0	.0000
CESN	S	TC26	CBAKER		DFHSNP	71	11:15:30	.0028	.0027	.0016	.0001	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	67	11:15:31	13.9899	.0040	.0037	13.9860	.0000	.0000	0	.0000
CEDA	TO	S23D	BRENNER		DFHEDAP	72	11:15:35	.6794	.6522	.1020	.0272	.0102	.0115	48	.0000
CESN	TP	TC26	CBAKER		DFHSNP	73	11:15:38	.0392	.0388	.0106	.0004	.0003	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	67	11:15:50	18.8996	.0037	.0035	18.8959	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	67	11:15:51	.0010	.0038	.0035	.7972	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	67	11:15:51	.7062	.0045	.0035	.7016	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	67	11:15:52	.3508	.0044	.0035	.3464	.0000	.0000	0	.0000
CATR	S		CBAKER		DFHZATR	74	11:16:09	.0284	.0280	.0047	.0003	.0003	.0000	0	.0000
RMST	TO	TC26	GBURGES	CJB3		75	11:16:13	.0350	.0101	.0030	.0248	.0001	.0000	0	.0195
RMST	TO	TC26	GBURGES	CJB3		75	11:16:17	3.0835	.0022	.0009	3.0813	.0000	.0000	0	.9967
RMST	TO	TC26	GBURGES	CJB3		75	11:16:19	2.2629	.0017	.0009	2.2612	.0000	.0000	0	1.0999
CEDA	TO	S23D	BRENNER		DFHEDAP	72	11:16:21	46.5125	.0010	.0008	46.5115	.0000	.0000	0	.0000
RMST	TO	TC26	GBURGES	CJB3		75	11:16:22	2.7597	.0020	.0008	2.7577	.0000	.0000	0	.0014
CEDA	TO	S23D	BRENNER		DFHEDAP	72	11:16:24	2.2127	.0008	.0006	2.2118	.0000	.0000	0	.0000
CEDA	TO	S23D	BRENNER		DFHEDAP	72	11:16:27	3.0046	.0013	.0006	3.0033	.0000	.0000	0	.0000
RMST	TO	TC26	GBURGES	CJB3		75	11:16:27	5.6824	.0010	.0008	5.6814	.0000	.0000	0	.0016
CEDA	TO	S23D	BRENNER		DFHEDAP	72	11:16:28	1.1025	.1151	.0119	.9874	.0012	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	67	11:16:33	41.2444	.0045	.0036	41.2398	.0000	.0000	0	.0000
RMST	TO	TC26	GBURGES	CJB3		75	11:16:33	5.9165	.0008	.0007	5.9157	.0000	.0000	0	.0013
CEMT	TO	P056	CBAKER		DFHEMTP	67	11:16:34	.6993	.0044	.0040	.6949	.0000	.0000	0	.0000
RMST	TO	TC26	GBURGES	CJB3		75	11:16:34	1.2040	.0017	.0009	1.2023	.0000	.0000	0	.0015
CEMT	TO	P056	CBAKER		DFHEMTP	67	11:16:34	.7242	.0037	.0034	.7205	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	67	11:16:35	.6737	.0040	.0035	.6696	.0000	.0000	0	.0000
RMST	TO	TC26	GBURGES	CJB3		75	11:16:35	1.0298	.0023	.0010	1.0275	.0000	.0000	0	.7713
CEMT	TO	P056	CBAKER		DFHEMTP	67	11:16:37	1.8029	.0067	.0036	1.7962	.0000	.0000	0	.0000
RMST	TO	TC26	GBURGES	CJB3		75	11:16:37	1.8807	.0007	.0007	1.8799	.0000	.0000	0	.0013
RMST	TO	TC26	GBURGES	CJB3		75	11:16:39	2.0341	.0011	.0008	2.0330	.0000	.0000	0	.0012
RMST	TO	TC26	GBURGES	CJB3		75	11:16:45	5.3195	.0100	.0008	5.3095	.0000	.0000	0	.0012
RMST	TO	TC26	GBURGES	CJB3		75	11:16:46	1.0277	.0015	.0008	1.0262	.0000	.0000	0	.0016
RMST	TO	TC26	GBURGES	CJB3		75	11:16:46	.3153	.0017	.0009	.3136	.0000	.0000	0	.1009
RMST	TO	TC26	GBURGES	CJB3		75	11:16:47	.6316	.0018	.0009	.6298	.0000	.0000	0	.1073
RMST	TO	TC26	GBURGES	CJB3		75	11:16:47	.3110	.0020	.0010	.3090	.0000	.0000	0	.0016
CALL	TO	TC26	GBURGES	CALLJT1		76	11:16:53	2.1039	.0453	.0070	2.0586	.0145	.0000	0	.0000
CALL	TO	TC26	GBURGES	CALLJT1		77	11:16:58	2.0733	.0018	.0015	2.0715	.0004	.0000	0	.0000
CALL	TO	TC26	GBURGES	CALLJT1		78	11:17:01	2.0612	.0027	.0017	2.0585	.0007	.0000	0	.0000
TRUE	TO	TC26	GBURGES	CALLCB1		79	11:17:04	1.2533	.0141	.0048	1.2392	.0129	.0000	0	.0000
TRUE	TO	TC26	GBURGES	CALLCB1		79	11:17:04	.0002	.0000	.0000	.0000	.0000	.0000	0	.0000
TRUE	TO	TC26	GBURGES	CALLCB1		79	11:17:06	2.0987	.0044	.0011	2.0943	.0038	.0000	0	.0000
TRUE	TO	TC26	GBURGES	CALLCB1		80	11:17:09	1.2650	.0007	.0006	1.2643	.0002	.0000	0	.0000
TRUE	TO	TC26	GBURGES	CALLCB1		80	11:17:09	.0002	.0002	.0000	.0000	.0000	.0000	0	.0000
TRUE	TO	TC26	GBURGES	CALLCB1		80	11:17:11	2.0989	.0021	.0012	2.0968	.0006	.0000	0	.0000
TRUE	TO	TC26	GBURGES	CALLCB1		81	11:17:12	1.0461	.0007	.0005	1.0454	.0003	.0000	0	.0000
TRUE	TO	TC26	GBURGES	CALLCB1		81	11:17:12	.0002	.0002	.0000	.0000	.0000	.0000	0	.0000
TRUE	TO	TC26	GBURGES	CALLCB1		81	11:17:14	2.0971	.0025	.0010	2.0946	.0004	.0000	0	.0000
CBTR	TO	TC26	GBURGES	#####		82	11:17:14	.0334	.0328	.0044	.0006	.0006	.0000	0	.0000

Figure 261. Sample report using SELECT (List transactions in a specified period)

**Example: Including specified transactions only**

The following command produces a Performance List report like that shown in Figure 262 on page 540 that only includes the performance records for specific transaction identifiers.

```
CICSPA LIST(SELECT(PERFORMANCE(INCLUDE(
TRAN(ABRW,AMNU,AUPD))))))
```

LIST0001 Printed at 12:03:45 11/12/2013 Data from 11:11:53 2/14/2005 APPLID IYK2Z1V1 Page 1

Tran	SC	Term	Userid	RSID	Program	TaskNo	Stop Time	Response Time	Dispatch Time	User Time	CPU Time	Suspend Time	DispWait Time	FC Wait Time	FCAMRq	IR Wait Time
AMNU	TO	S23D	BRENNER		DFHSAMNU	50	11:11:53	.1724	.1720	.0091	.0004	.0004	.0000	.0000	0	.0000
ABRW	TO	S23D	BRENNER		DFHSABRW	53	11:12:19	.5819	.0783	.0121	.5037	.0127	.0000	.0000	0	.4908
AUPD	TO	S208	BRENNER		DFHSAALL	54	11:12:27	.0488	.0335	.0046	.0154	.0153	.0000	.0000	0	.0000
AUPD	TO	S208	BRENNER		DFHSAALL	57	11:12:34	.0321	.0301	.0050	.0019	.0002	.0000	.0000	0	.0016
ABRW	TP	S23D	BRENNER		DFHSABRW	59	11:13:17	.0070	.0034	.0029	.0036	.0000	.0000	.0000	0	.0036
ABRW	TP	S23D	BRENNER		DFHSABRW	61	11:13:20	.0080	.0028	.0024	.0052	.0000	.0000	.0000	0	.0051
ABRW	TP	S23D	BRENNER		DFHSABRW	62	11:13:21	.0064	.0027	.0023	.0036	.0000	.0000	.0000	0	.0036
ABRW	TP	S23D	BRENNER		DFHSABRW	63	11:13:24	.0018	.0017	.0014	.0001	.0000	.0000	.0000	0	.0000
AUPD	TP	S208	BRENNER		DFHSAALL	64	11:13:38	.0665	.0160	.0141	.0505	.0012	.0000	.0000	0	.0056
AMNU	TO	TC26	GBURGES		DFHSAMNU	108	11:19:33	.0023	.0022	.0011	.0001	.0000	.0000	.0000	0	.0000
ABRW	TO	TC26	GBURGES		DFHSABRW	109	11:19:44	.0071	.0040	.0027	.0030	.0000	.0000	.0000	0	.0030
ABRW	TP	TC26	GBURGES		DFHSABRW	110	11:19:49	.0064	.0031	.0021	.0033	.0000	.0000	.0000	0	.0032
ABRW	TP	TC26	GBURGES		DFHSABRW	111	11:19:50	.0065	.0032	.0022	.0033	.0000	.0000	.0000	0	.0033
ABRW	TP	TC26	GBURGES		DFHSABRW	112	11:19:50	.0071	.0035	.0023	.0036	.0000	.0000	.0000	0	.0036
ABRW	TP	TC26	GBURGES		DFHSABRW	113	11:19:50	.0066	.0032	.0022	.0034	.0000	.0000	.0000	0	.0034
ABRW	TP	TC26	GBURGES		DFHSABRW	114	11:19:51	.0022	.0021	.0012	.0001	.0000	.0000	.0000	0	.0000
ABRW	TP	TC26	GBURGES		DFHSABRW	115	11:19:51	.0070	.0034	.0023	.0036	.0000	.0000	.0000	0	.0035
ABRW	TP	TC26	GBURGES		DFHSABRW	116	11:19:51	.0068	.0032	.0022	.0036	.0000	.0000	.0000	0	.0035
ABRW	TP	TC26	GBURGES		DFHSABRW	117	11:19:52	.0094	.0036	.0024	.0058	.0000	.0000	.0000	0	.0057
ABRW	TP	TC26	GBURGES		DFHSABRW	118	11:19:52	.0064	.0031	.0021	.0033	.0000	.0000	.0000	0	.0032
ABRW	TP	TC26	GBURGES		DFHSABRW	119	11:19:53	.0084	.0032	.0024	.0052	.0000	.0000	.0000	0	.0051
ABRW	TP	TC26	GBURGES		DFHSABRW	120	11:19:53	.0070	.0033	.0022	.0036	.0000	.0000	.0000	0	.0036
ABRW	TP	TC26	GBURGES		DFHSABRW	121	11:19:53	.0053	.0028	.0018	.0024	.0000	.0000	.0000	0	.0024
ABRW	TP	TC26	GBURGES		DFHSABRW	122	11:19:56	.0065	.0034	.0021	.0030	.0000	.0000	.0000	0	.0030
ABRW	TP	TC26	GBURGES		DFHSABRW	123	11:19:56	.0069	.0033	.0023	.0036	.0000	.0000	.0000	0	.0035
ABRW	TP	TC26	GBURGES		DFHSABRW	124	11:19:56	.0082	.0035	.0024	.0047	.0000	.0000	.0000	0	.0046
ABRW	TP	TC26	GBURGES		DFHSABRW	125	11:19:57	.0070	.0032	.0023	.0037	.0000	.0000	.0000	0	.0037
ABRW	TP	TC26	GBURGES		DFHSABRW	126	11:19:57	.0080	.0042	.0024	.0037	.0000	.0000	.0000	0	.0037
ABRW	TP	TC26	GBURGES		DFHSABRW	127	11:19:57	.0083	.0034	.0024	.0048	.0000	.0000	.0000	0	.0048
ABRW	TP	TC26	GBURGES		DFHSABRW	128	11:19:57	.0156	.0028	.0024	.0128	.0000	.0000	.0000	0	.0127
ABRW	TP	TC26	GBURGES		DFHSABRW	129	11:19:57	.0069	.0032	.0022	.0037	.0000	.0000	.0000	0	.0036
ABRW	TP	TC26	GBURGES		DFHSABRW	130	11:19:58	.0066	.0031	.0022	.0035	.0000	.0000	.0000	0	.0034
ABRW	TP	TC26	GBURGES		DFHSABRW	131	11:19:58	.0065	.0032	.0021	.0033	.0000	.0000	.0000	0	.0033
ABRW	TP	TC26	GBURGES		DFHSABRW	132	11:19:58	.0074	.0033	.0023	.0041	.0000	.0000	.0000	0	.0040
ABRW	TP	TC26	GBURGES		DFHSABRW	133	11:19:58	.0059	.0032	.0018	.0026	.0000	.0000	.0000	0	.0026
AUPD	TO	TC26	GBURGES		DFHSAALL	141	11:20:25	.0045	.0024	.0015	.0021	.0000	.0000	.0000	0	.0020
ABRW	TO	TC26	GBURGES		DFHSABRW	142	11:20:32	.0063	.0032	.0022	.0031	.0000	.0000	.0000	0	.0031
ABRW	TP	TC26	GBURGES		DFHSABRW	143	11:20:34	.0025	.0024	.0014	.0001	.0000	.0000	.0000	0	.0000
ABRW	TO	TC26	GBURGES		DFHSABRW	146	11:20:38	.0066	.0036	.0023	.0030	.0000	.0000	.0000	0	.0029
ABRW	TP	TC26	GBURGES		DFHSABRW	147	11:20:40	.0075	.0033	.0023	.0042	.0000	.0000	.0000	0	.0041
ABRW	TP	TC26	GBURGES		DFHSABRW	148	11:20:40	.0022	.0022	.0012	.0001	.0000	.0000	.0000	0	.0000
ABRW	TO	TC26	GBURGES		DFHSABRW	150	11:20:45	.0076	.0046	.0021	.0031	.0000	.0000	.0000	0	.0030
ABRW	TP	TC26	GBURGES		DFHSABRW	151	11:20:49	.0075	.0035	.0023	.0040	.0000	.0000	.0000	0	.0039
ABRW	TP	TC26	GBURGES		DFHSABRW	152	11:20:50	.0080	.0042	.0026	.0037	.0000	.0000	.0000	0	.0037
ABRW	TP	TC26	GBURGES		DFHSABRW	153	11:20:50	.0074	.0032	.0022	.0041	.0000	.0000	.0000	0	.0041
ABRW	TP	TC26	GBURGES		DFHSABRW	154	11:20:50	.0071	.0037	.0022	.0034	.0000	.0000	.0000	0	.0033
ABRW	TP	TC26	GBURGES		DFHSABRW	155	11:20:51	.0059	.0022	.0020	.0037	.0000	.0000	.0000	0	.0037
ABRW	TP	TC26	GBURGES		DFHSABRW	156	11:20:51	.0080	.0037	.0024	.0043	.0000	.0000	.0000	0	.0042
ABRW	TP	TC26	GBURGES		DFHSABRW	157	11:20:53	.0079	.0041	.0025	.0037	.0000	.0000	.0000	0	.0036
AMNU	TO	R11	CBaker		DFHSAMNU	158	11:20:54	.0228	.0227	.0012	.0000	.0000	.0000	.0000	0	.0000
ABRW	TP	TC26	GBURGES		DFHSABRW	160	11:20:54	.0074	.0034	.0022	.0039	.0000	.0000	.0000	0	.0039
ABRW	TP	TC26	GBURGES		DFHSABRW	161	11:20:55	.0060	.0023	.0021	.0037	.0000	.0000	.0000	0	.0036

Figure 262. Sample report using SELECT (list specified transactions only)

**Example: Satisfying combined criteria (“AND”)**

The following command produces a Performance List report like that shown in Figure 263 on page 541. It shows how to combine fields under the same INCLUDE statement. The performance data included contains the terminal ID S23D and also has a userid of BRENNER.

```
CICSPA LIST(SELECT(PERFORMANCE(
INCLUDE(TERM(S23D),USERID(BRENNER)))))
```

Tran	SC	Term	Userid	RSID	Program	TaskNo	Stop	Response	Dispatch	User	CPU	Suspend	DispWait	FC Wait	FCAMRq	IR Wait
							Time	Time	Time	Time		Time	Time	Time		Time
AMNU	TO	S23D	BRENNER		DFHSAMNU	50	11:11:53	.1724	.1720	.0091	.0004	.0004	.0004	.0000	0	.0000
ABRW	TO	S23D	BRENNER		DFHSABRW	53	11:12:19	.5819	.0783	.0121	.5037	.0127	.0000	.0000	0	.4908
ABRW	TP	S23D	BRENNER		DFHSABRW	59	11:13:17	.0070	.0034	.0029	.0036	.0000	.0000	.0000	0	.0036
ABRW	TP	S23D	BRENNER		DFHSABRW	61	11:13:20	.0080	.0028	.0024	.0052	.0000	.0000	.0000	0	.0051
ABRW	TP	S23D	BRENNER		DFHSABRW	62	11:13:21	.0064	.0027	.0023	.0036	.0000	.0000	.0000	0	.0036
ABRW	TP	S23D	BRENNER		DFHSABRW	63	11:13:24	.0018	.0017	.0014	.0001	.0000	.0000	.0000	0	.0000
CEDA	TO	S23D	BRENNER		DFHEDAP	72	11:15:35	.6794	.6522	.1020	.0272	.0102	.0115		48	.0000
CEDA	TO	S23D	BRENNER		DFHEDAP	72	11:16:21	46.5125	.0010	.0008	46.5115	.0000	.0000	.0000	0	.0000
CEDA	TO	S23D	BRENNER		DFHEDAP	72	11:16:24	2.2127	.0008	.0006	2.2118	.0000	.0000	.0000	0	.0000
CEDA	TO	S23D	BRENNER		DFHEDAP	72	11:16:27	3.0046	.0013	.0006	3.0033	.0000	.0000	.0000	0	.0000
CEDA	TO	S23D	BRENNER		DFHEDAP	72	11:16:28	1.1025	.1151	.0119	.9874	.0012	.0000	.0000	0	.0000
CEMT	TO	S23D	BRENNER		DFHEMTP	140	11:20:24	.0042	.0041	.0037	.0001	.0000	.0000	.0000	0	.0000
CEMT	TO	S23D	BRENNER		DFHEMTP	140	11:20:32	8.3481	.0037	.0032	8.3444	.0000	.0000	.0000	0	.0000
CEMT	TO	S23D	BRENNER		DFHEMTP	140	11:21:24	51.3442	.0013	.0010	51.3429	.0000	.0000	.0000	0	.0000
CEMT	TO	S23D	BRENNER		DFHEMTP	174	11:21:27	.0041	.0040	.0038	.0001	.0000	.0000	.0000	0	.0000
CEMT	TO	S23D	BRENNER		DFHEMTP	174	11:21:28	1.1930	.0013	.0010	1.1917	.0000	.0000	.0000	0	.0000
RMST	TO	S23D	BRENNER	CJB3		178	11:21:31	.0110	.0017	.0014	.0093	.0000	.0000	.0000	0	.0093
RMST	TO	S23D	BRENNER	CJB3		178	11:21:39	7.8027	.0017	.0014	7.8009	.0000	.0000	.0000	0	.0102
RMST	TO	S23D	BRENNER	CJB3		178	11:21:49	10.0524	.0012	.0008	10.0512	.0000	.0000	.0000	0	.9641
RMST	TO	S23D	BRENNER	CJB3		178	11:22:38	48.9210	.0136	.0012	48.9074	.0000	.0000	.0000	0	.0024
STAT	TO	S23D	BRENNER		DFH0STAT	195	11:22:41	.0018	.0017	.0015	.0001	.0000	.0000	.0000	0	.0000
STAT	TO	S23D	BRENNER		DFH0STAT	195	11:22:50	8.9745	.3774	.3537	8.5972	.0006	.0000	.0000	0	.0000
STAT	TO	S23D	BRENNER		DFH0STAT	195	11:22:52	2.0203	.0015	.0012	2.0188	.0000	.0000	.0000	0	.0000
CALL	TO	S23D	BRENNER		CALLJT1	196	11:22:57	2.1853	.0022	.0015	2.1831	.0005	.0000	.0000	0	.0000
TRUE	TO	S23D	BRENNER		CALLCB1	197	11:23:00	1.0821	.0007	.0006	1.0814	.0003	.0000	.0000	0	.0000
TRUE	TO	S23D	BRENNER		CALLCB1	197	11:23:00	.0002	.0002	.0000	.0000	.0000	.0000	.0000	0	.0000
TRUE	TO	S23D	BRENNER		CALLCB1	197	11:23:02	2.0959	.0020	.0012	2.0940	.0005	.0000	.0000	0	.0000
STAT	TO	S23D	BRENNER		DFH0STAT	198	11:23:03	.0022	.0022	.0015	.0001	.0000	.0000	.0000	0	.0000
STAT	TO	S23D	BRENNER		DFH0STAT	198	11:23:10	6.4074	.0014	.0009	6.4060	.0024	.0000	.0000	0	.0000
STAT	TO	S23D	BRENNER		DFH0STAT	198	11:23:14	4.6891	.0010	.0008	4.6880	.0000	.0000	.0000	0	.0000
STAT	TO	S23D	BRENNER		DFH0STAT	198	11:23:15	1.0024	.0020	.0011	1.0004	.0000	.0000	.0000	0	.0000
STAT	TO	S23D	BRENNER		DFH0STAT	198	11:23:29	13.6565	.0259	.0230	13.6306	.0001	.0000	.0000	0	.0000
STAT	TO	S23D	BRENNER		DFH0STAT	198	11:24:18	48.7524	.0015	.0012	48.7509	.0000	.0000	.0000	0	.0000
CEMT	TO	S23D	BRENNER		DFHEMTP	218	11:25:37	.0044	.0043	.0040	.0001	.0000	.0000	.0000	0	.0000
CEMT	TO	S23D	BRENNER		DFHEMTP	218	11:25:50	13.4984	.0028	.0025	13.4956	.0000	.0000	.0000	0	.0000
CEMT	TO	S23D	BRENNER		DFHEMTP	218	11:25:52	2.0055	.0042	.0038	2.0013	.0000	.0000	.0000	0	.0000
CEMT	TO	S23D	BRENNER		DFHEMTP	218	11:25:56	3.1811	.0035	.0029	3.1776	.0742	.0000	.0000	0	.0000
CEMT	TO	S23D	BRENNER		DFHEMTP	218	11:25:57	1.2135	.0034	.0031	1.2101	.0000	.0000	.0000	0	.0000
CEMT	TO	S23D	BRENNER		DFHEMTP	218	11:25:59	1.9512	.0013	.0010	1.9499	.0000	.0000	.0000	0	.0000
CBAM	TO	S23D	BRENNER		DFHECBAM	231	11:26:11	.0670	.0502	.0051	.0168	.0167	.0000	.0000	0	.0000
CBAM	TO	S23D	BRENNER		DFHECBAM	231	11:26:13	2.5339	.0012	.0008	2.5327	.0000	.0000	.0000	0	.0000
CBAM	TO	S23D	BRENNER		DFHECBAM	231	11:26:14	1.0145	.0014	.0010	1.0131	.0000	.0000	.0000	0	.0000
CEMT	TO	S23D	BRENNER		DFHEMTP	234	11:27:43	.0041	.0039	.0037	.0001	.0000	.0000	.0000	0	.0000
CEMT	TO	S23D	BRENNER		DFHEMTP	234	11:27:50	6.8877	.0027	.0023	6.8849	.0000	.0000	.0000	0	.0000
CEMT	TO	S23D	BRENNER		DFHEMTP	234	11:27:51	1.3002	.0037	.0034	1.2965	.0000	.0000	.0000	0	.0000
CEMT	TO	S23D	BRENNER		DFHEMTP	234	11:27:58	7.3975	.0038	.0027	7.3937	.0000	.0000	.0000	0	.0000
CEMT	TO	S23D	BRENNER		DFHEMTP	234	11:28:15	16.1091	.0076	.0045	16.1016	.0002	.0000	.0000	0	.0000
CEMT	TO	S23D	BRENNER		DFHEMTP	234	11:28:16	1.3915	.0031	.0028	1.3884	.0000	.0000	.0000	0	.0000
CEMT	TO	S23D	BRENNER		DFHEMTP	234	11:28:32	15.6272	.0100	.0046	15.6172	.0002	.0000	.0000	0	.0000
CEMT	TO	S23D	BRENNER		DFHEMTP	234	11:28:33	.9771	.0032	.0027	.9739	.0000	.0000	.0000	0	.0000
CEMT	TO	S23D	BRENNER		DFHEMTP	234	11:28:46	13.1519	.0060	.0022	13.1459	.0001	.0000	.0000	0	.0000
CEMT	TO	S23D	BRENNER		DFHEMTP	234	11:28:47	1.4551	.0044	.0027	1.4507	.0000	.0000	.0000	0	.0000

Figure 263. Sample report Using SELECT (List Transactions for Specified TERM and USERID)

**Example: Satisfying either criteria (“OR”)**

The following command produces a Performance List report like that shown in Figure 264 on page 542: It shows how data can be included in a report based on records that satisfy at least one of a number of conditions. In this example, a record is included in the report if it either shows a response time greater then 30 seconds or shows a terminal ID of P056.

```
CICSPA LIST(SELECT(PERFORMANCE(
    INCLUDE(RESPONSE(>30.0))),
    SELECT(PERFORMANCE(
    INCLUDE(TERM(P056)))))
```

LIST0001 Printed at 12:03:45 11/12/2013 Data from 11:11:44 2/14/2005 APPLID IYK2Z1V1 Page 1

Tran	SC	Term	Userid	RSID	Program	TaskNo	Stop	Response	Dispatch	User	CPU	Suspend	DispWait	FC Wait	FCAMRq	IR Wait
							Time	Time	Time	Time		Time	Time	Time		Time
CQRY	S	P056	CBAKER		DFHQRY	47	11:11:44	.0030	.0029	.0007	.0001	.0000	.0000	.0000	0	.0000
CQRY	S	P056	CBAKER		DFHQRY	47	11:11:44	.3890	.0016	.0007	.3874	.0000	.0000	.0000	0	.0000
CESN	S	P056	CBAKER		DFHSNP	48	11:11:44	.0028	.0028	.0018	.0001	.0000	.0000	.0000	0	.0000
CESN	TP	P056	CBAKER		DFHSNP	49	11:11:50	.0173	.0167	.0105	.0007	.0006	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	51	11:11:53	.0065	.0065	.0019	.0001	.0000	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	51	11:11:57	4.2096	.0063	.0018	4.2034	.0001	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	51	11:12:02	4.3841	.0018	.0010	4.3823	.0001	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	52	11:12:07	.0044	.0043	.0029	.0001	.0000	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	52	11:12:58	50.6951	.0029	.0027	50.6922	.0000	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	52	11:13:32	34.1747	.0030	.0027	34.1717	.0000	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	52	11:14:53	81.3172	.0043	.0031	81.3129	.0000	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	52	11:14:56	2.1921	.0034	.0030	2.1888	.0000	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	52	11:14:58	2.2332	.0056	.0033	2.2276	.0000	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	52	11:15:12	14.5575	.1887	.0894	14.3688	.2938	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	67	11:15:17	.0041	.0040	.0035	.0001	.0000	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	67	11:15:31	13.9899	.0040	.0037	13.9860	.0000	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	67	11:15:50	18.8996	.0037	.0035	18.8959	.0000	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	67	11:15:51	.8010	.0038	.0035	.7972	.0000	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	67	11:15:51	.7062	.0045	.0035	.7016	.0000	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	67	11:15:52	.3508	.0044	.0035	.3464	.0000	.0000	.0000	0	.0000
CEDA	TO	S23D	BRENNER		DFHEDAP	72	11:16:21	46.5125	.0010	.0008	46.5115	.0000	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	67	11:16:33	41.2444	.0045	.0036	41.2398	.0000	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	67	11:16:34	.6993	.0044	.0040	.6949	.0000	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	67	11:16:34	.7242	.0037	.0034	.7205	.0000	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	67	11:16:35	.6737	.0040	.0035	.6696	.0000	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	67	11:16:37	1.8029	.0067	.0036	1.7962	.0000	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	67	11:18:12	95.0977	.0042	.0035	95.0935	.0000	.0000	.0000	0	.0000
CEMT	TO	S208	BRENNER		DFHEMTP	66	11:20:31	308.883	.0021	.0012	308.881	.0000	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	67	11:20:33	141.000	.0045	.0032	140.996	.0000	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	67	11:20:43	10.3037	.0037	.0031	10.3001	.0000	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	67	11:20:44	.5915	.0038	.0031	.5877	.0000	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	67	11:21:13	29.5022	.0035	.0032	29.4988	.0000	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	67	11:21:15	1.1033	.0040	.0034	1.0992	.0000	.0000	.0000	0	.0000
CEMT	TO	S23D	BRENNER		DFHEMTP	140	11:21:24	51.3442	.0013	.0010	51.3429	.0000	.0000	.0000	0	.0000
RMST	TO	S23D	BRENNER	CJB3		178	11:22:38	48.9210	.0136	.0012	48.9074	.0000	.0000	.0000	0	.0024
CEMT	TO	P056	CBAKER		DFHEMTP	67	11:22:57	102.494	.0034	.0027	102.490	.0000	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	67	11:23:07	10.1192	.0062	.0036	10.1130	.0000	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	67	11:23:10	2.4865	.0030	.0025	2.4836	.0000	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	67	11:24:16	66.3943	.0033	.0031	66.3909	.0000	.0000	.0000	0	.0000
STAT	TO	S23D	BRENNER		DFH0STAT	198	11:24:18	48.7524	.0015	.0012	48.7509	.0000	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	67	11:24:44	28.3001	.0030	.0027	28.2971	.0000	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	67	11:24:56	11.8088	.0017	.0015	11.8071	.0000	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	67	11:25:32	36.1909	.0039	.0034	36.1870	.0000	.0000	.0000	0	.0000
CEMT	TO	P056	CBAKER		DFHEMTP	67	11:25:56	23.7983	.0783	.0617	23.7200	.0004	.0000	.0000	0	.0000
CSAC	TO	P056	CBAKER		DFHACP	233	11:27:34	.0021	.0014	.0013	.0007	.0000	.0000	.0000	0	.0000

Figure 264. Sample report using SELECT (list transactions for specified RESPONSE or TERM)

## Example: Excluding data

You can use the EXCLUDE operand to omit the data that you are not interested in. The following command produces a Performance List report like that shown in Figure 265 on page 543. In this example, transactions associated with terminal ID P052 and S028 are not reported.

```
CICSPA LIST(SELECT(PERFORMANCE(EXCLUDE(TERM(P052,S028)))))
```

Tran	SC	Term	Userid	RSID	Program	TaskNo	Stop	Response	Dispatch	User	CPU	Suspend	DispWait	FC Wait	FCAMRq	IR Wait
						Time	Time	Time	Time	Time	Time	Time	Time	Time		Time
CSSY	U		CBAKER		DFHAPATT	16	11:10:51	.0139	.0007	.0006	.0133	.0000	.0000	.0000	0	.0000
CSSY	U		CBAKER		DFHAPATT	17	11:10:51	.0185	.0010	.0014	.0175	.0001	.0000	.0000	0	.0000
CSSY	U		CBAKER		DFHAPATT	18	11:10:51	.0674	.0196	.0027	.0479	.0269	.0000	.0000	0	.0000
CGRP	U		CBAKER		DFHZCGRP	12	11:10:52	.4123	.0420	.0074	.3702	.3223	.0000	.0000	0	.0000
CSSY	U		CBAKER		DFHAPATT	15	11:10:52	.4204	.0568	.0100	.3636	.1744	.0000	.0000	0	.0000
CSSY	U		CBAKER		DFHAPATT	13	11:10:52	.6743	.0728	.0134	.6015	.4000	.0000	.0000	0	.0000
CSSY	U		CBAKER		DFHAPATT	10	11:10:52	.7498	.1910	.0228	.5588	.1997	.0000	.0000	0	.0000
CSSY	U		CBAKER		DFHAPATT	14	11:10:53	1.3344	.3202	.0378	1.0142	.2626	.0000	.0000	1	.0000
CSSY	U		CBAKER		DFHAPATT	11	11:10:53	1.4292	.1497	.0313	1.2794	.3461	.0000	.0000	0	.0000
CPLT	U		CBAKER		DFHSIPLT	7	11:11:07	15.9915	.3383	.0369	15.6532	.0155	.0000	.0000	0	.0000
CSSY	U		CBAKER		DFHAPATT	111	11:11:07	16.0761	9.3488	2.3435	6.7273	1.1645	.9522	.0000	2059	.0000
CWBG	S		CBAKER		DFHWBGB	24	11:11:08	.0262	.0248	.0041	.0013	.0012	.0000	.0000	0	.0000
CRSQ	S		CBAKER		DFHCRQ	25	11:11:08	.0818	.0449	.0040	.0369	.0367	.0000	.0000	0	.0000
CXRE	S		CBAKER		DFHXCZRE	27	11:11:09	.2255	.0243	.0049	.2011	.2009	.0000	.0000	0	.0000
CLR2	TO R11		CBAKER		DFHLUP	29	11:11:10	.0263	.0030	.0020	.0232	.0000	.0000	.0000	0	.0232
CSFU	S		CBAKER		DFHFCU	26	11:11:10	1.6968	1.5899	.1136	1.069	.0294	.0000	.0000	0	.0000
CSAC	TO SAMA		CBAKER		DFHACP	31	11:11:13	.5217	.0028	.0011	.5189	.0002	.0000	.0000	0	.0000
CLQ2	U		CBAKER		DFHLUP	28	11:11:13	3.8259	.0818	.0068	3.7441	.0035	.0000	.0000	0	3.7344
CEMT	TO SAMA		CBAKER		DFHEMTP	32	11:11:13	.1877	.1842	.0264	.0035	.0030	.0000	.0000	0	.0000
CEMT	TO SAMA		CBAKER		DFHEMTP	33	11:11:14	.0091	.0068	.0026	.0023	.0001	.0000	.0000	0	.0000
CEMT	TO SAMA		CBAKER		DFHEMTP	34	11:11:15	.0092	.0068	.0025	.0024	.0000	.0000	.0000	0	.0000
CSAC	TO SAMA		CBAKER		DFHACP	35	11:11:16	.5109	.0042	.0012	.5067	.0001	.0000	.0000	0	.0000
CSAC	TO SAMA		CBAKER		DFHACP	36	11:11:17	.5150	.0011	.0011	.5139	.0001	.0000	.0000	0	.0000
CSTE	U		CBAKER		DFHTACP	37	11:11:17	.1420	.1381	.0126	.0039	.0037	.0000	.0000	0	.0000
CATA	U		CBAKER		DFHZATA	38	11:11:27	.0537	.0394	.0121	.0143	.0003	.0000	.0000	0	.0000
CATA	U		CBAKER		DFHZATA	41	11:11:28	.0309	.0048	.0045	.0261	.0003	.0000	.0000	0	.0000
CQRY	S S23D		CBAKER		DFHQRY	42	11:11:29	.2951	.0013	.0008	.2938	.0000	.0000	.0000	0	.0000
CQRY	S S23D		CBAKER		DFHQRY	42	11:11:29	.4037	.0012	.0008	.4024	.0000	.0000	.0000	0	.0000
CESN	S S23D		CBAKER		DFHSNP	43	11:11:29	.0030	.0029	.0020	.0001	.0000	.0000	.0000	0	.0000
CESN	TP S23D		CBAKER		DFHSNP	45	11:11:41	.0203	.0197	.0114	.0006	.0006	.0000	.0000	0	.0000
CATA	U		CBAKER		DFHZATA	46	11:11:43	.0288	.0133	.0047	.0155	.0001	.0000	.0000	0	.0000
CQRY	S P056		CBAKER		DFHQRY	47	11:11:44	.0030	.0029	.0007	.0001	.0000	.0000	.0000	0	.0000
CQRY	S P056		CBAKER		DFHQRY	47	11:11:44	.3890	.0016	.0007	.3874	.0000	.0000	.0000	0	.0000
CESN	S P056		CBAKER		DFHSNP	48	11:11:44	.0028	.0028	.0018	.0001	.0000	.0000	.0000	0	.0000
CESN	TP P056		CBAKER		DFHSNP	49	11:11:50	.0173	.0167	.0105	.0007	.0006	.0000	.0000	0	.0000
AMNU	TO S23D		BRENNER		DFHSAMNU	50	11:11:53	.1724	.1720	.0091	.0004	.0004	.0000	.0000	0	.0000
CEMT	TO P056		CBAKER		DFHEMTP	51	11:11:53	.0065	.0065	.0019	.0001	.0000	.0000	.0000	0	.0000
CEMT	TO P056		CBAKER		DFHEMTP	51	11:11:57	4.2096	.0063	.0018	4.2034	.0001	.0000	.0000	0	.0000
CEMT	TO P056		CBAKER		DFHEMTP	51	11:12:02	4.3841	.0018	.0010	4.3823	.0001	.0000	.0000	0	.0000
CEMT	TO P056		CBAKER		DFHEMTP	52	11:12:07	.0044	.0043	.0029	.0001	.0000	.0000	.0000	0	.0000
ABRW	TO S23D		BRENNER		DFHSABRW	53	11:12:19	.5819	.0783	.0121	.5037	.0127	.0000	.0000	0	.4908
CATA	U		CBAKER		DFHZATA	55	11:12:29	.0329	.0048	.0044	.0281	.0001	.0000	.0000	0	.0000
CQRY	S P012		CBAKER		DFHQRY	56	11:12:32	.0008	.0007	.0006	.0001	.0000	.0000	.0000	0	.0000
CQRY	S P012		CBAKER		DFHQRY	56	11:12:53	21.2950	.0013	.0008	21.2938	.0000	.0000	.0000	0	.0000
CESN	S P012		CBAKER		DFHSNP	58	11:12:54	.0034	.0033	.0020	.0001	.0000	.0000	.0000	0	.0000
CEMT	TO P056		CBAKER		DFHEMTP	52	11:12:58	50.6951	.0029	.0027	50.6922	.0000	.0000	.0000	0	.0000
ABRW	TP S23D		BRENNER		DFHSABRW	59	11:13:17	.0070	.0034	.0029	.0036	.0000	.0000	.0000	0	.0036
CESN	TP P012		CBAKER		DFHSNP	60	11:13:19	.0166	.0159	.0103	.0007	.0006	.0000	.0000	0	.0000
ABRW	TP S23D		BRENNER		DFHSABRW	61	11:13:20	.0080	.0028	.0024	.0052	.0000	.0000	.0000	0	.0051
ABRW	TP S23D		BRENNER		DFHSABRW	62	11:13:21	.0064	.0027	.0023	.0036	.0000	.0000	.0000	0	.0036
ABRW	TP S23D		BRENNER		DFHSABRW	63	11:13:24	.0018	.0017	.0014	.0001	.0000	.0000	.0000	0	.0000
CEMT	TO P056		CBAKER		DFHEMTP	52	11:13:32	34.1747	.0030	.0027	34.1717	.0000	.0000	.0000	0	.0000

Figure 265. Sample report using SELECT (EXCLUDE)

## COPY instruction

You can use **COPY** or **INCLUDE** to instruct CICS PA at run time to obtain precoded commands from a command library and include them in your CICS PA job stream as command input. In this way, often-used sequences of commands can be readily reused. The command library is identified in the **CMDLIB DD** statement in your JCL.

The format of the COPY instruction is:

Name	Command	Operands	Comments
name (or blank)	<b>COPY</b> or <b>INCLUDE</b>	member[,member1,...,membern]	comments (or blank)

Figure 266 on page 544 shows an example of the COPY command. In this example, precoded commands necessary to produce a Performance List report and

Performance Summary report are obtained from the two command library members and placed in the job stream.

```
//CICSPA JOB (Job Accounting)
//CPA      EXEC PGM=CPAMAIN
//CMDLIB   DD  DSN=CICSPA.CMDLIB,DISP=SHR
           .
           .
           .
//SYSIN    DD  *
COPY LISTTPRF
COPY SUMMTPRF
/*
//
```

*Figure 266. Sample JCL using COPY*

---

## Chapter 18. Sample library

The CICS PA Sample Library (SCPASAMP) contains sample members to demonstrate CICS PA features, such as JCL to generate most of the CICS PA reports and extracts.

Member Name	Description
CPAAOR	Runs the Performance List and Summary reports for an AOR (Application-Owning Region).
CPACTGRP	Runs the CICS Transaction Gateway Statistics Activity Summary and Usage and Capacity reports.
CPADBCTL	Runs the Performance List and Summary reports for IMS (DBCTL).
CPADB2	Runs the DB2 reports (list, short summary, long summary).
CPADB2#	Runs the Performance List and Summary reports for a region using DB2.
CPADB2AD	Runs the DB2 utility to delete a row from the Statistics Alerts DB2 table.
CPADB2HK	Runs the DB2 utility to delete DB2 table rows based on relative date and time.
CPADB2PD	Runs the DB2 utility to delete a block of rows from the Performance Summary table using start and end date and time.
CPADB2SD	Runs the DB2 utility to delete all rows in the Dispatcher TCB Modes DB2 table for a specific TCB Mode Name and APPLID.
CPAFOR	Runs the Performance List and Summary reports for an FOR (File-Owning Region).
CPAHDB	<p>Runs the SMF Dump process, followed by Take-up, HDB Load, and selected reports. By combining take-up, HDB load and reporting into a single job step, all CICS PA functions can be performed by a single pass of the SMF data.</p> <p>For more information on this process, see “Take-up from SMF File” on page 131.</p>
CPALGDDL	Runs the DDL to define a DB2 table for the system logger extract data.
CPALGLOD	Runs the DB2 Load Utility statements to load the system logger extract data into a predefined DB2 table.
CPALOGR	Runs the System Logger reports (list and summary).
CPALSTSU	Runs the Performance List report specifying file CPU service unit conversion factor.
CPAMQ	Runs the WebSphere MQ List and Summary reports for MQ Accounting (SMF 116) Classes 1 and 3.



Member Name	Description
<b>CPAOMEGA</b>	Runs the OMEGAMON List and Summary reports for all supported DBMS types. 1. OMEGAMON List report of Total and Database segments 2. OMEGAMON List report of Total segment 3. OMEGAMON List report of Database segment for transaction codes starting with FNL* 4. OMEGAMON Transaction Summary report with Average and Maximum statistics for Total and Database segments 5. OMEGAMON Database Summary report with Average and Maximum statistics for Total and Database segments 6. OMEGAMON Transaction and Database Summary reports with Total, Maximum and 90% Peak Percentile for Database segments
<b>CPAPALST</b>	Runs the Performance Alerts list report: 1. Using a FORM to generate the FIELDS. SEVERITY(ALL) indicates that all transactions are reported regardless of whether they are eligible or whether they generate an alert. 2. Using the Alert Template to specify the fields in the report instead of a FORM. Operand SEVERITY(CRITICAL) indicates that only transactions with severity of Critical are reported. 3. Using the Alert Template to specify the fields in the report instead of a FORM. Operand SEVERITY(WARNING) indicates that only transactions with severity of Warning or Critical are reported. 4. Using the Alert Template to specify the fields in the report instead of a FORM. SEVERITY(INFO) indicates that only transactions with severity of Informational, Warning and Critical are reported. 5. Using the Alert Template to specify the fields in the report instead of a FORM. SEVERITY(ELIGIBLE) indicates that only transactions that are eligible for alert processing are reported. Eligible transactions are those that have field values that match the Resource values defined in the Alert definition. Eligible transactions with and without alerts are reported.
<b>CPAPASUM</b>	Runs the Performance Alerts summary report: 1. Using a FORM to generate the FIELDS. 2. Specifying SEVERITY(ELIGIBLE) to include only transactions that are eligible for alert processing. Eligible transactions are those that have field values that match the resource values defined in the alert definition. Eligible transactions with and without alerts are reported.
<b>CPAPAXTL</b>	Runs the Performance Alerts list extract using a FORM to generate the FIELDS operand. SEVERITY(ALL) indicates that all transactions will be included in the extract.
<b>CPAPAXTS</b>	Runs the Performance Alerts summary extract using a Form to generate the FIELDS operand. SEVERITY(ELIGIBLE) indicates that only transactions that are eligible for alert processing are reported. Eligible transactions are those that have field values that match the resource values defined in the alert definition. All eligible transactions with and without alerts are reported.
<b>CPAPCBTS</b>	Runs the BTS (CICS Business Transaction services) report.
<b>CPAPEXP</b>	Runs the Performance data extract.
<b>CPAPLIST</b>	Runs the Performance List report with default FIELDS settings.
<b>CPAPLSFC</b>	Runs the Performance List and Summary reports, tailored to present file control information.
<b>CPAPLSPC</b>	Runs the Performance List and Summary reports, tailored to present program control information.



Member Name	Description
CPAPLSTX	Runs the Performance List extended report with default FIELDS settings.
CPAPROFH	Runs the Transaction Profiling report comparing SMF report data against HDB baseline data.
CPAPROFS	Runs the Transaction Profiling report comparing SMF report data against SMF baseline data.
CPAPSUM	Runs the Performance Summary report with default FIELDS settings and sorted by Transaction ID and User ID.
CPAPTOT	Runs the Performance Totals report with default FIELDS settings.
CPAPTRGP	Runs the Transaction Group report.
CPAPWAIT	Runs the Performance Wait Analysis report.
CPAPWLM	Runs the Workload Activity reports (list, summary by service class, and summary by report class).
CPAPXSYS	Runs the Cross-System report and extract. The second job step (STEP2) runs the Performance List report against the extract created in the first job step.
CPASAHDB	Runs the Statistics HDB Alert report in various sort orders.
CPASASMF	Runs the Statistics Alert report (from SMF data) in various sort orders.
CPASPSM1	Uses sysout2pdf, to convert the Performance Summary report to PDF and save file in a z/OS UNIX directory.
CPASPSM2	Uses sysout2pdf, to convert a Performance Summary report containing many fields to a PDF with a custom page size. The report is sent as PDF and text attachments by email.
CPASPWT1	Uses sysout2pdf, to convert a Wait Analysis report to PDF, using a wait analysis report-specific filter that creates a bookmark for each transaction code. The report is sent as PDF and text attachments by e-mail.
CPASTLST	Runs the Statistics List report.
CPASUREX	REXX used to calculate the service unit conversion factor for the current LPAR.
CPATOD	Runs the Performance Summary report analyzing transaction activity by Time of Day.
CPATOR	Runs the Performance List and Summary reports for a TOR (Terminal-Owning Region).
CPATRSUM	Runs the tiered Performance Summary reports.
CPATRU	Runs the Transaction Resource Usage reports (list and summary) for files and temporary storage.
CPATTLST	Runs the Transaction Tracking List report.
CPATTSUM	Runs the Transaction Tracking Summary report.
CPAWEB	Runs the Performance List and Summary reports showing web activity.
CPAXCEPT	Runs the Exception List and Summary reports.

CICS PA has a powerful command language to request reports. This language allows you to tailor your report requests to address the many aspects of measuring CICS performance. The JCL samples demonstrate reporting for some of the more common CICS facilities.

In addition, the CICS PA dialog provides a comprehensive set of sample report forms for formatting your reports and extracts. See Table 6 on page 295 for the list of sample report forms provided by CICS PA.

---

## Part 5. Statistics reporting using the dialog

These topics show how to use the interactive Statistics Reporting facilities to produce reports from CICS statistics and server statistics, and also CICS Transaction Gateway statistics.

For a brief description of each field in the reports, see the CICS PA ISPF dialog online help. For more information on understanding and interpreting the CICS statistics data in the reports, see “Using CICS statistics” in the *CICS Transaction Server for z/OS Performance Guide*. For more information on understanding and interpreting the CICS Transaction Gateway statistics data in the reports, see “Monitoring and Statistics” in *CICS Transaction Gateway: z/OS Administration*.



---

## Chapter 19. Using the Statistics reporting dialog

The CICS PA dialog provides comprehensive reporting for the following types of statistics:

- CICS statistics and server statistics in SMF 110 records with the following subtypes:
  - 2 CICS Statistics
  - 3 Shared Temporary Storage Server Statistics
  - 4 Coupling Facility Data Table Server Statistics
  - 5 Named Counter Sequence Number Server Statistics
- CICS Transaction Gateway statistics in SMF 111 records

Short-term in-depth analysis or long-term trend analysis for your CICS statistics is available via the CICS PA Historical Database (HDB) and Statistics Reporting facilities.

The CICS PA statistics reporting complements the CICS utilities DFH0STAT and DFHSTUP. CICS PA presents CICS statistics in a similar way to DFH0STAT, the CICS sample statistics program. It does not accumulate and report statistics intervals like DFHSTUP.

All statistics reporting is available from the dialog. The procedure is:

1. Specify an SMF File or HDB. A list of CICS statistics intervals for all systems is displayed.
2. Select the interval. A menu of statistics categories and reports is displayed.
3. Select the report. The statistics report is displayed. There are two types of reports: label reports or tabular reports:
  - In label-based reports, fields are reported vertically. This is used when there is only one record for the report, typically an overview report.
  - In tabular reports, fields are reported horizontally. This format is displayed when there can be multiple records in the report, typically for CICS resources.
4. Sort on any column in the report, ascending or descending, using point-and-shoot column heading underlines.
5. Hyperlink to related reports using point-and-shoot field values.
6. Press Help (F1) to display descriptions of all fields in the report, together with their CICS field name and DB2 column name.
7. Press Form (F6) to edit the Report Form which controls the fields that are displayed in the report.

For more information on understanding and interpreting the CICS statistics data in the reports, see “Using CICS statistics” in the *CICS Transaction Server for z/OS Performance Guide*. For more information on understanding and interpreting the CICS Transaction Gateway statistics data in the reports, see “Monitoring and Statistics” in *CICS Transaction Gateway: z/OS Administration*.

In addition to reporting statistics using the dialog, you can also process statistics in Statistics Alert batch reports and extract statistics to delimited text files. For details, see Chapter 14, “Statistics alert reporting,” on page 355 and “Statistics extract” on page 274.

## CICS Statistics Reporting Menu

CICS PA provides a flexible and powerful interactive viewer for CICS statistics, either directly from SMF files or from historical data collected in an HDB.

To invoke the Statistics reporting dialog, select option 6 **Statistics** from the Primary Option Menu. Alternatively, you can enter **STATS** from the command line anywhere in the CICS PA dialog. The CICS Statistics Reporting Menu is displayed.

```
File Options Help
-----
CICS Statistics Reporting Menu

Command ==> _____

Select an option then press Enter.

- 1. SMF Files defined in Personal System Definitions
  2. SMF Files defined in Shared System Definitions
  3. Historical Databases for CICS Statistics
  4. Process SMF File
    _____ +

Filter Criteria:                      YYYY/MM/DD  HH:MM:SS
APPLID . . . . _____ Start . . _____
Image . . . . _____ Stop . . _____

Type . . . . _ EOD _ INT _ USS _ REQ _ RRT

Options 2 and 3:
Repository . . . . 'CICSPA.XYX.REPOSTRY' _____ +

F1=Help   F3=Exit   F4=Prompt   F6=Resize   F10=Actions   F12=Cancel
```

Figure 267. CICS Statistics Reporting Menu

The statistics reporting interface is the same, regardless of whether the data source is an SMF file or an HDB. Select from the following options to display a list of eligible SMF files or HDBs:

1. The list of SMF files in your Personal System Definitions.
2. The list of Daily SMF Files and log streams defined in Shared System Definitions.
3. The list of Statistics HDBs defined in the Repository.
4. An SMF File, whose data set name you specify in the accompanying field.

### Notes:

- For options 1 - 4 you can specify filter criteria to limit the CICS statistics intervals that are displayed.  
You can activate, deactivate, or change the filter later, when CICS PA displays the list of CICS statistics intervals. For details, see “Set Filter” on page 556.
- For options 1 and 2, only the SMF files that meet the APPLID and Image filter criteria are selected. Then when you browse the file, the remaining filter criteria are applied to limit the statistics intervals.
- For options 2 and 3, specify the **Repository** data set name that contains the Shared System Definitions or Statistics HDB definitions.

---

## SMF File list

You can display a list of SMF Files from either your Personal or Shared System Definitions. Similarly, you can display a list of container data sets from Statistics HDBs.

Option 1 from the Statistics Reporting Menu displays the list of SMF Files in your Personal System Definitions.

```
File Edit Options Help
-----
                                Personal SMF Files                                Row 1 to 7 of 7
Command ==> _____ Scroll ==> PAGE

Select one or more data sets to view reports.

SMF Data Set Name                                Volume
S  CICSPA.CICS640.STATS.SERVER.TS.SMF            DATA01
-  CICSPA.CICS650.DB2.SMF                        DATA02
-  CICSPA.CICS650.DB2.SMF.TEST0001              DATA02
-  CICSPA.MQS520.SMFDATA.MQ.TEST001             DATA04
-  CICSPA.CICS640.TRU.SMF                       DATA00
-  CICSPA.CICS640.TRU.SMF1                      DATA02
-  CICSPA.CICS650.LOGGER.SMF2                   DATA02
***** Bottom of data *****
```

Figure 268. Personal SMF Files

Option 2 from the Statistics Reporting Menu displays the list of SMF Files in the Shared System Definitions in the specified Repository.

```
File Edit Options Help
-----
                                Shared SMF Files                                Row 1 to 2 of 2
Command ==> _____ Scroll ==> PAGE

Select one or more data sets to view reports.

SMF Data Set Name                                Time Period
_  CICPRO.SMF.G1450V00                          Start 2005-03-14 20.30.00
                                           Stop  2005-03-15 00.00.00
-----
S  CICPRO.SMF.G1451V00                          Start 2005-03-14 20.45.57
                                           Stop  2005-03-15 00.00.00
-----
***** Bottom of data *****
```

Figure 269. Shared SMF Files

Enter line action **S** (or any non-blank character) to select one or more data sets for statistics reporting. A list of all the statistics collection intervals in the requested SMF Files is displayed. See Figure 272 on page 555.

---

## Statistics HDB list

Option 3 from the Statistics Reporting Menu displays the list of Statistics HDBs in the specified Repository.

File Options Help				
Report HDBs			Row 1 to 6 of 6	
Command ==>			Scroll ==> PAGE	
Select to run report.				
Name	Type	Description	Changed	ID
#STAT01	STATS		2005/02/25 16:58	SLC1
#STAT02	STATS		2005/02/11 13:19	AWS3
#STAT03	STATS		2005/02/08 20:10	SQU3
#WEB01	STATS	Web information 01	2005/02/09 08:55	JZH1
#WEB02	STATS	Web information 02	2005/02/09 08:58	CPB2
S #020902	STATS	Sample Statistics	2005/02/09 18:01	TOM1

Figure 270. Statistics HDBs

Enter line action **S** (or any non-blank character) to select a Statistics HDB for reporting. A pop-up menu prompts you to select one of the following options:

1. **Start online reporting.**
2. **Request batch Alert report.** See “Run Statistics HDB Alerts report” on page 668.
3. **Request batch List report.** See “Run Statistics HDB List report” on page 670.

## Online reporting

If you select online reporting, a list of the container data sets in the HDB is displayed.

File Options Help				
Run STATS HDB Report - #020902			Row 1 to 4 of 4	
Command ==>			Scroll ==> PAGE	
Specify run options then press Enter.				
Select data sets by:		----- Report Interval -----		HDB contains data
1. Report Interval	YYYY/MM/DD HH:MM:SS.TH	in the range:		
2. Data Set Name	From	2004/12/16 07:39:23		
	To	2004/12/16 11:28:17		
Filter Criteria	NO	Type	. . / EOD / INT / USS / REQ / RRT	
APPLID	. . . .			
Image	. . . .			
Data Set Name	----- Start -----	Volume		
CPA.#020902.D05040.T180209.HDB	2004/12/16 07:39:23	USER02		
CPA.#020902.D05040.T180212.HDB	2004/12/16 09:00:00	USER02		
CPA.#020902.D05040.T180215.HDB	2004/12/16 10:08:20	USER02		
CPA.#020902.D05040.T180218.HDB	2004/12/16 11:10:00	USER01		
***** Bottom of data *****				

Figure 271. Run Statistics HDB report

This panel shows the time period spanned by the data in the HDB and lists the container data sets.

Select one of the methods of reporting:

1. By report interval.
2. By data set name.

Then specify the report interval or enter line action **S** (or any non-blank character) to select an HDB data set for reporting.



When you have completed your selection, press Enter to continue with the report request. A list of all the statistics collection intervals in the selected data set is displayed. See Figure 272.

## Statistics intervals

CICS PA scans the specified SMF Files for statistics intervals and presents the list of intervals for further analysis.

```

File Edit Filter Options Help
-----
                        Statistics Intervals                        Row 18 from 38
Command ==> _____ Scroll ==> PAGE

Select the required CICS Statistics interval.

/ System Image VRM Type --- Collection Time --- Reset Duration
- CCVT31M FTS1 640 TS USS 2009/10/14 20:40:51 Wed 07:03:05
- CCVT31M FTS1 640 TS USS 2009/10/14 20:44:16 Wed 07:03:05
- CCVWSRP FTS1 640 TS USS 2009/10/14 20:50:02 Wed 08:50:25
- CCVWSRP FTS1 640 TS USS 2009/10/14 20:52:24 Wed 08:50:25
- CCVT31M FTS1 640 TS USS 2009/10/14 20:53:14 Wed 07:03:05
- CCVT32T FTS1 650 TS EOD 2009/10/15 00:00:00 Thu 18:16:09
- CCVT31T FTS1 640 TS EOD 2009/10/15 00:00:00 Thu 16:13:42
- CCVT31C FTS1 640 TS EOD 2009/10/15 00:00:00 Thu 00:00:00
- CCVT32C FTS1 650 TS EOD 2009/10/15 00:00:00 Thu 16:51:56
- CCVT32M FTS1 650 TS EOD 2009/10/15 00:00:00 Thu 00:00:00
- CCVT32CX FTS1 650 TS EOD 2009/10/15 00:00:00 Thu 00:00:00
- CICSTG01 FTS1 710 TG EOD 2009/10/15 00:00:00 Thu 00:00:00
- CCVT31M FTS1 640 TS EOD 2009/10/15 00:00:00 Thu 07:03:05
- CCVWSRP FTS1 640 TS EOD 2009/10/15 00:00:00 Thu 08:50:25
- CCVT32T FTS1 650 TS EOD 2009/10/15 00:00:00 Thu 16:15:32
- CCVT31C FTS1 640 TS EOD 2009/10/15 00:00:00 Thu 00:00:00
- CCVT31T FTS1 640 TS EOD 2009/10/15 00:00:00 Thu 18:16:33
S CCVT31CX FTS1 640 TS EOD 2009/10/15 00:00:00 Thu 12:24:27
- CCVT32M FTS1 650 TS EOD 2009/10/15 00:00:00 Thu 00:00:00
- CCVT31M FTS1 640 TS EOD 2009/10/15 00:00:00 Thu 00:00:00
- CCVT32CX FTS1 650 TS EOD 2009/10/15 00:00:00 Thu 00:00:00
***** Bottom of data *****

```

Figure 272. CICS Statistics Intervals

**Note:** The Type column indicates both the *system* type, such as TS for CICS Transaction Server or TG for CICS Transaction Gateway, and the *collection* type, such as INT or EOD. For a CICS TG system, the VRM column indicates the CICS TG VRM.

### Line Actions

- / Display the menu of line actions
- S View statistics reports for the specified interval
- P Print statistics reports for the specified interval
- D Delete the collection interval (from the display only)

### Primary Commands

#### RESET

This command (or RES) removes all unprocessed line actions and reinstates deleted intervals.

Also available from **Edit** in the action bar.

#### SORT SYSTEM|TYPE|COLLECT

This command sorts the list of CICS Statistics intervals:

## SYSTEM

Sorts intervals by system name (the System column). Intervals for the same system name are sorted by collection time in reverse chronological order (most recent first). This is the default sort order.

**TYPE** Sorts intervals by the Type column: the *system* type, such as TS for CICS Transaction Server or TG for CICS Transaction Gateway, then the *collection* type, such as INT or EOD. Intervals for the same system type and collection type are sorted by collection time in reverse chronological order.

## COLLECT

Sorts intervals by collection time in reverse chronological order.

You can also sort by selecting a point-and-shoot column heading.

## FILTER [ON | OFF]

Filters allow you to control the information displayed. When filtering is in effect **Filter Mode - More:** is displayed after the panel title.

There are three forms of the command:

- **FILTER** displays the active Filter where you can view or change the filtering criteria. See Figure 273.
- **FILTER OFF** suspends filtering and displays all the intervals.
- **FILTER ON** resumes filtering.

Also available from **Filter** in the action bar.

## Set Filter

The Set Filter panel is displayed when you select **Filter->Set filter** in the action bar of the Statistics Intervals panel or enter the **FILTER** command. This facility allows you to filter the intervals displayed in the current view. A statistics interval will only be displayed in the filtered view when all the specified filtering options are matched. All others are hidden (they are not deleted).

```
----- Set Filter -----
Command ==> _____

Specify filtering criteria then press Enter.

APPLID . . . _____ (Blank or pattern)
Image . . . _____ (Blank or pattern)

Type . . . . / EOD / INT / USS / REQ / RRT

                YYYY/MM/DD HH:MM:SS
Start . . . _____
Stop . . . . _____
```

Figure 273. Statistics Intervals: Set Filter

Specify the filtering criteria, then press Enter to set the filter.

When filtering is in effect, **Filter Mode - More:** is displayed after the panel title. On initial entry to Statistics Intervals, no filtering is in effect, except when reporting from HDB with Report Interval specified.

To reset the filter and redisplay all intervals and the row count, select **Filter->Set filter off** in the action bar. The filtering criteria will remain dormant in the Set Filter panel.

You can use the **FILTER ON** and **FILTER OFF** commands to swap between the filtered view and the full view of the data.

## Statistics categories and reports

For a selected interval, CICS Statistics are displayed in a tree structure of categories and reports. The menu is release-specific. There are slight differences between the reports that are available in each CICS release.

Table 14. Statistics categories and reports

Category	Subcategory or Report	ID	Minimum CICS TS VRM (640, unless otherwise stated)
CICS Performance Analyzer - CICS TS	Alert	0SA <b>1</b>	
Regions	Transaction Manager	010	
	<b>CICS Dispatcher</b>		
	Dispatcher Overview	060/062 <b>2</b>	
	Dispatcher TCB Modes	060/062 <b>2</b>	
	Dispatcher TCB Pools	060/062 <b>2</b>	
	MVS TCB Overview	064	
	MVS TCBs	065	
	<b>CICS Storage</b>		
	Storage Overview	002/014/029 <b>2</b>	
	DSAs	002/014/029 <b>2</b>	
	Domain Subpools	005/019 <b>2</b>	
	Task Subpools	006/020 <b>2</b>	
	<b>CICS Dumps</b>		
	Transaction Dump Overview	087	
	Transaction Dumps	085	
	System Dump Overview	090	
	System Dumps	088	
	Enqueue Pools	097	
	BUNDLE Resources	100	660
Connectivity	VTAM	021	
	Terminal Autoinstall	024	
	Terminals	034	
	ISC/MRO Connections	052	
	LU62 Mode Names	076	
	ISC Security	054	
	TCP/IP Overview	107	
	TCPIP SERVICE Resources	108	
	IPCONN Resources	109	650
	FEPI Connections	017	
	FEPI Pools	016	

Table 14. Statistics categories and reports (continued)

Category	Subcategory or Report	ID	Minimum CICS TS VRM (640, unless otherwise stated)
	FEPI Targets	018	
<b>Files and Databases</b>			
	Files	067	
	VSAM LSR Pools	039	
	VSAM LSR Pool Buffers	039	
	VSAM LSR Pool Files	040	
	DB2 Connections	102	
	DB2 Entries	103	
	IMS DBCTL Subsystems	028	
	WebSphere MQ Connections	074	650
<b>Logging</b>			
	Logstream Overview	092	
	MVS Logstreams	094	
	Journal Names	093	
	Recovery Manager	099	
<b>Queues</b>			
	Temporary Storage Overview	048	
	Transient Data Overview	045	
	Transient Data Queues	042	
<b>Transactions</b>			
	Transactions	011	
	Transaction Classes	012	
	Request Models	111 <b>3</b>	
<b>Programs</b>			
	PROGRAM Resources	025	
	Private PROGRAM Resources	036	690
	Program Autoinstall	023	
	Loader Activity	030	
	Loader DSAs	030	
	LIBRARY Resources	031	650
	Private LIBRARY Resources	032	690
	LIBRARY Data Set Names <b>4</b>	031	650
	Private LIBRARY Data Set Names	032	690
	<b>4</b>		
	PROGRAMDEF Resources	120	660
	Private PROGRAMDEF Resources	147	690
<b>Event Processing</b>			
	Event Capture	140	660
	EVENTBINDING Resources	141	660
	Event Processing	142	660
	CAPTURESPEC Resources	143	660
	EPADAPTER Resources	144	670
<b>CICS Web Support</b>			
	URIMAP Global	101	
	URIMAP Resources	104	
	PIPELINE Resources	105	
	WEBSERVICE Resources	106	

Table 14. Statistics categories and reports (continued)

Category	Subcategory or Report	ID	Minimum CICS TS VRM (640, unless otherwise stated)
	DOCTEMPLATE Resources	112	650
	ATOMSERVICE Resources	110	660
	XMLTRANSFORM Resources	113	660
<b>Java and Enterprise Java</b>			
	JVM Pool and Class Cache	117 <b>3</b>	
	JVM Profiles	118 <b>3</b>	
	JVM Profile Modes	118 <b>3</b>	
	JVM Programs	119	
	JVMSERVER Resources	116	
	CorbaServers	114 <b>3</b>	
	Enterprise Java Beans	115 <b>3</b>	
<b>Miscellaneous</b>			
	Monitoring	081	
	Statistics	066	
	Table Manager	063	
	User Domain	061	
<b>CICS Server</b>			
	<b>Temporary Storage</b>		
	List Structures	121	
	Queue Buffer Pools	122	
	Server Storage	123	
	<b>Named Counters</b>		
	List Structures	124	
	Server Storage	125	
	<b>Coupling Facility Data Tables</b>		
	List Structures	126	
	Table Access	127	
	Requests	128	
	Server Storage	129	
<b>CICS Performance Analyzer - CICS TG</b>	Alert	0SA <b>1</b>	
<b>CICS Transaction Gateway <b>5</b></b>	Connection Manager	000	(Minimum CICS TG VRM 710)
	CICS Server Statistics	001	
	CICS Server Instance for EXCI	002	
	CICS Server Instance for IPIC	007	
	Gateway Daemon	003	
	Protocol Handler	004	
	Worker Thread	005	
	System Environment	006	

- 1** The Alert report is only available for Statistics HDB reporting, not when processing SMF files. It displays the statistics collected in the HDB that complied with the conditions in the Alert definition. For similar batch reporting from the original SMF files, use the Statistics Alert report available in the Report Sets facility.

- 2** Statistics record ID 002 applies only to CICS version 640 and earlier.

Statistics record ID 014 applies only to CICS version 650 and 660.  
Statistics record ID 005 applies only to CICS version 660 and earlier.  
Statistics record ID 006 applies only to CICS version 660 and earlier.  
Statistics record ID 060 applies only to CICS version 670 and earlier.

**3** Statistics record IDs 111, 114, 115, 117, and 118 apply only to CICS version 670 and earlier.

**4** The Library Data Set Names and Private Library Data Set Names statistics reports appear in the tree structure only when you are selecting the reports you want to collect in an HDB or export to DB2. These reports do not appear in the tree structure for viewing or printing reports. To view these reports:

1. View the LIBRARY Resources report or Private LIBRARY Resources report.
2. Move the cursor to a library name, and then press Enter (the library name is a point-and-shoot field). The report displays the data set names in the concatenation for that library.

**5** CICS Transaction Gateway statistics were introduced in CICS TG V7.1. Selecting an interval from the Statistics Intervals list panel displays the Statistics Reports list panel, showing the appropriate reports for the system type: CICS TS or CICS TG.

When defining or maintaining a statistics HDB, the Statistics Reports list panel shows both CICS TS and CICS TG reports, enabling you to specify whether the HDB collects CICS TS statistics, CICS TG statistics, or both. Similarly, when exporting or extracting from a statistics HDB, this panel shows reports for both system types, so that you can export or extract data for both system types in a single pass.

---

## Statistics report tree

The reports for one statistics interval are presented in a tree structure (folder style) where the reports are grouped by category.

There are two tree structures: one for CICS Transaction Server statistics intervals, another for CICS Transaction Gateway intervals. The tree structure displayed depends on the system type of the selected interval.

```

File Edit Options View Help
-----
REPORT                               Statistics Reports
Command ==> _____ Scroll ==> PAGE

System: IYK3Z4/MV2C      Type: INT  Interval: 2009/05/15 07:42:00 Friday

---  ** Reports **                      Size
-   -   Regions                      416
      -   Transaction Manager          1
      -   CICS Dispatcher              37
          -   Dispatcher Overview      1
          -   Dispatcher TCB Modes     18
          -   Dispatcher TCB Pools     4
          -   MVS TCB Overview         1
          -   MVS TCBs                 13
      -   CICS Storage                 355
          -   Storage Overview         1
          -   DSAs                     8
          -   Domain Subpools          342
          -   Task Subpools            4
      -   CICS Dumps                   5
          -   Transaction Dump Overview 1
          -   Transaction Dumps         3
          -   System Dump Overview      1
          -   System Dumps              0
          -   Enqueue Pools             18
          -   BUNDLE Resources          0
      -   Connectivity                 31
          -   VTAM                     1
          -   Terminal Autoinstall     1
          -   Terminals                 25
          -   ISC/MRO Connections       2
          -   LU62 Mode Names           0
          -   ISC Security              1
          -   TCP/IP Overview           1

```

Figure 274. Statistics report menu tree for CICS Transaction Server

The Size column indicates the number of records in each report.

Enter line action **S** to select a report to display it, or print using the **P** line action.

## Line Actions

- /** Display the selection list of line actions
- S** Depends on the position in the tree:
  - \*\* Reports \*\***
    - Expand all categories, or collapse all categories if already expanded
  - Category**
    - Expand/Collapse the category
  - Report**
    - Display the report. You can use a Form to dynamically change the format of the report according to your requirements.
- I** Display information about the report
- P** Print the report, or all reports in the category. You are prompted for print options.
- D** Delete the category or report. The **RESET** command reinstates them.

## Primary Commands

### RESET

This command (or **RES**) clears outstanding line actions. It also expands all categories and reinstates deleted reports.

Also available from **Edit** in the action bar.

## VIEW [INClude|EXClude]

This command allows you to exclude from the tree structure any categories and reports that contain no data (indicated by a Size column value of 0). To toggle between including and excluding these categories and reports, enter **VIEW** without a parameter.

Also available from **View** in the action bar.

## Expand and collapse the report tree

The reports for one Statistics Interval are presented in a tree structure (folder style) where the reports are grouped by category. This is similar to the way in which some PC tools display folders and their contents. The categories can be expanded (to show) or collapsed (to hide) the reports contained within them.

**Tip:** If your terminal emulation software permits, it is recommended that you configure your Mouse Options to activate the Lightpen function. Then you can flip the display status of report categories by (left button) clicking the + (to expand) and - (to collapse) characters with your mouse. Use of your mouse as a lightpen might vary depending on your terminal emulation software.

Use your mouse or enter line action **S** to collapse one or all categories.

File Edit Options View Help		
-----		
REPORT	Statistics Reports	
Command ==>		Scroll ==> PAGE
System: IYK3Z4/MV2C      Type: INT    Interval: 2009/05/15 07:42:00 Friday		
-----		
	** Reports **	Size
+ ---	Regions	416
+ ---	Connectivity	31
+ ---	Files and Databases	23
+ ---	Logging	6
+ ---	Queues	64
+ ---	Transactions	203
+ ---	Programs	1,504
+ ---	Event Processing	0
+ ---	CICS Web Support	1
+ ---	Enterprise Java	5
+ ---	Miscellaneous	13
+ ---	CICS Server	0
	** End of Reports **	

Figure 275. Statistics report menu tree for CICS Transaction Server: all categories collapsed

Then use your mouse or line action **S** to expand the category of interest.



```

File Edit Options View Help
-----
REPORT                               Statistics Reports                               Line 1 of 11
Command ==> _____ Scroll ==> PAGE

System: IYK3Z4/MV2C      Type: INT  Interval: 2004/12/16 07:42:00 Thursday

---  +  ---  ** Reports **                               Size
      +  ---  Regions                                     416
            +  ---  Transaction Manager                   1
            +  ---  CICS Dispatcher                       37
            -  ---  CICS Storage                           355
                  +  ---  Storage Overview                 1
                  S  ---  DSAs                             8
                  +  ---  Domain Subpools                 342
                  +  ---  Task Subpools                   4
            +  ---  CICS Dumps                             5
            +  ---  Enqueue Pools                         18
      +  ---  Connectivity                               31
      +  ---  Files and Databases                         23
      +  ---  Logging                                    6
      +  ---  Queues                                     64
      +  ---  Transactions                               203
      +  ---  Programs                                  1,504
      +  ---  CICS Web Support                           1
      +  ---  Enterprise Java                           5
      +  ---  Miscellaneous                             13
      +  ---  CICS Server                                0
            ** End of Reports **

```

Figure 276. Statistics report menu tree for CICS Transaction Server: partially expanded

Enter line action **S** to select a report to display it, or print using the **P** line action. For more information on printed reports, see “Printing Statistics reports” on page 569.

## Display report information

Enter line action **I** to display report information.

Three levels of information about the report are provided:

1. **Interval Identification.** Identifies the Statistics interval from control information contained in the SMF statistics record.
2. **Report Identification.** Identifies the category and report name from the Statistics report tree.
3. **CICS Identification.** Identifies the CICS Domain that generated the data. Additional information ties the report back to the CICS macro that maps the Statistics data.

```
Report Information
Command ==> _____
Interval Identification:
System . . . : IYK3Z4A1 Image . . . : MV2C
VRM . . . : 640
Type . . . : EOD
Reset . . . : 07:41:14
Duration . . :
Interval . . : 2004/12/16 07:44:24 Thursday

Report Identification:
Category . . : Connectivity
Report . . . : ISC/MRO Connections

CICS Identification:
Domain . . . : AP Macro . . . : DFHA14DS
Stats ID . . : 052 DSECT . . . : DFHA14DS
```

Figure 277. Statistics report information

## Display label reports for global statistics

In label-based reports, fields are reported vertically. This is used when there is only one record for the report, typically an overview report.

```
REPORT      Storage Overview
Command ==>
Line 00000001
Scroll ==> PAGE

System: IYK3Z4/MV2C      Type: INT  Interval: 2004/12/16 07:42:00 Thursday

Page Pools . . . . . : 8
Storage Protection . . . . . : NO
Reentrant Programs Protected . . : YES
Transaction Isolation . . . . . : NO
Current Unique Subspace Users . . : 0
Total Unique Subspace Users . . : 0
Peak Unique Subspace Users . . : 0
Current Common Subspace Users . . : 0
Total Common Subspace Users . . : 0
Peak Common Subspace Users . . : 0
:
```

Figure 278. Statistics report for CICS Transaction Server: Storage Overview (label format)

## Display tabular reports for resource statistics

In tabular reports, fields are reported horizontally. This format is displayed when there can be multiple records in the report, typically for CICS resources.

REPORT Domain Subpools				Line 00000001 Col 002 008 >			
Command ==>				Scroll ==> PAGE			
System: IYK3Z4/MV2C				Type: INT Interval: 2004/12/16 07:42:00 Thursday			
Subpool Name	DSA Name	Element Type	Fixed Length	Element Chaining	Element Boundary	Location	Access
>LGJMC	ECDSA	FIXED	60	NO	4	ABOVE	CICS
AITM_TAB	ECDSA	FIXED	584	NO	8	ABOVE	CICS
AP_TCA24	CDSA	FIXED	1536	NO	128	BELOW	CICS
AP_TCA31	ECDSA	FIXED	1536	NO	128	ABOVE	CICS
AP_TXDEX	ECDSA	FIXED	72	NO	8	ABOVE	CICS
APAI031	ECDSA	FIXED	152	NO	8	ABOVE	CICS
APBMS	ECDSA	VARIABLE	0	YES	16	ABOVE	CICS
APCOMM31	ECDSA	VARIABLE	0	NO	16	ABOVE	CICS
APDWE	ECDSA	FIXED	32	NO	8	ABOVE	CICS
APECA	SDSA	FIXED	8	NO	8	BELOW	CICS
APICE31	ECDSA	FIXED	208	NO	8	ABOVE	CICS
APURD	ECDSA	VARIABLE	0	NO	16	ABOVE	CICS
ASYNCBUF	ECDSA	FIXED	4096	NO	4	ABOVE	CICS
BAGENRAL	ECDSA	VARIABLE	0	NO	16	ABOVE	CICS
BAOFBUSG	ECDSA	FIXED	24	NO	8	ABOVE	CICS
BAOFT_ST	ECDSA	FIXED	136	NO	8	ABOVE	CICS
BR_BFBF	ECDSA	FIXED	80	NO	16	ABOVE	CICS
BR_BFNFB	ECDSA	FIXED	96	NO	16	ABOVE	CICS

Figure 279. Statistics report for CICS Transaction Server: Domain Subpools (tabular format)

Scroll **Right** (F11) to display the remaining field columns in the report, or scroll **Left** (F10) to display the previous. Use the **FIND** command to search for a character string.

## Sorting

In Statistics tabular reports, you can sort on any column. To sort on a column, tab to the point-and-shoot underline of the column heading and press Enter. Repeated point-and-shoot sorting flips the sequencing between ascending and descending.

To reset the report to the original sort order, select **Edit->Reset** in the action bar or enter the **RESET** or **RES** command.

## Hyperlink

You can hyperlink from one report to another. Selected fields in the report will hyperlink to a related report. The hyperlink candidate fields are point-and-shoot fields. Position your cursor on the field value of interest and press Enter to link to that value in the related report.

Here is an example of how you can use hyperlink to trace data values.

1. Select DSAs to display the list of DSA types.

REPORT	Statistics Reports	Line 1 of 87
Command ==>		Scroll ==> CSR
System: IYK3ZAC1/MV2C	Type: EOD Interval: 2004/12/16 07:39:30 Thursday	
<pre> --      ** Reports ** --      - Regions --          Transaction Manager --          - CICS Dispatcher --              Dispatcher Overview --              Dispatcher TCB Modes --              Dispatcher TCB Pools --              MVS TCB Overview --              MVS TCBs --          - CICS Storage --              Storage Overview --              S DSA --              Domain Subpools --              Task Subpools </pre>		
		Size
		418
		1
		35
		1
		18
		4
		1
		11
		359
		1
		8
		346
		4

Figure 280. Select DSAs report

2. The list of DSAs is displayed.

REPORT	DSAs	Line 00000001 Col 002 008 >
Command ==>		Scroll ==> CSR_
System: IYK3ZAC1/MV2C	Type: EOD Interval: 2004/12/16 07:39:30 Thursday	
DSA Name	DSA Location	Access
	DSA Index	Current DSA Size
		Peak DSA Size
		Current Cushion Size
CDSA	BELOW	CICS
UDSA	BELOW	CICS
SDSA	BELOW	CICS
RDSA	BELOW	CICS
ECDSA	ABOVE	CICS
EUDSA	ABOVE	CICS
<b>ESDSA</b>	ABOVE	CICS
ERDSA	ABOVE	CICS
		1
		2
		3
		4
		5
		6
		7
		8
		512K
		0K
		256K
		512K
		6144K
		11264K
		1024K
		20480K
		512K
		6144K
		11264K
		128K
		0K
		128K
		256K

Figure 281. Hyperlink on DSA name ESDSA

3. Use hyperlink to view the list of SUBPOOLS that belong to an individual DSA. Position the cursor at the required DSA name and then press Enter. The list of Domain Subpools that belong to the selected DSA is displayed, in this case ESDSA.

```

REPORT      Domain Subpools                               Line 00000001 Col 002 008  >
Command ===> _____ Scroll ===> CSR

System: IYK3ZAC1/MV2C      Type: EOD  Interval: 2004/12/16 07:39:30 Thursday

Subpool    DSA      Element      Fixed      Element      Element
Name        Name      Type        Length     Chaining     Boundary   Location
-----
IE_BUFF     ESDSA    VARIABLE      0         NO           16        ABOVE
IIBUFFER    ESDSA    VARIABLE      0         NO           16        ABOVE
LDEPGM      ESDSA    VARIABLE      0         NO           16        ABOVE
LDERES      ESDSA    VARIABLE      0         NO           16        ABOVE
SJSJPTE     ESDSA    FIXED         408       NO           8         ABOVE
SJSJSTK     ESDSA    FIXED          8         NO           8         ABOVE
SJSJTCB     ESDSA    FIXED        1336     NO           8         ABOVE
SJSJVMS     ESDSA    FIXED        2200     NO           8         ABOVE
SJUSERKY    ESDSA    VARIABLE      0         NO           16        ABOVE
SMShRU31    ESDSA    VARIABLE      0         YES          16        ABOVE
WEBINB      ESDSA    FIXED       32768    YES           8         ABOVE

```

Figure 282. Domain Subpools report for DSA name ESDSA

## Statistics Report Forms

The Statistics Report Forms allow you to tailor the format of each Statistics report. Each line in the Form represents a row heading in the label report or a column heading in the tabular report.

```

FORM      Transaction Manager                               Line 1 of 12
Command ===> _____ Scroll ===> PAGE

/  Heading                                                    Usage
-  Transactions                                              _____
-  Current MAXTASK                                           _____
-  Current Active User Transactions                          _____
-  Current Queued User Transactions                          _____
-  Times at MAXTASK                                           _____
-  Peak Active User Transactions                             _____
-  Peak Queued User Transactions                             _____
-  Total Active User Transactions                            _____
-  Total Delayed User Transactions                           _____
-  Total Queuing Time for MAXTASK                            OMIT_
-  Current Queuing Time for MAXTASK                          OMIT_
-  Total Transactions to Last Reset                          _____
***** End of Form *****

```

Figure 283. Statistics Report Form (label format): Transaction Manager

FORM TCIPSERVICE Resources		Line 1 of 23	
Command ==>		Scroll ==> PAGE	
		----- Width -----	
/	Heading	Usage Column	Max Report
-	TCP/IP Service	FIX	8 8
A	Transactions Attached		12 22
-	Current Connections		11 35
-	Peak Connections		11 48
-	Time Opened GMT		19 69
-	Time Opened Local		19 90
-	Time Closed GMT		19 111
-	Time Closed Local		19 132
M	Port Number		10 144
-	SSL Support Level		8 154
-	Port Backlog		10 166
-	Send Requests		10 178
-	Bytes Sent		10 190
-	Receive Requests		10 202
-	Bytes Received		10 214
-	WLM DNS Group	10	18 234
-	Protocol		8 244
-	Authenticate	12	12 258
-	Privacy		8 268

Figure 284. Statistics Report Form (tabular format): TCIPSERVICE Resources

The order of the fields in the Form dictates the order of the fields in the report. You can move the fields to the required position. You can **OMIT** fields that you do not want reported. You can also **FIX** fields at the start of the report so that they remain in view when you scroll right. For long character fields in tabular reports, you can truncate the field in the report by specifying a **column width**.

The **F** and **O** line actions toggle the state of a field. That is, reentering the **O** line action against an omitted field restores it. Reentering the **F** line action against a fixed field “unfixes” it. The RESET FORM command reverts the form to its default layout.

When you save the Form (F3), the report changes to reflect the current Form.

### Statistics field help

Field descriptions are available for all statistics reports.

Field Descriptions for Statistics Report

Category : Files and Databases	Macro . . : DFHA17DS
Report . : Files	DSECT . . : DFHA17DS

---

More: +

File Name

CICS field name: A17FNAM                      DB2 column name: FILE\_NAME

The name you specified in the DEFINE FILE command of resource definition online.

Reset characteristic: Not reset

---

File Location

CICS field name: A17FLOC                      DB2 column name: FILE\_LOCATION

The file is defined as being local to this CICS system, or resides on a remote CICS system. The field is one byte long, and is set to "R" if remote.

Reset characteristic: Not reset

---

Data Table Fields

CICS field name: A17DT                      DB2 column name: DATA\_TABLE\_FIELDS

A one-byte field that contains the value R, S, T, L, K, or X, if data table statistics fields are present in the record. The values indicate:

R    This is a remote file for which table read and source read statistics are present.

S    The resource was not opened as a table but was able to access data from a table associated with the same data set.

T    The resource is a shared data table.

L    The resource is a coupling facility data table (locking model).

K    The resource is a coupling facility data table (contention model).

X    The resource has been opened with a source data set which has an associated CICS maintained data table and the resource has been updated which has caused the data table to also be updated.

Reset characteristic: Not reset

*Figure 285. Statistics field help: Files (Statistics ID 067A)*

The field help provides a description of each statistic, together with the CICS field name and the CICS PA DB2 column name.

## Printing Statistics reports

Statistics reports can be printed, either to a DASD data set or SYSOUT file. Printed reports honor your current Form.

To print a statistics report, enter line action **P** against the report in the menu tree.

Print Statistics Report

Command ==>

Specify Statistics Report print options.

Report Destination:

1

1. Data Set

2. SYSOUT

Output Data Set:

Data Set Name . .

STATS.REPORT

Disposition . . .

1

1. OLD

2. MOD

(If cataloged)

Enter "/" to select option

/

Browse output data set

Report Output:

SYSOUT Class . .

A

Print Lines per Page . .

60

(0-255)

F1=Help

F3=Exit

F6=Resize

F12=Cancel

Figure 286. Print Statistics report

The data set can be PDS (with member) or PS (including GDG).

DCB information: RECFM=VBM LRECL=1024 BLKSIZE=6160

The following report is an example of a printed Statistics report.

V5R2M0

CICS Performance Analyzer

CICS TS Statistics - Domain Subpools

System: IYK3Z7FA/MV2C VRM: 680 Type: EOD Interval: 2012/07/24 02:33:10 Tuesday Reset: 05:12:40 Duration:

Subpool Name	DSA Name	Element Type	Fixed Length	Element Chaining	Element Boundary	Location	Access	DSA Index	Initial Free Area	GETMAIN Requests	FREEMAIN Requests
>LGJMC	ECDSA	FIXED	60	NO	4	ABOVE	CICS	ECDSA	4K	3	0
ATM_TAB	ECDSA	FIXED	584	NO	8	ABOVE	CICS	ECDSA	4K	20	0
AP_TCA24	CDSA	FIXED	1536	NO	128	BELOW	CICS	CDSA	16K	230	227
AP_TCA31	ECDSA	FIXED	1536	NO	128	ABOVE	CICS	ECDSA	96K	3983	3980
AP_TXDEX	ECDSA	FIXED	72	NO	8	ABOVE	CICS	ECDSA	4K	133	5
APAI031	ECDSA	FIXED	152	NO	8	ABOVE	CICS	ECDSA	4K	2	2
APBMS	ECDSA	VARIABLE	0	YES	16	ABOVE	CICS	ECDSA	0K	0	0
APCOMM31	ECDSA	VARIABLE	0	NO	16	ABOVE	CICS	ECDSA	0K	3727	3727
APDWE	ECDSA	FIXED	32	NO	8	ABOVE	CICS	ECDSA	4K	50	50
APECA	SDSA	FIXED	8	NO	8	BELOW	CICS	SDSA	0K	0	0
APICE31	ECDSA	FIXED	200	NO	8	ABOVE	CICS	ECDSA	4K	50	47
APURD	ECDSA	VARIABLE	0	NO	16	ABOVE	CICS	ECDSA	0K	0	0
ASYNCBUF	ECDSA	FIXED	4096	NO	4	ABOVE	CICS	ECDSA	0K	0	0
BAGENRAL	ECDSA	VARIABLE	0	NO	16	ABOVE	CICS	ECDSA	0K	7	0
BAOFBUSG	ECDSA	FIXED	24	NO	8	ABOVE	CICS	ECDSA	0K	0	0
BAOFT_ST	ECDSA	FIXED	136	NO	8	ABOVE	CICS	ECDSA	0K	0	0
BR_BFBE	ECDSA	FIXED	80	NO	16	ABOVE	CICS	ECDSA	0K	0	0

Figure 287. Statistics report print



---

## Part 6. Using the Historical Database (HDB)

These topics tell you how to use the CICS PA Historical Database (HDB) facility for performance trend analysis.



---

## Chapter 20. Guided Tour: Performance HDB

CICS PA Historical Database is a repository of statistics and performance related data for your CICS systems.

CICS PA Historical Database uses SMF records to build a history of statistics and performance-related data that can be customized to meet your various reporting requirements. Your Historical Database environment is controlled from the CICS PA ISPF dialog. It provides a fully managed environment from where you can control all aspects of CICS statistics and performance data, including collection and reporting.

Implementing a statistics and performance data warehouse requires a considerable investment. Careful planning is required to ensure that the data you collect today is useful in the long term to measure CICS performance trends and workloads to help you plan for the future. Therefore it is important that you are familiar with the features and capabilities of the CICS PA Historical Database before embarking on implementation.

This chapter introduces the CICS PA Historical Database (HDB) facility and describes the concepts. It then takes you on a Guided Tour to show you how to use the CICS PA dialog to define and maintain your Performance HDBs, produce reports and export the HDB data to DB2 tables.

---

### What is an HDB?

An HDB (Historical Database) is a definition that allows you to collect, report and manage CICS statistics and transaction performance data. In the CICS PA Historical Database environment, you can create as many HDBs as required.

An HDB has the following components:

- Options that allow you to tailor the HDB to meet your requirements.
- A Template that defines the CICS performance data to be included in the HDB. Templates allow you to customize what information is to be contained in the HDB. They are similar to Report Forms. Templates are relevant only to Performance HDBs (List and Summary), they are not required for Statistics HDBs.
- Selection Criteria that allow you to filter the CMF Performance Class data used to build the HDB.
- Container data sets that contain either the HDB performance data or the HDB statistics data.

There are two types of Performance HDB, List and Summary, where the HDB type is determined by the Template. There is a third type of HDB, Statistics, for CICS Statistics and Server statistics data and CICS Transaction Gateway statistics data. For a Statistics HDB, instead of a Template, you select from a menu the statistics categories and reports that identify the data that you want collected.

### List HDB

Records in a List HDB represent single events. For example, the execution of a single transaction with its associated performance characteristics. Typically, one

CMF Performance record creates one List record. The List HDB is analogous to the CICS PA Performance List report, for more information, see “Performance List report”.

The following figure shows an example of a List HDB:

---

Start Time	Tran ID	Userid	Response Time	CPU Time	Dispatch Time	Dispatch Count	Suspend Time	Suspend Count	File Calls
2002-05-31-12.56.47.9763	MENU	JOHN	0.9956	0.1020	0.7567	2	0.2012	1	7
2002-05-31-12.56.49.1223	STOK	CHRIS	1.5464	0.4943	1.1028	3	0.4376	2	12

---

Figure 288. Example of a List HDB

List HDBs typically have a short lifespan and are used to provide detailed ad-hoc reporting or to diagnose performance problems.

## Summary HDB

Records in a Summary HDB represent a summarization (or average) of one or more events over time. For example, the performance characteristics of a Transaction ID over a 15 minute interval. Typically, many CMF Performance records create one Summary record. The Summary HDB is analogous to the CICS PA Performance Summary report (see Performance Summary report).

The following figure shows an example of a Summary HDB:

---

Start Time	Tran ID	Task Count	Average Response Time	Average CPU Time	Average Dispatch Time	Average Dispatch Count	Average Suspend Time	Average Suspend Count	Average File Calls
2002-05-31-12.00.00	MENU	12	0.9956	0.1020	0.7567	2	0.2012	1	7
2002-05-31-12.00.00	STOK	17	1.5464	0.4943	1.1028	3	0.4376	2	12

---

Figure 289. Example of a Summary HDB

Summary HDBs typically have a longer lifespan and are built up over time to provide historical reporting and trend analysis.

## Statistics HDB

A Statistics HDB provides the ability to warehouse and analyze CICS statistics data via powerful online viewing and reporting facilities. Short-term in-depth analysis or long-term trend analysis for your CICS statistics is possible.

The following figure shows an example of a Statistics HDB:

Statistics Reports		Line 1 of 87	
Command ==>		Scroll ==> PAGE	
		DB2	
—	** Report **	Collect	Load
-	Regions	Yes	Yes
-	Transaction Manager	Yes	No
-	D CICS Dispatcher	No	No
—	Dispatcher Overview	No	No
—	Dispatcher TCB Modes	No	No
—	Dispatcher TCB Pools	No	No
—	MVS TCB Overview	No	No
—	MVS TCBs	No	No
-	A CICS Storage	Yes	Yes
—	Storage Overview	Yes	Yes
—	DSAs	Yes	Yes
—	Domain Subpools	Yes	Yes
—	Task Subpools	Yes	Yes
-	CICS Dumps	Yes	No
—	Transaction Dump Overview	Yes	No
—	Transaction Dumps	Yes	No

Figure 290. Example of a Statistics HDB definition

Statistics data is collected for activated categories and reports with **Collect=Yes**.

```
REPORT                               Statistics Reports                               Line 1 of 87
Command ==> _____ Scroll ==> PAGE

System: IYK3Z4/MV2C                 Type: INT   Interval: 2004/12/16 07:42:00 Thursday

__      ** Reports **                Size
-  __  Regions                      379
    __  Transaction Manager          1
-  __  CICS Dispatcher               0
    __  Dispatcher Overview          0
    __  Dispatcher TCB Modes         0
    __  Dispatcher TCB Pools         0
    __  MVS TCB Overview              0
    __  MVS TCBs                     0
-  __  CICS Storage                  355
    __  Storage Overview             1
    __  DSAs                         8
    __  Domain Subpools              342
    __  S Task Subpools               4
-  __  CICS Dumps                    5
    __  Transaction Dump Overview    1
    __  Transaction Dumps            3
    __  System Dump Overview         1
    __  System Dumps                 0
```

Figure 291. Example of a Statistics HDB data collection

Size indicates the number of records collected.

System: IYK3Z4/MV2C Type: INT Interval: 2004/12/16 07:42:00 Thursday

DSA Name	Location	Access	DSA Index	GETMAIN Requests	FREEMAIN Requests	Element Storage	Page Storage	Elements	Peak Page Storage
CDSA	BELOW	CICS	CDSA	97	92	5680	20K	5	56K
UDSA	BELOW	CICS	UDSA	0	0	0	0K	0	0K
ECDSA	ABOVE	CICS	ECDSA	5661	5654	8064	16K	7	52K
EUDSA	ABOVE	CICS	EUDSA	1	1	0	0K	0	64K

Figure 292. Example of a Statistics HDB report

## HDB data

An HDB keeps its data in sequential data sets called containers. A new data set is created every time a request is submitted to load data into the HDB.

Saving data in small data sets rather than one monolithic table or data set makes management of the environment simpler:

- You can start using an HDB immediately without worrying whether enough DASD space is available to hold many year's worth of data.
- DFHSM can migrate old data, ensuring only the most recent or required data is retained online for immediate reporting, saving expensive DASD resources.
- ABENDX37 conditions are avoided. In the event of a data set full condition, CICS PA simply closes the full data set and continues loading into a new one.
- Individual data sets can be loaded directly into a DB2 table or CSV extract data set for further analysis.

## How to analyze HDB data

Three facilities are provided to help you analyze HDB data:

### 1. Reporting.

The HDB Reporting facility provides flexible reporting of HDBs via Report Forms.

You can also use the Transaction Profiling report to compare data in a Performance HDB with data in SMF files, data in the same HDB, or data in another Performance HDB.

### 2. Exporting to DB2.

HDB data can be loaded directly into a DB2 table for further analysis. HDB data is saved in a format that is suitable for direct load. The HDB Export facility automates this process for you.

### 3. Extracting to CSV.

HDB data can be exported into an extract data set in CSV format (comma separated values) for further analysis by PC spreadsheet tools.

## HDB tour outline

Every aspect of the CICS PA Historical Database is controlled via the ISPF dialog.

This section takes you through the process of defining and using an HDB for CMF performance class data.

**Setup.** Initially, your HDB environment requires a minimal one-time setup. HDB definitions are saved in the Repository, a VSAM KSDS. CICS PA automatically defines the repository for you when you first try to use it.

Then the required steps are:

1. **Template.**

Defining an HDB is a two-step process: first define a Template and then define an HDB based on that Template. The Template identifies which CMF performance fields are to be kept in the HDB.

2. **Definition.**

After the Template is defined, then define the HDB and its options, such as the characteristics of the HDB data sets and the retention period of the data.

3. **Load.**

Loading data into the HDB is performed by the standard CICS PA batch reporting utility. The command that requests the utility to load an HDB is:

```
HDB(LOAD(...
```

CICS PA reads the CMF performance class data and builds the HDB data sets. Because the HDB Load process is part of the normal batch reporting process, you can run CICS PA reports and load HDBs together with a single pass of the SMF data.

4. **Report.**

Reporting against an HDB is performed by the standard CICS PA batch reporting utility. The command that requests the utility to report against an HDB is:

```
HDB(REPORT(...
```

You can tailor HDB reporting by using a Report Form. This allows you to select which fields in the HDB are reported and how they are presented.

5. **Export.**

Export allows you to load HDB data into a DB2 table. CICS PA automates this process with two simple steps:

- a. First define the DB2 table to house the data. CICS PA generates JCL to do this for you by creating the necessary DDL to define the table.
- b. Then load the data into the table. CICS PA generates JCL to do this for you by creating the necessary DB2 Load Utility statements to load the data.

6. **Extract.**

The HDB Extract facility allows you to export data from your HDB data sets to an extract data set in CSV format, suitable for import into PC-based spreadsheet applications for further analysis.

7. **Maintain.**

HDB maintenance allows you to change your HDB definition and manage the HDB container data sets.

8. **Housekeeping.**

HDB housekeeping should be run periodically to clean up your HDB environment. Housekeeping performs these tasks:

- a. Deletes HDB container data sets that have expired or have delete pending.
- b. Deletes expired DB2 table rows.
- c. Removes definitions from the Repository that are no longer required.

For more information, see *Housekeeping*.

---

## Historical Database Menu

Option 5 **Historical Database** from the CICS PA Primary Option Menu takes you to the Historical Database Menu. The HDB menu is presented in typical processing sequence.

```
File  Options  Help
-----
                                Historical Database Menu
Option ==> _____

1 Templates      Design HDB Templates
2 Define         Define a new HDB
3 Load          Load data into the HDBs
4 Report         Submit HDB report requests
5 Export         Export HDB data sets to DB2
6 Extract        Extract HDB data sets to CSV
7 Maintenance    Maintain HDB definitions and data sets
8 Housekeeping   Perform HDB housekeeping

Repository . . . . 'CICSPROD.CICSPA.HDB.REPOSTRY' _____ +

CICS versions (VRM):
Transaction Server . . . 680
Transaction Gateway . . . 900

F1=Help    F3=Exit    F4=Prompt    F10=Actions    F12=Cancel
```

Figure 293. Historical Database (HDB) Menu

Specify the repository data set name. Remember that you might want to share this repository with other users. This will ensure that HDB data can be generated once and made available to everyone.

---

## HDB Templates

Templates specify the performance information that is to be contained in an HDB. Templates are used by List and Summary HDBs. They are not required for Statistics HDBs which instead use a menu-selection facility.

Customize the Templates to specify the data that you want to be contained in the HDB. Templates are similar to Report Forms which are used to customize reports.

Select option 1 **Templates** from the HDB menu to define (or update) Templates.

```
File  Options  Help
-----
                                HDB Templates
Command ==> NEW _____ Scroll ==> CSR_

Select to edit Template. Enter NEW command to define a new Template.

/ Name      Type      Description      Changed      ID
***** End of list *****

F1=Help    F3=Exit    F7=Backward  F8=Forward  F10=Actions  F12=Cancel
```

Figure 294. HDB Templates

The NEW command is used to define a new Template.



```

File  Systems  Options  Help
-----
                          New HDB Template
Command ==> _____

Specify new Template options.

Name . . . . . PRODSUM_  Version (VRM) . . . ____ +

System Selection:          Field Categories:
APPLID . . . . ____ +    _ Select to specify Field Categories
MVS Image . . ____

Template Type:
2  1. List
-  2. Summary

```

Figure 295. New HDB Template

You need to specify the Template name and type. Other options affect which CMF Fields the Template will initially be defined with. They can be used to reduce the amount of fields contained in the Template.

In this example, a Summary Template called PRODSUM is created. Press **Enter** to proceed with defining the Template.

```

File  Edit  Confirm  Upgrade  Options  Help
-----
                          EDIT Summary Template - PRODSUM
Command ==> _____ More: >
                          Scroll ==> CSR_

Description . . . Summary HDB Template_____ Version (VRM): 690

Selection Criteria:
_ Performance          Time Interval . . 00:15:00 (hh:mm:ss)

Field
/  Name +   K Description
__ START__  A Task start time
__ MVSID__  A MVS SMF ID
__ APPLID__ A CICS Generic APPLID
__ TRAN__   A Transaction identifier
__ TASKCNT_ Total Task count
__ RESPONSE Transaction response time
__ DISPATCH Dispatch time
__ CPU_____ CPU time
__ SUSPEND_ Suspend time
__ DISPWAIT Redispach wait time
__ FCWAIT__ File I/O wait time
D_ FCAMCT__ File access-method requests
__ IRWAIT__ MRO link wait time
__ SC24UHW  UDSA HWM below 16MB
I_ SC31UHW  EUDSA HWM above 16MB
__ TSWAIT__ VSAM TS I/O wait time
__ EOD_____ ----- End of HDB -----
__ TERM_____ A Terminal ID
__ APPLTRAN A Application naming Tran ID
__ APPLPROG A Application naming Program
__ STOP_____ A Task stop time
F1=Help    F3=Exit    F4=Prompt    F5=Rfind    F7=Backward F8=Forward
F10=Actions F11=Right  F12=Cancel

```

Figure 296. Edit Summary Template

Templates are similar to Report Forms. Where Report Forms define the fields to be included in a report or extract, Templates define the fields to be included in an HDB.

When you define a new Template, the default fields list is initially displayed. Edit the Template to include the required fields.

The **EOD** marker in the Template signifies the end of fields that is included in the HDB. Fields after the EOD marker will not be included in the HDB. You can move required fields above the EOD marker to include them in the HDB.

The example in Figure 296 on page 579 displays the default Summary Template. Key fields are positioned at the top and the most common performance indicators like response, dispatch and suspend times are included.

Edit the Template to meet your reporting requirements. In the example above, FCAMCT is deleted and TSWAIT is inserted.

Specify Performance Selection Criteria and the Report Interval to control the data you want in your HDBs:

#### **Selection Criteria**

Templates have optional Selection Criteria that allows you to filter the CMF performance class records used to build the HDB. For example, the HDB only includes data for transactions that use File Control services (FCTOTAL>0).

Select Performance to specify Selection Criteria.

#### **Report Interval**

Summary Templates specify a recording time interval. The default is 1 minute which indicates that summary data is accumulated and recorded in 1 minute intervals. Select the interval carefully because it will impact on HDB processing as follows:

1. **Loading.** Shorter recording intervals write more records, increasing the size of your HDB data sets.
2. **Reporting.** Longer recording intervals restrict reporting. For example, if you specify a recording interval of 1 hour then you can only report on 1 hour (or higher) intervals, and 15 minute interval reporting is not possible.

Therefore selecting the correct interval is a balance between not loading too much data and not restricting reporting. In the example above the interval has been changed to 15 minutes.

**Exit** (F3) to save the Template. You are now ready to define an HDB that uses this Template.

**Attention:** After the Template has been initially saved, you are permitted to edit the Template to change its field list. However if the Template is already being used to load data into a HDB, then changing the Template can potentially cause reporting problems in the future. CICS PA supports the alteration of Template fields, but a few simple rules will ensure that HDB processing is not compromised:

1. Do not change the key fields of a Summary Template.
2. Do not change the focus of a Template. For example, if the Template includes Temporary Storage fields only, do not delete those fields and insert File Control fields in their place. You should create another Template with a focus on File Control.

---

## **Defining a Performance HDB**

Defining a Performance HDB allows you to collect (load) and report historical performance data. The definition alone does not cause any action by CICS PA.

Select option 2 **Define** from the HDB menu to define a new HDB. Then when prompted, select option 1 to create a Performance HDB.

New HDB Definition Menu

Select an HDB type then press Enter.

— 1. Performance - CMF List or Summary

— 2. Statistics - CICS Statistics

Figure 297. New HDB Definition Menu

In the following example, we have given the HDB a name of CICSP1H and a description of Summary HDB for CICSP1.

File Systems Options Help

New HDB Definition

Command ==> \_\_\_\_\_

Specify new HDB definition options then press EXIT to save.

Name . . . . . CICSP1H\_ APPLID CICSP1\_ + Image \_\_\_\_\_

Qualifier . . . \_\_\_\_\_ Explorer

Description . . Summary HDB for CICSP1\_\_\_\_\_

HDB Format:

Template . . . PRODSUM\_ +

Selection Criteria:

— Performance

Data Retention Period:

HDB: Years \_\_\_\_ Months 2\_\_ Weeks \_\_\_\_ Days \_\_\_\_ Hours \_\_\_\_

DB2: Years \_\_\_\_ Months \_\_\_\_ Weeks \_\_\_\_ Days \_\_\_\_ Hours \_\_\_\_

Data Set Allocation Settings:

DSN Prefix . . . . . JCH\_\_\_\_\_

Management class . . . \_\_\_\_\_ (Blank for default management class)

Storage class . . . . . \_\_\_\_\_ (Blank for default storage class)

Volume serial . . . . . \_\_\_\_\_ (Blank for system default volume)

Device type . . . . . \_\_\_\_\_ (Generic unit or device address)

Data class . . . . . \_\_\_\_\_ (Blank for default data class)

Space Units . . . . . CYLS\_\_\_\_\_ (TRKS, CYLS)

Primary quantity . . 10\_\_\_\_\_ (In above units)

Secondary quantity . 10\_\_\_\_\_ (In above units)

F1=Help F3=Exit F4=Prompt F7=Backward F8=Forward F10=Actions F12=Cancel

Figure 298. New HDB Definition

The other options are:

### APPLID

APPLID is optional and specifies the CICS system that the HDB applies to. You can use **Prompt** (F4) to select from a list of CICS systems defined in your System Definitions.

Specify APPLID to ensure that only data for this CICS system is loaded into the HDB. At Load time, CICS PA will generate JCL that includes this APPLID in the command deck and DD statements for this system's SMF Files.

### Qualifier

If Qualifier is specified, the value is used as the DB2 schema in place of the Database as specified in DB2 Settings. It is also incorporated into the DB2 table name:

*qualifier.CPA\_hdbname*

Qualifier is mandatory if Explorer is selected, and optional otherwise. If Qualifier and Explorer are both entered then details of this HDB will be included in the manifest for the CICS PA plug-in the next time it is rebuilt for this qualifier.

### Explorer

Select the Explorer option to make this HDB eligible for inclusion in the manifest for the CICS PA plug-in.

### Template

The format and type of the HDB is determined by the Template.

In Figure 298 on page 581 we have specified PRODSUM, the Template created in the previous step. You can use **Prompt** (F4) to select from a list of defined Templates. PRODSUM is a Summary Template and HDB CICSP1H inherits its attributes.

If you have selected the Explorer option, you must choose an internal template that has been predefined for use with the CICS PA plug-in.

### Selection Criteria

HDBs have optional Selection Criteria that allows you to filter the CMF performance class records used to build the HDB. For example, the HDB only includes data for a particular application's transaction ids, such as TRAN=MY\*. Select Performance to specify Selection Criteria.

Templates can also specify Selection Criteria. If the Template and HDB both have active Selection Criteria then both are checked and *both* must match for the record to be processed.

**Template Selection Criteria** typically focuses on the type of data being recorded. For example, if your Template is monitoring File Control activity then its Selection Criteria can specify FCTOTAL>0 to include only transactions that used File Control services.

**HDB Selection Criteria** typically focuses on the application targeted by the HDB. For example, if the HDB is for MY application then its Selection Criteria can specify TRAN = MY\* to include only transactions in MY application.

The resultant HDB will include data for transactions matching MY\* that use File Control services.

### Data Retention Period

These fields separately specify the length of time that HDB data sets and associated DB2 table rows are kept before they expire. Typically:

- Summary HDBs need to keep their container data sets for many years for long-term trend analysis.
- List HDBs used for ad hoc reporting might only need to keep their container data sets for a couple of hours or days.

Specify each retention period as a whole number of years, months, weeks, days, or hours. Only one choice is allowed.

If the HDB container data sets are no longer required after their data has been exported to DB2, you can specify a retention period of 0 in any of the HDB periods to make the HDB data sets expire immediately.

Container data sets and DB2 data are deleted by **HDB Housekeeping** after they have passed their expiry date. If you do not specify a retention period, the corresponding HDB data sets or DB2 data will never expire.

Use **HDB Maintenance** to check container data set status or to alter the HDB or DB2 retention period.

**Data Set Allocation Settings**

Data Set Allocation Settings specify the allocation attributes of the data sets that contain data for this HDB. CICS PA dynamically allocates container data sets at load time.

The format of the data set name is:

*DSN-prefix.HDB-name.Dyyddd.Thhmmss.HDB*

where the DSN prefix is the data set name high level qualifier.

Specify allocation settings that satisfy your installation requirements. The size of container data sets is not critical. Typically you would specify a size that accommodates a single load request. For example, if you load data into the HDB daily, then 10 cylinders might be sufficient. However if CICS PA encounters an out-of-space condition (ABENDx37) during load, then it simply closes the data set and recommences loading in a new data set. You can decide to specify a larger size initially and adjust it later using **HDB Maintenance**.

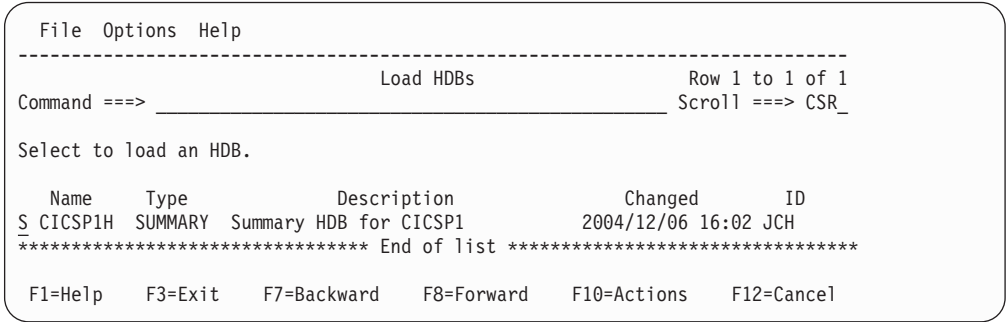
Exit (F3) to save the HDB. You are now ready to use this HDB.

---

**Loading data into a Performance HDB**

After defining the HDB, you can start to collect (load) the historical performance data.

Select option 3 **Load** from the HDB menu to generate JCL to load an HDB.



*Figure 299. Load HDBs*

Select the required HDB from the list to display the Load panel.

File Systems Options Help			
-----			
Load SUMMARY HDB CICSP1H			
Command ==> _____			
Specify HDB load options then press Enter to continue submit.			
System Selection:		_____ Report Interval _____	
APPLID . .	CICSP1H_ +	YYYY/MM/DD	HH:MM:SS.TH
Image . .	_____ +	From 0	09:00:00.00
Group . .	_____ +	To 0	16:30:00.00
DB2 Export Options:		Table Load Options	
_ Load DB2 Table		1 1. Resume 2. Replace	
Include Clock Field Components		Summary Options	
1	1. Time and Count	_ Include Sums of Squares	
	2. Time only		
	3. Count only	Enter "/" to select option	
		/ Edit JCL before submit	
F1=Help F3=Exit F4=Prompt F6=Resize F10=Actions F12=Cancel			

Figure 300. Load Summary HDB

The options are:

### System Selection

System Selection specifies the CICS system(s) whose data is to be loaded into the HDB. It is initialized to the CICS system APPLID that you specified during HDB definition.

In Figure 300, CICS PA generates an APPLID(CICSP1) operand in the command deck and includes DD statements for the SMF Files defined in System Definitions for CICSP1.

### Report Interval

Specify the time range of data to be included in the HDB. You can specify an explicit date, such as 2004-12-05, or a relative date to indicate today (0), yesterday (-1), two days ago (-2), and so on. We have used a relative date of zero (0) to indicate that we are processing today's SMF data, from 9:00am to 4:30pm.

It is recommended that you specify relative dates if you want to use an automated job scheduler to run the load HDB JCL regularly. The JCL can be set up once and run daily without needing to change it.

### DB2 Export Options

To export the data to DB2 directly after loading it into the HDB, select the Load DB2 Table option. For details of the JCL that this option generates, see "Load JCL" on page 658. (The remaining DB2 export options are only relevant if you select the Load DB2 Table option.)

The DB2 table to which you are exporting must already be defined.

To define a DB2 table, see "Creating DDL to define a DB2 table" on page 673.

If you select **2. Replace** for Table Load Options and the HDB load fails, then the result is an empty DB2 table.

When you have specified your Load options, you are prompted to **Press ENTER to proceed with request**. This provides a last opportunity to review and change your load request.

If you selected **Edit JCL before submit** then the Load HDB JCL is displayed in an edit session. Specify this option if you want to save the JCL in an automated job scheduler JCL library.

```

EDIT          JCH.SPFTEMP1.CNTL                      Columns 00001 00072
Command ==>  change '<unresolved>' 'CICSP1.DAILY.CMF(0)'__ Scroll ==> CSR_
***** ***** Top of Data *****
000001 //CICSPA  JOB ,NOTIFY=&SYSUID
000002 //*  CICSPA V5R2 HDB LOAD JCL
000003 //CICSPA  EXEC PGM=CPAMAIN
000004 //STEPLIB DD  DSN=CPA.V5R2M0.SCPALINK,DISP=SHR
000005 //CPAHDBRG DD  DSN=CICSPROD.CICSPA.HDB.REPOSTRY,DISP=SHR
000006 //SYSPRINT DD  SYSOUT=*
000007 //* SMF Input Files
000008 //* SMF Files that follow have unresolved DSNs
000009 //* SMF File for System=CICSP1
000010 //SMFIN901 DD DSN=<unresolved>,DISP=SHR
000011 //* Command Input
000012 //SYSIN DD *
000013 * HDB=CICSP1H
000014 * Description=Summary HDB for CICSP1
000015          CICSPA SMFSTART(0,09:00:00.00),
000016          SMFSTOP(0,16:30:00.00)
000017 * HDB Load for System=CICSP1
000018          CICSPA IN(SMFIN901),
000019          APPLID(CICSP1),
000020          LINECNT(60),
000021          FORMAT(':', '/'),
000022          HDB(OUTPUT(HDBL0001),LOAD(CICSP1H))
000023 /*

```

Figure 301. Edit JCL for Load Summary HDB

The SMF file data set name for system CICSP1 is unresolved. This indicates that the System Definition for CICSP1 does not have SMF files specified. Substitute the required SMF file data set name into the JCL.

The command deck specifies operands to load HDB CICSP1H:

HDB(OUTPUT(HDBL0001),LOAD(CICSP1H))

Enter **SUBmit** in the command line to submit the job to run the load.

Successful completion of the Load request will generate a Recap report like the following.

```

V5R2M0                      CICS Performance Analyzer
                             HDB Load Recap Report

HDBL0001 Printed at 9:28:48 12/07/2004  Data from 09:02:00 12/07/2004 to 16:29:00 12/07/2004  Page  1

LOAD requested for HDB: CICSP1H  Repository DSN: CICSPROD.CICSPA.HDB.REPOSTRY

The following Container(s) were created and loaded:
  Container DSN: JCH.CICSP1H.D03219.T092846.HDB          No of Records: 54,567
  Start Time Stamp: 2004-12-07-09.00.00                End Time Stamp: 2004-12-07-16.00.00

LOAD process complete.

```

Figure 302. HDB Load Recap report

The Recap report provides a list of the Container data sets created by the Load process. In this example, CICS PA created Container data set JCH.CICSP1H.D03219.T092846.HDB. It contains 54,567 records for the period 9:00am to 4:00pm on December 7, 2004.

## HDB Load Audit

HDB load requests create an audit record that includes:

- Date/time range of the data used to create the containers
- Status indicator, OK or Failed

The purpose of the HDB Load Audit is two-fold:

- Verify that all load requests have completed successfully
- Highlight gaps in the data due to Load requests not being run

The Load Audit records can be viewed and maintained from the dialog. For more information, see HDB Load Audit.

---

## Performance HDB Reporting

After you have loaded data into an HDB it is then eligible for reporting.

Select option 4 **Report** from the HDB menu to submit a report request.

```
File Options Help
-----
                                Report HDBs                                Row 1 to 1 of 1
Command ==> _____ Scroll ==> CSR_

Select to run report.

   Name      Type      Description      Changed      ID
S CICSP1H  SUMMARY  Summary HDB for CICSP1      2004/12/07 09:28 JCH
***** End of list *****
F1=Help    F3=Exit    F7=Backward  F8=Forward  F10=Actions  F12=Cancel
```

Figure 303. Performance HDB Reporting

Select the required HDB from the list to display the Run Report panel, as shown in the following example.

```
File Options Help
-----
                                Run SUMMARY HDB Report - CICSP1H
Command ==> _____

Specify run options then press Enter to continue submit.

Report Format:
Report Form . . _____ +
                                ----- Report Interval -----
                                YYYY/MM/DD HH:MM:SS.TH
                                From 2004/12/07 09:00:00.00
                                To   2004/12/07 16:00:00.00

Reporting Options:
Time Interval . . 01:00:00 (hh:mm:ss)
Totals Level . . 8 (blank or 0-8)
Precision . . . 4 (4-6)

Enter "/" to select option
/ Edit JCL before submit

HDB contains data from 2004/12/07 09:00 to 2004/12/07 16:00.

F1=Help    F3=Exit    F4=Prompt    F6=Resize    F10=Actions  F12=Cancel
```

Figure 304. Run Summary HDB Report

The options are:



**Report Form**

Specify a Report Form to tailor the format of the report output. If you do not specify a Form, CICS PA will report all fields in the HDB, in default sequence, up to the maximum 8000 characters.

**Report Interval**

Specify the reporting time range. You can specify an explicit date, such as 2004/12/07, or a relative date to indicate today (0), yesterday (-1), two days ago (-2), and so on. At the bottom of the display is the time range of data contained in this HDB. If you specify a Report Interval, then it must be within this range otherwise the report request will fail.

**Time Interval**

Specify an optional Time Interval when reporting Summary HDBs. The default is the Time Interval used to create the data (as defined in the Template). The example template PRODSUM that was used to create the HDB data specified 15 minutes.

You can specify any interval greater than or equal to the Template Interval. For example, if you are reviewing many days worth of data then you might specify 24:00:00 (24 hours) so that you can view the daily trend. In Figure 304 on page 586, the Interval has been changed to 1 hour.

**Totals Level**

This option applies only to the Summary report. Leave blank if you do not want to include total lines in the report. This generates the NOTOTALS operand.

Specify a number between 1 and 8 to accumulate subtotals for up to 8 sort fields, print the subtotals when the sort field changes, and print a grand total at the end of the report. This generates the TOTALS(n) operand where n is a value between 1 and 8. Default: 8

Specify 0 for no subtotals, but print only the grand total. This generates the TOTALS(0) operand.

**Precision**

Specify the precision for numeric fields: 4, 5, or 6 decimal places to report up to microseconds. This generates the PRECISION(n) operand for n between 4 and 6. Default: 4

When you have specified your Report options, you are prompted to **Press ENTER to proceed with request**. This provides a last opportunity to review and change your report request.

If you selected **Edit JCL before submit** then the Report HDB JCL is displayed in an edit session.

```

EDIT          JCH.SPFTEMP2.CNTL                      Columns 00001 00072
Command ==>                                         Scroll ==> CSR_
***** ***** Top of Data *****
000001 //CICSPA JOB ,NOTIFY=&SYSUID
000002 /*  CICS PA V5R2 HDB REPORT JCL
000003 //CICSPA EXEC PGM=CPAMAIN
000004 //STEPLIB DD DISP=SHR,DSN=CPA.V5R2M0.SCPALINK
000005 //CPAHDBRG DD DISP=SHR,DSN=CICSPROD.CICSPA.HDB.REPOSTRY
000006 //SYSPRINT DD SYSOUT=*
000007 /* Command Input
000008 //SYSIN DD *
000009 * HDB=CICSP1H
000010 * Description=Summary HDB for CICSP1
000011     CICSPA SMFSTART(2004/12/07,09:00:00.00),
000012             SMFSTOP(2004/12/07,16:00:00.00)
000013     CICSPA NOAPPLID,
000014             LINECNT(60),PRECISION(4),
000015             FORMAT(':', '/'),
000016             HDB(OUTPUT(HDBR0001),REPORT(CICSP1H),
000017             INTERVAL(01:00:00),NOTOTALS)
000018 /*
000019 /** HDB Container Data Sets. HDB Report processing does not require
000020 /** these data sets to be included in the JCL as they are dynamically
000021 /** allocated when required. They are included:
000022 /** 1) for your reference
000023 /** 2) to ensure that all required data sets are cataloged
000024 /** 3) to allow DFHSM to recall required data sets up front
000025 //HDB00001 DD DISP=SHR,DSN=JCH.CICSP1H.D03219.T092846.HDB
***** ***** Bottom of Data *****

```

Figure 305. Edit JCL for Summary HDB report

The HDB container data sets are listed at the end of the JCL. They are not required here because the CICS PA batch reporting utility will dynamically allocate the data sets when they are required. CICS PA adds the data sets into the JCL primarily for the purpose of DFHSM recall, if required. It is more efficient to recall data sets in the JCL (where job initiation can recall migrated data sets en masse) rather than one at a time when dynamically allocated.

The command deck specifies operands to report against HDB CICSP1H:  
HDB(OUTPUT(HDBR0001),REPORT(CICSP1H))

Enter **SUBmit** in the command line to submit the job to run the report.

Successful completion of the Report request will generate an HDB Summary report.

V5R2M0				CICS Performance Analyzer											
				<u>Historical Database Summary</u>											
HDBR0001 Printed at 12:03:45 11/12/2013				Data from 09:00:00 12/07/2004 to 16:00:00 12/07/2004										Page 1	
Start	MVS	APPLID	Tran	Tasks	Avg Response Time	Avg Dispatch Time	Avg User CPU Time	Avg Suspend Time	Avg DispWait Time	Avg FC Wait Time	Avg IR Wait Time	Avg SC24UHM	Avg SC31UHM		
2004/12/07 09:00	MVS1	CICSP1	ABRA	1	.2729	.0009	.0006	.2720	.0000	.0000	.2719	0	0		
2004/12/07 09:00	MVS1	CICSP1	ASIX	2	.2184	.0009	.0006	.2175	.0000	.0000	.2175	0	0		
2004/12/07 09:00	MVS1	CICSP1	ATRA	1	1.6067	.0008	.0005	1.6058	.0000	.0000	1.6057	0	0		
2004/12/07 09:00	MVS1	CICSP1	BLIX	1	.0845	.0008	.0005	.0836	.0000	.0000	.0835	0	0		
2004/12/07 09:00	MVS1	CICSP1	CRVI	1	.0004	.0004	.0000	.0000	.0000	.0000	.0000	0	0		
2004/12/07 09:00	MVS1	CICSP1	CSMI	2	.0107	.0006	.0004	.0101	.0000	.0000	.0101	0	0		
2004/12/07 09:00	MVS1	CICSP1	DEBT	1	.0038	.0006	.0004	.0032	.0000	.0000	.0031	0	0		
2004/12/07 09:00	MVS1	CICSP1	OPIC	1	.0236	.0008	.0006	.0227	.0000	.0000	.0227	0	0		
2004/12/07 09:00	MVS1	CICSP1	RESU	1	.0341	.0009	.0006	.0332	.0000	.0000	.0332	0	0		
2004/12/07 09:00	MVS1	CICSP1	RGYM	1	.0056	.0010	.0007	.0046	.0000	.0000	.0045	0	0		
2004/12/07 09:00	MVS1	CICSP1	T050	2	.0296	.0009	.0006	.0288	.0000	.0000	.0286	0	0		
2004/12/07 09:00	MVS1	CICSP1	T096	1	.0398	.0012	.0005	.0386	.0001	.0000	.0385	0	0		
2004/12/07 09:00	MVS1	CICSP1	XYLO	1	.0010	.0009	.0001	.0001	.0000	.0000	.0000	11600	16368		

Figure 306. HDB Summary report

## Tailoring the HDB report format

To change the format of the report or to report additional information from the HDB then you need to use a Report Form. Report Forms are defined outside the HDB menu using option 3 **Report Forms** from the CICS PA Primary Option Menu.

In the following example we have created a Summary Report Form called HDBFORM1.

```
File Edit Confirm Upgrade Profiling Options Help
-----
EDIT SUMMARY Report Form - HDBFORM1                      More: >
Command ===> _____ Scroll ===> CSR_

Description . . . Summary Report Form _____ Version (VRM): 690

Selection Criteria:
_ Performance _____ Page width . . 132_

Field      Sort
/ Name +   K  O Type   Fn  Description
---
TRAN      K  A _____ Transaction identifier
TASKCNT   _____ Total Task count
RESPONSE  _____ AVE Transaction response time
RESPONSE  _____ DEV Transaction response time
DISPATCH _____ AVE Dispatch time
DISPATCH _____ COUNT AVE Dispatch time
CPU        _____ TIME AVE CPU time
SUSPEND   _____ TIME AVE Suspend time
SUSPEND   _____ COUNT AVE Suspend time
DISPWAIT  _____ TIME AVE Redispach wait time
FCWAIT    _____ TIME AVE File I/O wait time
FCWAIT    _____ COUNT AVE File I/O wait time
IRWAIT    _____ TIME AVE MRO link wait time
IRWAIT    _____ COUNT AVE MRO link wait time
EOR _____ ----- End of Report -----
```

Figure 307. Edit Summary Report Form

This Form will change the default HDB report in a number of ways:

1. The Form does not specify a time stamp key. This will cause the report to be summarized by Transaction ID only. The interval records of the HDB is accumulated for each Transaction ID.
2. The count components of the Clock fields have been included. By default the HDB Summary report only displays the average of the time components.
3. Response time is also to be reported as a Standard Deviation. This will provide an indication of how response time varies. The higher the standard deviation the more that response time varies.

When you next report against the HDB, you can use this Report Form. On the Run Report panel, press **Prompt** (F4) to select from a list of Report Forms.

```

File  Options  Help
-----
                        Run SUMMARY HDB Report - CICSP1H
Command ==> _____

Specify Report request options then press Enter to continue submit.

Reporting Options:                ----- Report Interval -----
Report Form  . . HDBFORM1  +      YYYY/MM/DD  HH:MM:SS.TH
                                   From 2004/12/07 09:00:00.00
                                   To   2004/12/07 16:00:00.00

Time Interval  . . 01:00:00 (hh:mm:ss)

Enter "/" to select option
/  Edit JCL before submit

HDB contains data from 2004/12/07 09:00 to 2004/12/07 16:00.

F1=Help    F3=Exit    F4=Prompt    F6=Resize    F10=Actions    F12=Cancel

```

Figure 308. Run Summary HDB report specifying a Report Form

When a Report Form is specified, the command input changes to include the **FIELDS** operand to indicate that customized reporting is required.

```

EDIT          JCH.SPFTEMP2.CNTL                      Columns 00001 00072
Command ==> _____ Scroll ==> CSR_
***** ***** Top of Data *****
000001 //CICSPA JOB ,NOTIFY=&SYSUID
000002 //* CICS PA HDB REPORT JCL
000003 //CICSPA EXEC PGM=CPAMAIN
000004 //STEPLIB DD DISP=SHR,DSN=CPA.V5R2M0.SCPALINK
000005 //CPAHDBRG DD DISP=SHR,DSN=CICSPROD.CICSPA.HDB.REPOSTRY
000006 //SYSPRINT DD SYSOUT=*
000007 //* Command Input
000008 //SYSIN DD *
000009 * HDB=CICSP1H
000010 * Description=Summary HDB for CICSP1
000011     CICSPA SMFSTART(2004/12/07,09:00:00.00),
000012     SMFSTOP(2004/12/07,16:00:00.00)
000013     CICSPA NOAPPLID,
000014     LINECNT(60),PRECISION(4),
000015     FORMAT(':', '/'),
000016     HDB(OUTPUT(HDBR0001),REPORT(CICSP1H),
000017     INTERVAL(01:00:00),NOTOTALS)
000018     FIELDS(TRAN,
000019     TASKCNT,
000020     RESPONSE(AVE),
000021     RESPONSE(DEV),
000022     DISPATCH(TIME(AVE)),
000023     DISPATCH(COUNT(AVE)),
000024     CPU(TIME(AVE)),
000025     SUSPEND(TIME(AVE)),
000026     SUSPEND(COUNT(AVE)),
000027     DISPWAIT(TIME(AVE)),
000028     FCWAIT(TIME(AVE)),
000029     FCWAIT(COUNT(AVE)),
000030     IRWAIT(TIME(AVE)),
000031     IRWAIT(COUNT(AVE)))
000032 /*
000033 //HDB00001 DD DISP=SHR,DSN=JCH.CICSP1H.D03219.T092846.HDB
***** ***** Bottom of Data *****

```

Figure 309. Edit JCL for Summary HDB report specifying a Report Form (**FIELDS** operand)

Enter **SUBmit** in the command line to submit the job to run the report.

Successful completion of the Report request will generate an HDB Summary report.

V5R2M0

CICS Performance Analyzer  
Historical Database Summary

HDBR0001 Printed at 12:03:45 11/12/2013      Data from 09:00:00 12/07/2004 to 16:00:00 12/07/2004      Page 1

Tran	Tasks	Avg Response Time	S Dev Response Time	Avg Dispatch Time	Avg Dispatch Count	Avg User CPU Time	Avg Suspend Time	Avg Suspend Count	Avg DispWait Time	Avg FC Wait Time	Avg FC Wait Count	Avg IR Wait Time	Avg IR Wait Count
ABRA	7854	.2729	.0147	.0009	3	.0006	.2720	3	.0000	.0000	0	.2719	2
ASIX	9327	.2184	.2949	.0009	2	.0006	.2175	2	.0000	.0000	0	.2175	1
ATRA	21024	1.6067	.4389	.0008	2	.0005	1.6058	2	.0000	.0000	0	1.6057	1
BLIX	7328	.0845	.0043	.0008	2	.0005	.0836	2	.0000	.0000	0	.0835	1
CRVI	9203	.0004	.0001	.0004	1	.0000	.0000	1	.0000	.0000	0	.0000	0
CSMI	2372	.0107	.0092	.0006	3	.0004	.0101	3	.0000	.0000	0	.0101	2
DEBT	13293	.0038	.0011	.0006	2	.0004	.0032	2	.0000	.0000	0	.0031	1
OPIC	1275	.0236	.0076	.0008	2	.0006	.0227	2	.0000	.0000	0	.0227	1
RESU	5674	.0341	.0132	.0009	2	.0006	.0332	2	.0000	.0000	0	.0332	1
RGYM	7485	.0056	.0009	.0010	2	.0007	.0046	2	.0000	.0000	0	.0045	1
T050	18290	.0296	.0121	.0009	3	.0006	.0288	3	.0000	.0000	0	.0286	2
T096	123	.0398	.0098	.0012	2	.0005	.0386	2	.0001	.0000	0	.0385	1
XYLO	13921	.0010	.0002	.0009	1	.0001	.0001	1	.0000	.0000	0	.0000	0

Figure 310. HDB Summary report formatted using a Report Form

The Report Form (and resultant FIELDS operand) changes the report to show a summary by Transaction ID over the entire reporting interval. Compare this report output to Figure 306 on page 588.

## Exporting Performance HDB data to DB2

After you have loaded data into an HDB it is then eligible for export to DB2.

**Summary HDB** data is the most commonly used for performance reporting. It is already summarized by time.

**List HDB** data is typically used to drill down to isolate performance problems or for ad-hoc reporting. Take care when exporting List HDBs into DB2. The volume of data can be high, resulting in a table that is too large to manage.

**Statistics HDB** data is used for both short-term problem analysis and long-term trend analysis. Like List HDBs, take care when exporting Statistics HDBs into DB2. The volume of data can be high, resulting in a table that is too large to manage.

Select option 5 **Export** from the HDB menu to export HDB data into DB2.

File Options Help

Export HDBs
Row 1 to 1 of 1

Command ==>
Scroll ==> CSR\_

Select to export HDB to DB2.

Name	Type	Description	Changed	ID
S	CICSP1H	SUMMARY	Summary HDB for CICSP1	2004/12/07 15:25 JCH
***** End of list *****				

F1=Help    F3=Exit    F7=Backward    F8=Forward    F10=Actions    F12=Cancel

Figure 311. Exporting Performance HDBs

Select the required HDB to display its list of container data sets.

File Options Help		
-----		
Export SUMMARY HDB - CICSP1H		Row 1 to 1 of 1
Command ==>		Scroll ==> CSR_
Export HDB data set.		
Name . . : CICSP1H		
Data Set Name	Start	Volume
S JCH.CICSP1H.D03219.T092846.HDB	2004/12/07 09:00:00	USER01
***** End of list *****		
F1=Help	F3=Exit	F7=Backward F8=Forward F10=Actions F12=Cancel

Figure 312. Export HDB

CICS PA can only export one container data set at a time. Select the data set that contains the data in the required time range to be exported into DB2.

File Options Help		
-----		
Export HDB Data Set		
Command ==>		
HDB Name . . . : CICSP1H		
Data Set Name . : JCH.CICSP1H.D03219.T092846.HDB		
Select option		
<u>1</u> 1. Create DDL to define table	2. Load data into table	
Create Options		
- Create Database	Load Options	
- Create Storage Group	<u>1</u> 1. Resume	
	2. Replace	
DB2 Settings:		
DB2 Subsystem ID . . .	DB2P	
DSNTIAD Plan Name . .	DSNTIA91	
DB2 Load Library . . .	'DB2.V910.SDSNLOAD'	
DB2 Exit Library . . .	'DB2.V910.SDSNEXIT'	
DB2 RUNLIB Library . .	'DB2.V910.RUNLIB.LOAD'	
Database . . . . .	CICSPA	Storage Group . . SYSDEFLT
VCAT Catalog name . .	USER	Volume . . . . . DA0001
Allocation: Primary	20	Secondary . . . . 20
Include Clock Field Components		
<u>1</u> 1. Time and Count	Summary Options	
2. Time only	/ Include Sums of Squares	
3. Count only		
F1=Help	F3=Exit	F7=Backward F8=Forward F10=Actions F12=Cancel

Figure 313. Export HDB Data Set

Exporting HDB data into DB2 is a two-step process, controlled by the **Select Option**.

1. Create the DDL to define the DB2 table. See "Creating DDL to define a DB2 table."
2. Load the data. "Loading data into the DB2 table" on page 595

You can then use your favorite DB2 query tool to analyze the data. Analyzing HDB DB2 Export data

## Creating DDL to define a DB2 table

CICS PA uses DSNTIAD, the sample Dynamic SQL program to run the DDL that defines the DB2 table.

CICS PA builds the JCL that contains the CREATE TABLE statement required to define the DB2 table for this HDB data set. The HDB name is used as the table name, however you can change this by editing the JCL.

The options are:

#### Create Options

Select **Create Database** if you want the CREATE TABLE statement to be preceded by a CREATE DATABASE statement to define the DB2 database. You might need to ask your DB2 administrator to do this for you if you do not have sufficient authority.

Select **Create Storage Group** if you want the CREATE TABLE statement to be preceded by a CREATE STOGROUP statement to define the DB2 Storage Group.

#### DB2 Settings

Specify the required DB2 settings for your environment. CICS PA only provides a basic facility to load data into DB2. It does not provide any management or reporting capabilities when the data is in DB2.

If you omit any DB2 settings, CICS PA will insert parameter markers such as <setting> in the JCL stream.

#### Include Clock Field Components

CMF performance class Clock fields accumulate data for both their count and time components in the HDB. You have a choice as to which components to load into DB2. For example, selecting **Time only** will load the time component but not the count component. Time only is sufficient for most analysis requirements.

#### Summary Options

Specify **Include Sums of Squares** to load sum-of-square values into the DB2 Table. CICS PA always loads the Total. This allows you to calculate averages. Sums of Squares are required to calculate standard deviation and peak percentiles. Totals (and not Sums of Squares) is sufficient for most analysis requirements.

**Note:** The storage space for indexes is set to a default arbitrary value. For information on how to calculate the space required for an index, see the *DB2 UDB for z/OS Administration Guide*.

Review the JCL then submit to create the DB2 table:

```
EDIT          JCH.SPFTMP1.CNTL                      Columns 00001 00072
Command ==> _____ Scroll ==> CSR_
***** ***** Top of Data *****
000001 //CICSPA  JOB ,NOTIFY=&SYSUID
000002 //*  CICS PA V5R2 HDB - DDL TO DEFINE DB2 TABLE
000003 //RUNTIAD EXEC PGM=IKJEFT01,DYNAMNBR=20
000004 //STEPLIB  DD DISP=SHR,DSN=DB2.V910.SDSNLOAD
000005 //          DD DISP=SHR,DSN=DB2.V910.SDSNEXIT
000006 //SYSTSPRT DD SYSOUT=*
000007 //SYSTSIN  DD *
000008 DSN SYSTEM(DB2P)
000009 RUN PROGRAM(DSNTIAD) -
000010      LIB('DB2.V910.RUNLIB.LOAD') PLAN(DSNTIA91)
000011 /*
000012 //SYSPRINT DD SYSOUT=*
000013 //SYSUDUMP DD SYSOUT=*
000014 //SYSIN    DD *
000015      CREATE STOGROUP SYSDEFLT VOLUMES(DA0001) VCAT USER;
000016
```

```

000017 CREATE DATABASE CICSIPA;
000018
000019 COMMIT;
000020
000021 CREATE TABLESPACE CICSPIH
000022     IN CICSIPA
000023     LOCKSIZE ANY
000024     BUFFERPOOL BP0
000025     CLOSE NO
000026     SEGSIZE 32
000027     USING STOGROUP SYSDEFLT
000028     PRIQTY 20
000029     SECQTY 20
000030     ERASE NO ;
000031
000032 CREATE TABLE CICSIPA.CICSPIH (
000033     START_DATE DATE,
000034     START_TIME TIME,
000035     MVSID CHAR(4),
000036     APPLID CHAR(8),
000037     TRAN CHAR(4),
000038     TASKCNT FLOAT,
000039     RESPONSE_TIME FLOAT,
000040     RESPONSE_TIME_SSQ FLOAT,
000041     DISPATCH_COUNT FLOAT,
000042     DISPATCH_COUNT_SSQ FLOAT,
000043     DISPATCH_TIME FLOAT,
000044     DISPATCH_TIME_SSQ FLOAT,
000045     CPU_COUNT FLOAT,
000046     CPU_COUNT_SSQ FLOAT,
000047     CPU_TIME FLOAT,
000048     CPU_TIME_SSQ FLOAT,
000049     SUSPEND_COUNT FLOAT,
000050     SUSPEND_COUNT_SSQ FLOAT,
000051     SUSPEND_TIME FLOAT,
000052     SUSPEND_TIME_SSQ FLOAT,
000053     DISPWAIT_COUNT FLOAT,
000054     DISPWAIT_COUNT_SSQ FLOAT,
000055     DISPWAIT_TIME FLOAT,
000056     DISPWAIT_TIME_SSQ FLOAT,
000057     FCWAIT_COUNT FLOAT,
000058     FCWAIT_COUNT_SSQ FLOAT,
000059     FCWAIT_TIME FLOAT,
000060     FCWAIT_TIME_SSQ FLOAT,
000061     IRWAIT_COUNT FLOAT,
000062     IRWAIT_COUNT_SSQ FLOAT,
000063     IRWAIT_TIME FLOAT,
000064     IRWAIT_TIME_SSQ FLOAT,
000065     SC24UHMW_COUNT FLOAT,
000066     SC24UHMW_COUNT_SSQ FLOAT,
000067     SC31UHMW_COUNT FLOAT,
000068     SC31UHMW_COUNT_SSQ FLOAT,
000069     TSWAIT_COUNT FLOAT,
000070     TSWAIT_COUNT_SSQ FLOAT,
000071     TSWAIT_TIME FLOAT,
000072     TSWAIT_TIME_SSQ FLOAT
000073 ) IN CICSIPA.CICSPIH;
000074
000075 CREATE TYPE 2 UNIQUE INDEX CICSIPA.CICSPIH_IX
000076     ON CICSIPA.CICSPIH
000077     (
000078     START_DATE,
000079     START_TIME,
000080     MVSID,
000081     APPLID,
000082     TRAN
000083     )

```



```

000084      USING STOGROUP   SYSDEFLT
000085          PRIQTY       10
000086          SECQTY       10
000087          ERASE         NO
000088          CLUSTER
000089          BUFFERPOOL     BP0
000090          CLOSE          NO
000091 ;
***** ***** Bottom of Data *****

```

*Figure 314. Edit JCL for HDB Export: Define DB2 table*

Review the job output in SDSF to verify that the table was created successfully.

## Loading data into the DB2 table

CICS PA uses the DB2 Load Utility to load data into the DB2 table.

CICS PA builds the JCL that contains the DB2 Load Utility statement required to load the HDB data set into the DB2 table that was defined in the previous step.

The options are:

### Load Options

Select **Resume** if you want the DB2 Load Utility to resume loading data into the table. Typically, this is appropriate for Summary HDBs.

Select **Replace** if you want the DB2 Load Utility to replace data already loaded in the table. Typically, this is appropriate for List HDBs.

Review the JCL then submit to load the DB2 table:

```

EDIT          JCH.SPFTEMP1.CNTL                      Columns 00001 00072
Command ==>                                         Scroll ==> CSR_
***** ***** Top of Data *****
000001 //CICSPA JOB ,NOTIFY=&SYSUID
000002 //* CICS PA V5R2 HDB - LOAD DATA INTO DB2 TABLE
000003 //DSNUPROC EXEC PGM=DSNUTILB,REGION=0M,
000004 //          PARM='DB2P'
000005 //STEPLIB DD DISP=SHR,DSN=DB2.V910.SDSNLOAD
000006 //          DD DISP=SHR,DSN=DB2.V910.SDSNEXIT
000007 //SYSPRINT DD SYSOUT=*
000008 //UTPRINT DD SYSOUT=*
000009 //SYSUDUMP DD SYSOUT=*
000010 //SYSREC DD DSN=JCH.CICSP1H.D03219.T092846.HDB,
000011 //          DISP=SHR
000012 //SYSUT1 DD UNIT=SYSDA,SPACE=(4000,(20,20),,ROUND)
000013 //SORTOUT DD UNIT=SYSDA,SPACE=(4000,(20,20),,ROUND)
000014 //SYSIN DD *
000015 LOAD DATA RESUME YES
000016 INTO TABLE CICSPA.CICSP1H (
000017     START_DATE          POSITION(1)      DATE EXTERNAL(10),
000018     START_TIME           POSITION(12)     TIME EXTERNAL(8),
000019     MVSID                POSITION(20)     CHAR(4),
000020     APPLID               POSITION(24)     CHAR(8),
000021     TRAN                 POSITION(32)     CHAR(4),
000022     TASKCNT              POSITION(36)     FLOAT,
000023     RESPONSE_TIME        POSITION(44)     FLOAT,
000024     RESPONSE_TIME_SSQ    POSITION(52)     FLOAT,
000025     DISPATCH_COUNT       POSITION(60)     FLOAT,
000026     DISPATCH_COUNT_SSQ   POSITION(68)     FLOAT,
000027     DISPATCH_TIME        POSITION(76)     FLOAT,
000028     DISPATCH_TIME_SSQ    POSITION(84)     FLOAT,
000029     CPU_COUNT            POSITION(92)     FLOAT,
000030     CPU_COUNT_SSQ        POSITION(100)    FLOAT,
000031     CPU_TIME             POSITION(108)    FLOAT,
000032     CPU_TIME_SSQ         POSITION(116)    FLOAT,
000033     SUSPEND_COUNT        POSITION(124)    FLOAT,
000034     SUSPEND_COUNT_SSQ    POSITION(132)    FLOAT,
000035     SUSPEND_TIME         POSITION(140)    FLOAT,
000036     SUSPEND_TIME_SSQ     POSITION(148)    FLOAT,
000037     DISPWAIT_COUNT       POSITION(156)    FLOAT,
000038     DISPWAIT_COUNT_SSQ   POSITION(164)    FLOAT,
000039     DISPWAIT_TIME        POSITION(172)    FLOAT,
000040     DISPWAIT_TIME_SSQ    POSITION(180)    FLOAT,
000041     FCWAIT_COUNT         POSITION(188)    FLOAT,
000042     FCWAIT_COUNT_SSQ     POSITION(196)    FLOAT,
000043     FCWAIT_TIME          POSITION(204)    FLOAT,
000044     FCWAIT_TIME_SSQ      POSITION(212)    FLOAT,
000045     IRWAIT_COUNT         POSITION(220)    FLOAT,
000046     IRWAIT_COUNT_SSQ     POSITION(228)    FLOAT,
000047     IRWAIT_TIME          POSITION(236)    FLOAT,
000048     IRWAIT_TIME_SSQ      POSITION(244)    FLOAT,
000049     SC24UHMW_COUNT       POSITION(252)    FLOAT,
000050     SC24UHMW_COUNT_SSQ   POSITION(260)    FLOAT,
000051     SC31UHMW_COUNT       POSITION(268)    FLOAT,
000052     SC31UHMW_COUNT_SSQ   POSITION(276)    FLOAT,
000053     TSWAIT_COUNT         POSITION(284)    FLOAT,
000054     TSWAIT_COUNT_SSQ     POSITION(292)    FLOAT,
000055     TSWAIT_TIME          POSITION(300)    FLOAT,
000056     TSWAIT_TIME_SSQ      POSITION(308)    FLOAT
000057 )
***** ***** Bottom of Data *****

```

Figure 315. Edit JCL for HDB Export: Load DB2 table

Review the job output in SDSF to verify that the table was created successfully.

## Extracting Performance HDB data to CSV

After you have loaded data into an HDB it is then eligible for extract to CSV data sets.

Select option 6 **Extract** from the HDB menu to request an HDB extract..

```
File Options Help
-----
                                Extract HDBs                                Row 1 to 1 of 1
Command ==> _____ Scroll ==> CSR_

Select to run report.

  Name      Type      Description      Changed      ID
  S CICSP1H  SUMMARY  Summary HDB for CICSP1      2004/12/07 09:28 JCH
  ***** End of list *****

F1=Help  F3=Exit  F7=Backward  F8=Forward  F10=Actions  F12=Cancel
```

Figure 316. HDB Extract

Select the required HDB from the list to display the Run Extract panel.

```
                                Run SUMMARY HDB Extract - CICSP1H
Command ==> _____

Specify Extract request options then press Enter to continue submit.

----- Report Interval ----- HDB contains data
      YYYY/MM/DD HH:MM:SS.TH in the range:
From 2004/12/15 _____ 2004/11/17 05:17 Extract Recap:
To 2004/12/16 _____ 2005/01/17 21:31 DDname . . . HXTS0001

Output Data Set:
Data Set Name . . HDB.EXTRACT
Disposition . . . 1 1. OLD 2. MOD (If cataloged)

Extract Format:
Form . . . . . _____ + Enter "/" to select option
Delimiter . . . . ; _____ / Include Field Labels
                                   _ Numeric Fields in Float format

Processing Options:
Time Interval . . 01:00:00 (hh:mm:ss) / Edit JCL before submit
Enter "/" to select option

F1=Help  F3=Exit  F4=Prompt  F6=Resize  F12=Cancel
```

Figure 317. Run Summary HDB Extract

The options are:

### Report Interval

Specify the reporting time range. You can specify an explicit date, such as 2004/12/15, or a relative date to indicate today (0), yesterday (-1), two days ago (-2), and so on. Adjacent is the time range of data contained in this HDB. If you specify a Report Interval, then it must be within this range otherwise the extract request will fail.

### Extract Recap DDname

The DDname for the Recap report which prints at the end of extract processing to provide processing statistics. The DDname is mandatory.

CICS PA assigns a default DDname **HXTS0001**.

This option generates the OUTPUT(ddname) operand.

### Output Data Set

The name of the data set where the extract records are written. When specifying the data set name, standard TSO conventions apply.

If CICS PA is to create the data set at run time, the default allocation attributes specified on the Reporting Allocation Settings panel are used in generating the JCL. If the data set is already cataloged, then CICS PA will use DISP=OLD or DISP=MOD according to your request to overwrite or append to the existing data set.

CICS PA generates the DDNAME(ddname) operand and assigns a default DDname **HDBX0001**.

### Disposition

This option applies if the extract data set you specified is already cataloged.

Select option **1 - OLD** to overwrite the data set contents with the new extract data.

Select option **2 - MOD** to append the new extract data.

### Report Form

Specify a Report Form to tailor the format of the extract records. If you do not specify a Form, CICS PA will write all the fields in the HDB in order.

### Delimiter

Specify the field delimiter to be used to separate each data field in the extract data set. The default is a semicolon and generates the DELIMIT(';') operand.

### Include Field Labels

Select this option to indicate that the first record to be written to the extract data set is to be a field labels record. This is the default and generates the LABELS operand.

Leave blank if you do not want a field labels record written to the extract data set. This generates the NOLABELS operand.

### Numeric Fields in Float format

Select this option if you want CICS PA to write numeric fields to the extract data set in S390 FLOAT format. This generates the FLOAT operand. Specify FLOAT format if you plan to import the extract into a DB2 table. When the DB2 Load Utility is used, it will interpret all numerical fields reliably and consistently in FLOAT format.

If you do not select this option, the numeric fields are written in a mixture of integer, real and exponential using character digits. This is the default and is suitable when importing the extract data into a PC spreadsheet tool. This generates the NOFLOAT operand.

### Time Interval

Specify an optional Time Interval when extracting Summary HDBs. The default is the Time Interval used to create the data (as defined in the Template). The example template PRODSUM that was used to create the HDB data specified 15 minutes.

You can specify any interval greater than or equal to the Template Interval. For example, if you are reviewing many days worth of data then you might specify 24:00:00 (24 hours) so that you can view the daily trend. In Figure 317 on page 597, the Interval has been changed to 1 hour.

When you have specified your Extract options, you are prompted to **Press ENTER to proceed with request**. This provides a last opportunity to review and change your request details.

If you selected **Edit JCL before submit** then the Extract HDB JCL is displayed in an edit session.

```

EDIT          userid.SPFTEMP2.CNTL                      Columns 00001 00072
Command ==> _____ Scroll ==> CSR_
***** ***** Top of Data *****
000001 //CICSPA JOB ,NOTIFY=&SYSUID
000002 /* CICS PA V5R2 HDB EXTRACT JCL
000003 //CICSPA EXEC PGM=CPAMAIN
000004 //STEPLIB DD DISP=SHR,DSN=CPA.V5R2M0.SCPALINK
000005 //CPAHDBRG DD DISP=SHR,DSN=CICSPROD.CICSPA.HDB.REPOSTRY
000006 //SYSPRINT DD SYSOUT=*
000007 //HDBX0001 DD DSN=userid.HDB.EXTRACT,
000008 //          DISP=(OLD)
000009 /* Command Input
000010 //SYSIN DD *
000011 * HDB=CICSP1H
000012 * Description=Summary HDB for CICSP1H
000013          CICSPA SMFSTART(2004/12/15,00:00:00.00),
000014          SMFSTOP(2004/12/16,00:00:00.00)
000015          CICSPA NOAPPLID,
000016          LINECNT(60),
000017          FORMAT(':', '/'),
000018          PRECISION(4),
000019          HDB(DDNAME(HDBX0001),EXTRACT(CICSP1H),
000020          OUTPUT(HXTS0001),LABELS,DELIMIT(';'),NOFLOAT,
000021          INTERVAL(01:00:00))
000022 /*
000023 /* HDB Container Data Sets. HDB Report processing does not require
000024 /* these data sets to be included in the JCL as they are dynamically
000025 /* allocated when required. They are included:
000026 /* 1) for your reference
000027 /* 2) to ensure that all required data sets are cataloged
000028 /* 3) to allow DFHSM to recall required data sets up front
000029 //HDB00001 DD DISP=SHR,DSN=userid.CICSP1H.D03219.T092846.HDB
***** ***** Bottom of Data *****

```

Figure 318. Edit JCL for Summary HDB Extract

The HDB container data sets are listed at the end of the JCL. They are not required here because the CICS PA batch utility will dynamically allocate the data sets when they are required. CICS PA adds the data sets into the JCL primarily for the purpose of DFHSM recall, if required. It is more efficient to recall data sets in the JCL (where job initiation can recall migrated data sets en masse) rather than one at a time when dynamically allocated.

The command deck specifies operands to extract records from HDB CICSP1H, write them to the extract data set with DDname HDBX0001, and write the Recap report output to the DDname HXTS0001:

```
HDB(DDNAME(HDBX0001),EXTRACT(CICSP1H),OUTPUT(HXTS0001),...)
```

Enter **SUBmit** in the command line to submit the job to run the report.

Successful completion of the Extract request will generate an HDB Summary Extract Recap report.

Figure 319. HDB Summary Extract Recap report

The extract data set contains records like those in the following example.

```
Start Date;Start Time;MVS;APPLID;Tran;#Tasks;Response Time Avg;Dispatch Time Avg;User CPU Time Avg;Suspend Time
2004/12/15 15:00:00;MV2C ;IYK3ZAC1;CSHQ ; 1;55155.62; .2103; .0212;55155.41; .0331; .0001;
2004/12/15 15:00:00;MV2C ;IYK3ZAC1;CSNC ; 1;55159.06; .3379; .0041;55158.72; .0356; .0001;
2004/12/15 15:00:00;MV2C ;IYK3ZAC1;CSNE ; 1;55153.97; .0881; .0060;55153.88; .0042; .0001;
2004/12/15 18:00:00;MV2C ;IYK2ZFFV1;CEX2 ; 1;50237.83; .5030; .2717;50237.33; .1800; .0001;
2004/12/15 18:00:00;MV2C ;IYK2ZFFV1;CSHQ ; 1;50234.95; .3105; .0190;50234.64; .5761; .0001;
2004/12/15 18:00:00;MV2C ;IYK2ZFFV1;CSNC ; 1;50393.54; .4259; .0058;50393.12; .0026; .0001;
2004/12/15 18:00:00;MV2C ;IYK2ZFFV1;CSNE ; 1;50389.87; .1321; .0177;50389.74; .0074; .0001;
2004/12/15 18:00:00;MV2C ;IYK2ZFFV2;CEX2 ; 1;50241.24; .2630; .1828;50240.98; .2255; .0001;
```

Figure 320. HDB Summary Extract record format

## Tailoring the HDB extract format

The format of the extract records can be changed by specifying a Report Form. The process for HDB Extract is the same as applying a Report Form to an HDB Report. For more information, see “Tailoring the HDB report format” on page 589.

## Analyzing the extract data

After HDB data has been loaded into an extract data set in CSV format, you can use your favorite PC spreadsheet tool, such as Lotus® Symphony® Spreadsheets or Microsoft Excel, to analyze the data. See Analyzing CSV extract data for examples of how to use such tools to analyze the data.

## Maintaining Performance HDBs

Select option 7 **Maintenance** from the HDB menu to maintain your HDB environment.

FileOptionsHelp

HDB Maintenance

Row 1 to 1 of 1

Command ==> Scroll ==> CSR\_

Select to maintain HDB definition and its data sets.

/	Name	Type	Description	Changed	ID
S	CICSP1H	SUMMARY	Summary HDB for CICSP1	2004/12/07 15:25	JCH

\*\*\*\*\* End of list \*\*\*\*\*

F1=Help

F3=Exit

F7=Backward

F8=Forward

F10=Actions

F12=Cancel

Figure 321. HDB Maintenance

**Line Actions:** The available line actions are:

- /** Display the selection list of line actions
- E** Edit (maintain) the HDB. See “Maintaining HDB definitions” on page 601.
- S** Select the HDB (same as Edit).
- D** Delete the HDB. The HDB Definition is deleted immediately. The HDB container data sets is deleted when Housekeeping is next run.
- A** Display the HDB Load audit trail. See HDB Load Audit.

## Maintaining HDB definitions

Enter line action **S** to select an HDB from the list to edit.

File Systems Options Help

Maintain HDB

More: >

Command ==>

Review and update HDB definition options then press EXIT to save.

Name . . . . . : CICSP1H Type SUMMARY APPLID CICSP1\_\_ + Image \_\_\_\_\_

Description . . Summary HDB for CICSP1\_\_\_\_\_

Specify View . . 1 1. Options 2. Data Sets

HDB Format: Selection Criteria:

Template . . . PRODSUM\_ + \_ Performance

Data Retention Period:

HDB: Years \_\_\_\_ Months 10\_ Weeks \_\_\_\_ Days \_\_\_\_ Hours \_\_\_\_

DB2: Years \_\_\_\_ Months \_\_\_\_ Weeks \_\_\_\_ Days \_\_\_\_ Hours \_\_\_\_

Data Set Allocation Settings:

DSN Prefix . . . . . USER\_\_\_\_\_

Management class . . . \_\_\_\_\_ (Blank for default management class)

Storage class . . . . . \_\_\_\_\_ (Blank for default storage class)

Volume serial . . . . . \_\_\_\_\_ (Blank for system default volume)

Device type . . . . . \_\_\_\_\_ (Generic unit or device address)

Data class . . . . . \_\_\_\_\_ (Blank for default data class)

Space Units . . . . . CYLS\_\_\_\_\_ (TRKS, CYLS)

Primary quantity . . 20\_\_\_\_\_ (In above units)

Secondary quantity 20\_\_\_\_\_ (In above units)

F1=Help F3=Exit F4=Prompt F7=Backward F8=Forward F10=Actions

F11=Right F12=Cancel

Figure 322. Maintain HDB definition





---

## Chapter 21. Guided Tour: Statistics HDB

Every aspect of the CICS PA Historical Database is controlled using the ISPF dialog.

This section takes you through the process of defining and using a Statistics HDB.

**Setup.** Initially, your HDB environment requires a minimal one-time setup. HDB definitions are saved in the repository, a VSAM KSDS. CICS PA automatically defines the repository for you when you first try to use it.

Then the required steps are:

**1. Definition.**

Unlike Performance HDBs, Statistics HDBs do not require a Template, so you can immediately define the HDB and its options, such as the characteristics of the HDB data sets and the retention period of the data.

**2. Load.**

Loading data into the HDB is performed by the standard CICS PA batch reporting utility. The command that requests the utility to load an HDB is:

```
HDB(LOAD(...
```

CICS PA reads the CICS statistics and server statistics data and builds the HDB data sets. Because the HDB Load process is part of the normal batch reporting process, you can run CICS PA reports and load HDBs together with a single pass of the SMF data.

**3. Report.**

Unlike Performance HDBs that are reported in batch, Statistics HDBs are reported in the dialog.

You can also use Statistics HDBs to generate batch Statistics HDB Alert reports. These reports show any statistics that meet the conditions you have specified in a Statistics Alert definition. For details, see Statistics alert reporting.

**4. Export.**

Export allows you to load HDB data into a DB2 table. CICS PA automates this process with two simple steps:

- a. First define the DB2 table to house the data. CICS PA generates JCL to do this for you by creating the necessary DDL to define the table.
- b. Then load the data into the table. CICS PA generates JCL to do this for you by creating the necessary DB2 Load Utility statements to load the data.

**5. Extract.**

Extract allows you to extract HDB data into a CSV (comma separated variable) file, suitable for importing into a PC-based spreadsheet application.

**6. Maintain.**

HDB maintenance allows you to change your HDB definition and manage the HDB container data sets.

**7. Housekeeping.**

HDB housekeeping should be run periodically to clean up your HDB environment. Housekeeping performs these tasks:

- a. Deletes HDB container data sets that have expired or have delete pending.

- b. Deletes expired DB2 table rows.
- c. Removes definitions from the Repository that are no longer required.

## Historical Database Menu

Option 5 **Historical Database** from the CICS PA Primary Option Menu takes you to the Historical Database Menu. The HDB menu is presented in the order that reflects the seven steps to using Statistics HDB.

```

File  Options  Help
-----
                                Historical Database Menu
Option ==> _____

1  Templates          Design HDB Templates
2  Define              Define a new HDB
3  Load              Load data into the HDBs
4  Report             Submit HDB report requests
5  Export             Export HDB data sets to DB2
6  Extract            Extract HDB data sets to CSV
7  Maintenance        Maintain HDB definitions and data sets
8  Housekeeping        Perform HDB housekeeping

Repository . . . . 'CICSPROD.CICSPA.HDB.REPOSTRY' _____ +

CICS versions (VRM):
Transaction Server . . . 680
Transaction Gateway . . . 900

F1=Help    F3=Exit    F4=Prompt    F10=Actions    F12=Cancel

```

Figure 323. Historical Database (HDB) Menu

Specify the repository data set name. Remember that you might want to share this repository with other users. This will ensure that HDB data can be generated once and made available to everyone.

## Defining a Statistics HDB

Defining a Statistics HDB allows you to collect (load) and report historical CICS statistics and server statistics data and CICS Transaction Gateway statistics data. The definition alone does not cause any action by CICS PA.

Select option 2 **Define** from the HDB menu to define a new HDB. Then when prompted, select option 2 to create a Statistics HDB.

```

                                New HDB Definition Menu

Select an HDB type then press Enter.
- 1. Performance - CMF List or Summary
- 2. Statistics - CICS Statistics

```

Figure 324. New HDB Definition Menu

In the following example, we have given the HDB a name of CICSP1S and a description of Statistics HDB for CICSP1.

File Systems Options Help	
-----	
New HDB Definition	
Command ==> _____	
Specify new HDB definition options then press EXIT to save.	
Name . . . . .	CICSP1S APPLID CICSP1 + Image MVS1
Qualifier . . .	Explorer
Description . .	Statistics HDB for CICSP1
Statistics Reports:	
_ Select to specify Statistics Reports	Alert . . _____ +
Interval Type . . / EOD / INT / USS / REQ / RRT	
Data Retention Period:	
HDB: Years 10_ Months _____ Weeks _____ Days _____ Hours _____	
DB2: Years _____ Months _____ Weeks _____ Days _____ Hours _____	
Data Set Allocation Settings:	
DSN Prefix . . . . .	_____
Management class . . . . .	_____ (Blank for default management class)
Storage class . . . . .	_____ (Blank for default storage class)
Volume serial . . . . .	_____ (Blank for system default volume)
Device type . . . . .	_____ (Generic unit or device address)
Data class . . . . .	_____ (Blank for default data class)
Space Units . . . . .	CYLS (TRKS, CYLS)
Primary quantity . .	10 (In above units)
Secondary quantity	10 (In above units)
F1=Help F3=Exit F4=Prompt F7=Backward F8=Forward F10=Actions F12=Cancel	

Figure 325. New HDB Definition

The other options are:

### APPLID

APPLID is optional and specifies the CICS system that the HDB applies to. You can use **Prompt** (F4) to select from a list of CICS systems defined in your System Definitions.

Specify APPLID to ensure that only data for this CICS system is loaded into the HDB. At Load time, CICS PA will generate JCL that includes this APPLID in the command deck and DD statements for this system's SMF Files.

### Qualifier

If Qualifier is specified, the value is used as the DB2 schema in place of the Database as specified in DB2 Settings. It is also incorporated into the DB2 table name:

*qualifier.CPA\_std*

Qualifier is mandatory if Explorer is selected, and optional otherwise. If Qualifier and Explorer are both entered then details of this HDB will be included in the manifest for the CICS PA plug-in the next time it is rebuilt for this qualifier.

### Explorer

Select the Explorer option to make this HDB eligible for inclusion in the manifest for the CICS PA plug-in.

### Statistics Reports

Enter / next to **Select to specify Statistics Reports** to activate the types of statistics (reports) that you want to collect.

In the following example, we have activated collection for three CICS Dispatcher reports and all four CICS Storage reports.

File Edit Options View Help			
Statistics Reports			Line 1 of 30
Command ==>			Scroll ==> CSR_
** Report **		Collect	DB2
+ ---	CICS Performance Analyzer - CICS TS	No	No
- ---	Regions	Yes	No
---	Transaction Manager	No	No
- ---	CICS Dispatcher	Yes	No
A_	Dispatcher Overview	Yes	No
A_	Dispatcher TCB Modes	Yes	No
A_	Dispatcher TCB Pools	Yes	No
---	MVS TCB Overview	No	No
---	MVS TCBs	No	No
- A_	CICS Storage	Yes	No
---	Storage Overview	Yes	No
---	DSAs	Yes	No
---	Domain Subpools	Yes	No
---	Task Subpools	Yes	No
+ ---	CICS Dumps	No	No
---	Enqueue Pools	No	No
---	BUNDLE Resources	No	No
+ ---	Connectivity	No	No
+ ---	Files and Databases	No	No
+ ---	Logging	No	No
+ ---	Queues	No	No
+ ---	Transactions	No	No
+ ---	Programs	No	No
+ ---	Event Processing	No	No
+ ---	CICS Web Support	No	No
+ ---	Java and Enterprise Java	No	No
+ ---	Miscellaneous	No	No
+ ---	CICS Server	No	No
+ ---	CICS Performance Analyzer - CICS TG	No	No
+ ---	CICS Transaction Gateway	No	No
** End of Reports **			

Figure 326. Activate statistics reports for HDB data collection

When you load a statistics HDB, you can also choose to export the data to DB2. The DB2 Load column identifies the statistics reports that are exported.

Exit (F3) to save the collection and DB2 load settings.

**Alert** If you used line action AO against any report, or you used line action A (activate collection) against either of the Alert reports, you must specify an Alert Definition. Press Prompt (F4) in the Alert field to select from a list of Alert Definitions.

#### Interval Type

Select the types of statistics you are interested in:

**EOD** End-of-day

**REQ** Requested

**USS** Unsolicited

**INT** Interval

**RRT** Requested reset

#### Data Retention Period

These fields separately specify the length of time that HDB data sets and associated DB2 table rows are kept before they expire. Typically:

- Summary HDBs need to keep their container data sets for many years for long-term trend analysis.
- List HDBs used for ad hoc reporting might only need to keep their container data sets for a couple of hours or days.

Specify each retention period as a whole number of years, months, weeks, days, or hours. Only one choice is allowed.

If the HDB container data sets are no longer required after their data has been exported to DB2, you can specify a retention period of 0 in any of the HDB periods to make the HDB data sets expire immediately.

Container data sets and DB2 data are deleted by **HDB Housekeeping** after they have passed their expiry date. If you do not specify a retention period, the corresponding HDB data sets or DB2 data will never expire.

Use **HDB Maintenance** to check container data set status or to alter the HDB or DB2 retention period.

### Data Set Allocation Settings

Data Set Allocation Settings specify the allocation attributes of the data sets that contain data for this HDB. CICS PA dynamically allocates container data sets at load time.

The format of the data set name is

*DSN-prefix.HDB-name.Dyyddd.Thmmss.HDB*

where the DSN prefix is the data set name high level qualifier.

Specify allocation settings that satisfy your installation requirements. The size of container data sets is not critical. Typically you would specify a size that accommodates a single load request. For example, if you load data into the HDB daily, then 10 cylinders might be sufficient. However if CICS PA encounters an out-of-space condition (ABENDx37) during load, then it simply closes the data set and recommences loading in a new data set. You can decide to specify a larger size initially and adjust it later using **HDB Maintenance**.

Exit (F3) to save the HDB. You are now ready to use this HDB.

## Loading data into a Statistics HDB

After defining the HDB, you can start to collect (load) the historical statistics data.

Select option 3 **Load** from the HDB menu to generate JCL to load an HDB.

File Options Help
Load HDBs
Row 1 to 1 of 1

Command ==> \_\_\_\_\_
Scroll ==> CSR\_

Select to load an HDB.

Name	Type	Description	Changed	ID
S CICSP1S	STATS	Statistics HDB for CICSP1	2004/12/06 16:02	JCH
***** End of list *****				

F1=Help
F3=Exit
F7=Backward
F8=Forward
F10=Actions
F12=Cancel

Figure 327. Load HDBs

Select the required HDB from the list to display the Load panel.

File Systems Options Help			
-----			
Load STATS HDB - CICSP1S			
Command ==> _____			
Specify HDB load options then press Enter to continue submit.			
System Selection:		Report Interval	
APPLID . .	CICSP1S_ +	YYYY/MM/DD	HH:MM:SS.TH
Image . .	_____ +	From 0	09:00:00.00
Group . .	_____ +	To 0	16:30:00.00
DB2 Export Options:		Table Load Options	
_ Load DB2 Table		1 1. Resume 2. Replace	
Include Clock Field Components		Summary Options	
1 1. Time and Count		_ Include Sums of Squares	
2. Time only			
3. Count only		Enter "/" to select option	
		/ Edit JCL before submit	
F1=Help F3=Exit F4=Prompt F6=Resize F10=Actions F12=Cancel			

Figure 328. Load Statistics HDB

The options are:

### System Selection

System Selection specifies the CICS system(s) whose data is to be loaded into the HDB. It is initialized to the CICS system APPLID that you specified during HDB definition.

In this example, CICS PA generates an APPLID(CICSP1) operand in the command deck and includes DD statements for the SMF Files defined in System Definitions for CICSP1.

### Report Interval

Specify the time range of data to be included in the HDB. You can specify an explicit date, such as 2004-12-05, or a relative date to indicate today (0), yesterday (-1), two days ago (-2), and so on. We have used a relative date of zero (0) to indicate that we are processing today's SMF data, from 9:00am to 4:30pm.

Note that EOD statistics are often cut at midnight, so would not be included in this HDB.

It is recommended that you specify relative dates if you want to use an automated job scheduler to run the load HDB JCL regularly. The JCL can be set up once and run daily without needing to change it.

### DB2 Export Options

To export the data to DB2 directly after loading it into the HDB, select the Load DB2 Table option. For details of the JCL that this option generates, see "Load JCL" on page 658. (The remaining DB2 export options are only relevant if you select the Load DB2 Table option.)

The DB2 table to which you are exporting must already be defined.

To define a DB2 table, see "Creating DDL to define a DB2 table" on page 673.

If you select **2. Replace** for Table Load Options and the HDB load fails, then the result is an empty DB2 table.

When you have specified your Load options, you are prompted to **Press ENTER to proceed with request**. This provides a last opportunity to review and change your load request.

If you selected **Edit JCL before submit** then the Load HDB JCL is displayed in an edit session. Specify this option if you want to save the JCL in an automated job scheduler JCL library.

```

EDIT          JCH.SPFTEMP1.CNTL                      Columns 00001 00072
Command ==> change '<unresolved>' 'CICSP1.DAILY.CMF(0) '__ Scroll ==> CSR_
***** ***** Top of Data *****
000001 //CICSPA JOB ,NOTIFY=&SYSUID
000002 //* CICS PA V5R2 HDB LOAD JCL
000003 //CICSPA EXEC PGM=CPAMAIN
000004 //STEPLIB DD DSN=CPA.V5R2M0.SCPALINK,DISP=SHR
000005 //CPAHDBRG DD DSN=CICSPROD.CICSPA.HDB.REPOSTRY,DISP=SHR
000006 //SYSPRINT DD SYSOUT=*
000007 //* SMF Input Files
000008 //* SMF Files that follow have unresolved DSNs
000009 //* SMF File for System=CICSP1
000010 //SMFIN901 DD DSN=<unresolved>,DISP=SHR
000011 //* Command Input
000012 //SYSIN DD *
000013 * HDB=CICSP1S
000014 * Description=Summary HDB for CICSP1
000015         CICSPA SMFSTART(0,09:00:00.00),
000016         SMFSTOP(0,16:30:00.00)
000017 * HDB Load for System=CICSP1
000018         CICSPA IN(SMFIN901),
000019         APPLID(CICSP1),
000020         LINECNT(60),
000021         FORMAT(':', '/'),
000022         HDB(OUTPUT(HDBL0001),LOAD(CICSP1S))
000023 /*

```

Figure 329. Edit JCL for Load Summary HDB

The SMF file data set name for system CICSP1 might be unresolved. This indicates that the System Definition for CICSP1 does not have SMF files specified. Substitute the required SMF file data set name into the JCL.

The command deck specifies operands to load HDB CICSP1S:  
HDB(OUTPUT(HDBL0001),LOAD(CICSP1S))

Enter **SUBmit** in the command line to submit the job to run the load.

Successful completion of the Load request will generate a Recap report like the following example.

```

V5R2M0                      CICS Performance Analyzer
                             HDB Load Recap Report

HDBL0001 Printed at 9:28:48 15/03/2005  Data from 09:00:00 15/03/2005 to 16:30:00 15/03/2005          Page 1

LOAD requested for HDB: CICSP1S  Repository DSN: CICSPROD.CICSPA.XYZ.REPOSTRY

The following Container(s) were created and loaded:
Container DSN: CICSPA.CICSP1S.D03219.T092846.HDB          No of Records: 54,567
Start Time Stamp: 2005-03-15-09.00.00          End Time Stamp: 2005-03-15-16.00.00

LOAD process complete.

```

Figure 330. HDB Load Recap report

The Recap report provides a list of the Container data sets created by the Load process. In this example, CICS PA created Container data set CICSPA.CICSP1S.D03219.T092846.HDB. It contains 54,567 records for the period 9:00 am to 4:00 pm on March 15, 2005.

## HDB Load Audit

HDB load requests create an audit record that includes:

- Date/time range of the data used to create the containers
- Status indicator, OK or Failed

The purpose of the HDB Load Audit is two-fold:

- Verify that all load requests have completed successfully
- Highlight gaps in the data due to Load requests not being run

The audit records can be viewed and maintained from the dialog. For more information, see HDB Load Audit.

---

## Statistics HDB Reporting

After you have loaded data into an HDB it is then eligible for reporting.

Select option 4 **Report** from the HDB menu to display the list of Statistics HDBs.

```
File Options Help
-----
Report HDBs                               Row 1 to 1 of 1
Command ===>                               Scroll ===> CSR_

Select to run report.

  Name      Type      Description      Changed      ID
  S CICSP1S  STATS    Statistics HDB for CICSP1    2005/03/16 12:23 JCH
  ***** End of list *****
```

Figure 331. Select a Statistics HDB for reporting

Enter line action **S** (or any non-blank character) to select a Statistics HDB for reporting. A pop-up menu prompts you to select either online reporting or batch Alert reporting. For information on batch Alert reporting, see Run Statistics HDB Alerts report. If you select online reporting, the Run Report panel is displayed, as shown in the following example:

```
File Options Help
-----
Run STATS HDB Report - CICSP1S             Row 1 to 3 of 3
Command ===>                               Scroll ===> PAGE

Specify run options then press Enter.

Select data sets by:      Report Interval      HDB contains data
  2 1. Report Interval      YYYY/MM/DD HH:MM:SS.TH      in the range:
  - 2. Data Set Name      From -1_____ 10:00:00.00 2005/03/15 07:00:00
                          To 0_____ 10:00:00.00 2005/03/16 11:00:00

Filter Criteria NO      Type . . / EOD / INT / USS / REQ / RRT
APPLID . . . . _____
Image . . . . _____

Data Set Name      ----- Start ----- Volume
S CICSPA.CICSP1.D05074.T102306.HDB      2005/03/15 07:00:00 USER05
S CICSPA.CICSP1.D05074.T152311.HDB      2005/03/15 14:00:00 USER05
S CICSPA.CICSP1.D05075.T042316.HDB      2005/03/16 02:00:00 USER05
***** Bottom of data *****
```

Figure 332. Run Statistics HDB Report



The list of container data sets is displayed. You can select report data by either:

1. Specifying a Report Interval, in which case, CICS PA will automatically select the required container data sets.
2. Explicitly selecting the required container data sets as shown in Figure 332 on page 610.

The list of statistics intervals is then displayed.

```

File Edit Filter Options Help
-----
REPORT                               Statistics Intervals                               Row 1 from 12
Command ==> _____ Scroll ==> CSR_

Select the required CICS Statistics interval.

/  System  Image  VRM  Type  --- Collection Time ---  Reset  Duration
-  CICSPI  MVS1   640  TS  USS  2005/03/15 07:00:00 Tue  06:00:00
-  CICSPI  MVS1   640  TS  USS  2005/03/15 08:00:00 Tue  07:00:00
S  CICSPI  MVS1   640  TS  EOD  2005/03/15 09:00:00 Tue  08:00:00
P  CICSPI  MVS1   640  TS  EOD  2005/03/15 10:00:00 Tue  09:00:00
-  CICSPI  MVS1   640  TS  INT  2005/03/15 11:00:00 Tue  10:00:00  01:00:00
-  CICSPI  MVS1   640  TS  USS  2005/03/15 12:00:00 Tue  11:00:00
-  CICSPI  MVS1   640  TS  USS  2005/03/15 13:00:00 Tue  12:00:00
-  CICSPI  MVS1   640  TS  USS  2005/03/15 14:00:00 Tue  13:00:00
-  CICSPI  MVS1   640  TS  INT  2005/03/15 15:00:00 Tue  14:00:00  01:00:00
-  CICSPI  MVS1   640  TS  INT  2005/03/16 07:00:00 Wed  06:00:00  01:00:00
-  CICSPI  MVS1   640  TS  USS  2005/03/16 08:00:00 Wed  07:00:00
-  CICSPI  MVS1   640  TS  INT  2005/03/16 09:00:00 Wed  08:00:00  01:00:00
***** Bottom of data *****

```

Figure 333. Select a statistics interval

Select one or more intervals to view the reports.

For Statistics HDBs, only reports for which data is collected (at Load time) can be viewed. That is, if Size is greater than 0.

```

File Edit Options View Help
-----
REPORT                               Statistics Reports                               Line 1 of 25
Command ==>                          Scroll ==> CSR_

System: CICSP1/MVS1      Type: EOD  Interval: 2005/03/15 09:00:00 Tuesday

--  -  --  ** Reports **  Size
--  -  --  Regions  381
--  -  --  Transaction Manager  0
--  -  --  CICS Dispatcher  23
--  -  --  Dispatcher Overview  1
--  -  --  Dispatcher TCB Modes  18
--  -  --  Dispatcher TCB Pools  4
--  -  --  MVS TCB Overview  0
--  -  --  MVS TCBs  0
--  -  --  CICS Storage  358
--  -  --  Storage Overview  1
--  -  --  S_ DSAs  8
--  -  --  Domain Subpools  345
--  -  --  Task Subpools  4
--  +  --  CICS Dumps  0
--  +  --  Enqueue Pools  0
--  +  --  BUNDLE Resources  0
--  +  --  Connectivity  0
--  +  --  Files and Databases  0
--  +  --  Logging  0
--  +  --  Queues  0
--  +  --  Transactions  0
--  +  --  Programs  0
--  +  --  CICS Web Support  0
--  +  --  Java and Enterprise Java  0
--  +  --  Miscellaneous  0
--  +  --  CICS Server  0
--  -  --  ** End of Reports **

```

Figure 334. Select a statistics report: DSAs

In this example, we selected to view the DSAs report.

Initially, all the information contained in the DSAs statistics record is reported.

You can change this using a Form which is discussed in the following sections. See Forms.

```

File Edit Form Options Help
-----
REPORT    DSAs                               Line 00000001 Col 002 008  >
Command ==>                          Scroll ==> CSR_

System: IYCWLS2/MV2C      Type: EOD  Interval: 2004/12/16 11:23:58 Thursday

DSA      DSA      DSA      Current      Peak      Current
Name     Location Access     Index     Size     Size     Cushion
-----
CDSA     BELOW     CICS      1         512K     512K     64K
UDSA     BELOW     USER      2         1024K    1024K    64K
SDSA     BELOW     USER      3         256K     256K     64K
RDSA     BELOW     READONLY  4         512K     512K     64K
ECDSA    ABOVE     CICS      5         16384K   16384K   128K
EUDSA    ABOVE     USER      6         46080K   46080K   0K
ESDSA    ABOVE     USER      7         1024K    1024K    128K
ERDSA    ABOVE     READONLY  8         20480K   20480K   256K

```

Figure 335. Statistics report: DSAs

Scroll **Right** (F11) and **Left** (F10) to view all the columns in the report.

Statistics reporting has several features that help you tailor the display to meet your needs. The following sections introduce these features.

## Sorting

Use the Tab key to position the cursor on the point-and-shoot separator line that underlines the name of the column you want to sort. Press Enter to sort the report by that column in ascending sequence. Press Enter again to sort in descending sequence.

The following example is sorted in descending Peak DSA Size sequence.

File Edit Form Options Help

-----

REPORT DSAs Line 00000001 Col 002 008 >  
Command ==> Scroll ==> CSR\_

System: IYCWLS2/MV2C Type: EOD Interval: 2004/12/16 11:23:58 Thursday

DSA Name	DSA Location	Access	DSA Index	Current DSA Size	Peak DSA Size	Current Cushion Size
-----	-----	-----	-----	-----	-----	-----
EUDSA	ABOVE	USER	6	46080K	46080K	0K
ERDSA	ABOVE	READONLY	8	20480K	20480K	256K
ECDSA	ABOVE	CICS	5	16384K	16384K	128K
UDSA	BELOW	USER	2	1024K	1024K	64K
ESDSA	ABOVE	USER	7	1024K	1024K	128K
CDSA	BELOW	CICS	1	512K	512K	64K
RDSA	BELOW	READONLY	4	512K	512K	64K
SDSA	BELOW	USER	3	256K	256K	64K

Figure 336. Statistics report: sort on Peak DSA Size (descending)

## Forms

Statistics Report Forms allow you to tailor the report so that only information you want to see is displayed.

Use the **FORM** primary command, **Form** in the action bar, or press **F6** to display the Form for the current report.

```

File Edit Options Help
-----
FORM      DSAs                                     Line 1 of 28
Command ==> _____ Scroll ==> CSR_

/ Heading                                     Usage Column Max Report
- DSA Name                                FIX_          8      8
- Peak DSA Size                          FIX_          10     20
- DSA Location                          OMIT_          0
- Access                                OMIT_          0
- DSA Index                            OMIT_          0
- Current DSA Size                      OMIT_          0
- Current Cushion Size                  OMIT_          0
- GETMAIN Requests                      _____    10     32
- FREEMAIN Requests                    _____    10     44
- Current Extents                      OMIT_          0
- Extents Added                        _____    10     56
- Extents Released                     _____    10     68
- ADD SUBPOOL Requests                 _____    10     80
- DELETE SUBPOOL Requests              _____    10     92
- GETMAINS No Storage Returned          _____    10    104
- GETMAINS Suspended                   _____    10    116
- Current Suspended                    _____    10    128
- Peak Requests Suspended               _____    10    140
- Requests Purged Waiting Storage       _____    10    152
- Cushion Releases                     _____    10    164
- Short-on-Storage Count                _____    16    182
- Short-on-Storage Total Time           _____    19    203
- Current Subpools                     _____    10    215
- Free Storage                         _____    10    227
- Peak Free Storage                     _____    10    239
- Lowest Free Storage                   _____    10    251
- Largest Free Area                     _____    10    263
- Storage Violations                   _____    10    275
***** End of Form *****

```

Figure 337. Statistics Report Form

In this example, one additional field is fixed (Peak DSA Size), several fields have been omitted, and two (Extents) fields moved to the top.

Press Exit (F3) to save and activate the Form.

The report is modified to display only the columns requested in the Form.

```

File Edit Form Options Help
-----
REPORT    DSAs                                     Line 00000001 Col 003 007 >
Command ==> _____ Scroll ==> CSR_

System: IYCWLS2/MV2C      Type: EOD  Interval: 2004/12/16 11:23:58 Thursday

DSA      Peak      GETMAIN      FREEMAIN      Extents      Extents
Name     DSA       Requests     Requests     Added       Released
-----
CDSA     512K        1062        1002         2           0
UDSA     1024K       207         207          1           0
SDSA     256K         1           0            1           0
RDSA     512K         19          2            2           0
ECDSA    16384K     33880       19766        16           0
EUDSA    46080K      752         748          45           0
ESDSA    1024K        6           6            1           0
ERDSA    20480K      412          7           13           0

```

Figure 338. Statistics report: FORM ON

You can enter the **FORM OFF** command to view the default report format, then enter **FORM ON** to reapply the Form.

## Hyperlink

Hyperlinks allow you to link to other statistics reports related to the current report. Certain fields in some statistics reports are hyperlink fields. Hyperlink fields are point-and-shoot fields.

**Note:** Ensure that your ISPF Settings distinguish point-and-shoot fields (see CUA(!) attribute settings) and that you can Tab to them (see Point-and-Shoot fields).

In our DSAs report in Figure 338 on page 614, the DSA Name field is a hyperlink field. Tab to ESDSA and press Enter to hyperlink to the report of Domain Subpools belonging to ESDSA.

```

File Edit Form Options Help
-----
REPORT      Domain Subpools                      Line 00000001 Col 002 008  >
Command ==> _____ Scroll ==> CSR_

System: IYCWLMS2/MV2C      Type: EOD  Interval: 2004/12/16 11:23:58 Thursday

Subpool      DSA      Element      Fixed      Element      Element
Name          Name      Type      Length      Chaining      Boundary      Location      Acces
-----
IE_BUFF      ESDSA      VARIABLE      0      NO      16      ABOVE      USER
IIBUFFER      ESDSA      VARIABLE      0      NO      16      ABOVE      USER
LDEPGM      ESDSA      VARIABLE      0      NO      16      ABOVE      USER
LDERES      ESDSA      VARIABLE      0      NO      16      ABOVE      USER
SJSJPTE      ESDSA      FIXED      408      NO      8      ABOVE      USER
SJSJSTK      ESDSA      FIXED      8      NO      8      ABOVE      USER
SJSJTCB      ESDSA      FIXED      1336      NO      8      ABOVE      USER
SJSJVMS      ESDSA      FIXED      2200      NO      8      ABOVE      USER
SJUSERKY      ESDSA      VARIABLE      0      NO      16      ABOVE      USER
SMSHRU31      ESDSA      VARIABLE      0      YES      16      ABOVE      USER
WEBINB      ESDSA      FIXED      32768      YES      8      ABOVE      USER

```

Figure 339. Statistics report: Hyperlink

The hyperlink report is a subset of the complete report, filtered by the hyperlink field value, which in this example is ESDSA.

Exit (F3) to return to the previous report.

## Statistics Field Help

Extensive help is available for each column in the report. Press **Help** (F1) when the cursor is positioned in the body of the report to display help for the report fields.

Field Descriptions for Statistics Report

Category : Regions

Macro . . : DFHMSDS

Report . : DSAs

DSECT . . : SMSBODY

-----

DSA Name

CICS field name: SMSDSANAME

DB2 column name: DSA\_NAME

The name of the DSA that this record represents.  
Values can be: CDSA, UDSA, SDSA, RDSA, ECDSA, EUDSA, ESDSA, or ERDSA.

Reset characteristic: Not reset

-----

DSA Location

CICS field name: SMSLOCN

DB2 column name: LOCATION

The location of the DSA, either ABOVE or BELOW the 16MB line.

-----

Access

CICS field name: SMSACCESS

DB2 column name: ACCESS

The type of access of the DSA, either:

CICS        Access is CICS key

USER        Access is USER key

READONLY    Read-only protection

If storage protection is not active, all storage areas will revert to CICS except those in the ERDSA.

Reset characteristic: Not reset

-----

Figure 340. Statistics report: Field Help

Field Help is also available from the Extended Help (F1 from the command line). Tab to **Field Descriptions** and press F1.

Note that the DB2 column names are also shown. These are used by CICS PA when exporting data to DB2.

## Print

All statistics reports can be printed to a DASD data set or SYSOUT file. The **P** line action is available from both the list of Statistics Intervals panel (where the entire interval can be printed) or the list of Statistics Reports panel (where individual categories and reports can be printed). In this example, the report is printed to a data set, and then browsed.

```

                                Print Statistics Report
Command ==> _____

Specify Statistics Report print options.

Report Destination:
 1 1. Data Set  2. SYSOUT

Output Data Set:
Data Set Name . . 'JCH.CICSP1.STATS.REPORT'_____
Disposition . . . 1 1. OLD  2. MOD  (If cataloged)

Enter "/" to select option
/ Browse output data set

Report Output:
SYSOUT Class . . A      Print Lines per Page . . 60_ (0-255)

```

Figure 341. Statistics report: Print

Browsing the data set provides an alternative way of viewing the same report, as shown in the following example.

```

BROWSE    JCH.CICSP1.STATS.REPORT                      Line 00000000 Col 001 080
Command ==>                                           Scroll ==> PAGE
***** Top of Data *****
                                           V5R2M0
                                CICS Performance Analyzer
                                CICS TS Statistics - DSAs

System: IYCWLMS2/MV2C      Type: EOD  Interval: 2004/12/16 11:23:58 Thursday

DSA      DSA      DSA      Current      Peak      Current
Name     Location Access      Index      DSA      DSA      Cushion
          Size     Size     Size     Size     Size     Size
-----
CDSA     BELOW    CICS      1         512K     512K     64K
UDSA     BELOW    CICS      2         256K     256K     64K
SDSA     BELOW    CICS      3         256K     256K     64K
RDSA     BELOW    READONLY   4         512K     512K     64K
ECDSA    ABOVE     CICS      5         5120K    5120K    128K
EUDSA    ABOVE     CICS      6         1024K    1024K     0K
ESDSA    ABOVE     CICS      7           0K       0K       0K
ERDSA    ABOVE    READONLY   8        18432K   18432K   256K
***** Bottom of Data *****

```

Figure 342. Statistics report: Browse print data set

When a report is printed, it can be viewed as an output file attached to your current TSO session, using SDSF for example. Note that when you print a report, the active Form is honored.

## Exporting Statistics HDB data to DB2

Select option 5 **Export** from the HDB menu to export HDB data into DB2.

Unlike Performance HDBs, Statistics HDBs do not have a common record format. The records for each statistics report (or type, as identified by its CICS domain and statistics ID) have a different record format. Therefore one DB2 table must be defined for each type of statistics record to be exported.

```

File Options Help
-----
Export HDBs                                     Row 1 to 1 of 1
Command ==> _____ Scroll ==> CSR_

Select to export HDB to DB2.

  Name      Type      Description      Changed      ID
S CICSP1S  STATS      Statistics HDB for CICSP1      2005/03/16 12:23 JCH
***** End of list *****

F1=Help      F3=Exit      F5=Rfind      F7=Backward  F8=Forward  F10=Actions
F12=Cancel

```

Figure 343. Exporting Statistics HDBs

In this example, we have selected our statistics HDB for exporting to DB2.

Select the required HDB to display its list of container data sets.

```

File Options Help
-----
Export STATS HDB - CICSP1S                       Row 1 to 2 of 2
Command ==> _____ Scroll ==> PAGE

Select to export HDB data sets to DB2.

HDB Name . . : CICSP1S   Type . . : STATS

  Data Set Name      ----- Start ----- Volume
S CICSPA.CICSP1.D05074.T102306.HDB      2005/03/15 07:00:00  USER05
S CICSPA.CICSP1.D05074.T152311.HDB      2005/03/15 14:00:00  USER05
S CICSPA.CICSP1.D05075.T042316.HDB      2005/03/16 02:00:00  USER05
***** Bottom of data *****

```

Figure 344. Export Statistics HDB

The list of statistics reports is displayed.



```

File Edit Options View Help
-----
EXPORT                               Statistics Reports                               Line 1 of 25
Command ==> _____ Scroll ==> CSR_

Select reports to export to DB2.

--      ** Reports **
-  --   Regions                               Collect  DB2
                                         Yes      Load
                                         Yes      No
-  --   Transaction Manager                   Yes      No
-  --   CICS Dispatcher                       Yes      No
      --   Dispatcher Overview                 Yes      No
      --   Dispatcher TCB Modes                 Yes      No
      --   Dispatcher TCB Pools                 Yes      No
      --   MVS TCB Overview                     Yes      No
      --   MVS TCBs                             Yes      No
-  --   CICS Storage                         Yes      No
      --   Storage Overview                     Yes      No
      S  --   DSAs                             Yes      No
      --   Domain Subpools                     Yes      No
      --   Task Subpools                       Yes      No
+  --   CICS Dumps                           Yes      No
      --   Enqueue Pools                       Yes      No
      --   BUNDLE Resources                     No       No
+  --   Connectivity                         No       No
+  --   Files and Databases                   No       No
+  --   Logging                             No       No
+  --   Queues                             No       No
+  --   Transactions                         No       No
+  --   Programs                             No       No
+  --   CICS Web Support                     No       No
+  --   Java and Enterprise Java              No       No
+  --   Miscellaneous                       No       No
+  --   CICS Server                         No       No
+  --   CICS Transaction Gateway              No       No
      --   ** End of Reports **

```

Figure 345. Select Statistics reports for export to DB2

Enter line action **S** to select the reports that you want to export to DB2.

Only the reports that you select are exported to DB2. The DB2 Load column is ignored: this column is only used when loading the HDB with the Load DB2 Table option selected.

In the following example, we have selected the DSAs report.

### Step 1. Create the DB2 table

Exporting HDB data into DB2 is a two-step process. The first step creates the DB2 table.

File Options Help	
-----	
Export HDB Data Set	
Command ==> _____	
Select option	
1	1. Create DDL to define table
2	2. Load data into table
Create Options	
1	1. Resume
2	2. Replace
DB2 Settings:	
DB2 Subsystem ID . . .	DB2P
DSNTIAD Plan Name . . .	DSNTIA91
DB2 Load Library . . .	'DB2.V910.SDSNLOAD'
DB2 Exit Library . . .	'DB2.V910.SDSNEXIT'
DB2 RUNLIB Library . . .	'DB2.V910.RUNLIB.LOAD'
Database . . . . .	CICSPA
VCAT Catalog name . .	USER
Allocation: Primary	20
Secondary . . . . .	20

Figure 346. Export Step 1. Create DB2 table

Select option 1 **Create DDL to define table.**

The create table JCL is generated and displayed in an edit session for review and submission.

EDIT JCH.SPFTEMP3.CNTL		Columns 00001 00072
Command ==>	SUB	Scroll ==> PAGE
***** Top of Data *****		
000001	//JCH#CPA JOB ,NOTIFY=&SYSUID	
000002	//* CICSPA V5R2 HDB - DDL TO DEFINE DB2 TABLE	
000003	//RUNTIAD EXEC PGM=IKJEFT01,DYNAMNBR=20	
000004	//SYSTSPRT DD SYSOUT=*	
000005	//SYSTSIN DD *	
000006	DSN SYSTEM(DB2P)	
000007	RUN PROGRAM(DSNTIAD) LIB('DB2.V910.RUNLIB.LOAD') PLAN(DSNTIA91)	
000008	/*	
000009	//SYSPRINT DD SYSOUT=*	
000010	//SYSUDUMP DD SYSOUT=*	
000011	//SYSIN DD *	
000012	CREATE TABLESPACE #180203	
000013	IN CICSPA	
000014	LOCKSIZE ANY	
000015	BUFFERPOOL BP0	
000016	CLOSE NO	
000017	SEGSIZE 32	
000018	USING STOGROUP PROD	
000019	PRIQTY 20	
000020	SECQTY 20	
000021	ERASE NO;	
000022		
000023	CREATE TABLE CICSPA.HST014B (	
000024	START_DATE	DATE,
000025	START_TIME	TIME,
000026	APPLID	CHAR(8),
000027	MVSID	CHAR(4),
000028	DSA_NAME	CHAR(8),
000029	DSA_LOCATION	CHAR(8),
000030	ACCESS	CHAR(8),
000031	DSA_INDEX	CHAR,

Figure 347. Edit JCL to create DB2 table

Note the DB2 table name "CICSPA.HST014B". This name reflects the statistics ID of the selected report, in this case 014 for DSAs. The B suffix is appended to distinguish this report from the Storage Overview report that shares the same 014 ID.

CICS PA exports CICS Transaction Gateway statistics to DB2 table names ending with the SQL identifier "HSTGnnnn" (note the letter G). This distinguishes them from the "HSTnnnn" DB2 table names for CICS Transaction Server statistics.

You can change this name to something more meaningful to you, for example CICSPA.CICSP1\_DSAS.

Submit the JCL to create the table.

## Step 2. Load the DB2 table

The second step loads the DB2 table.

File Options Help

-----

Export HDB Data Set

Command ==> \_\_\_\_\_

Select option

2 1. Create DDL to define table      2. Load data into table

Create Options      Load Options

\_ Create Database      1 1. Resume

\_ Create Storage Group      \_ 2. Replace

DB2 Settings:

DB2 Subsystem ID . . . DB2P

DSNTIAD Plan Name . . DSNTIA91

DB2 Load Library . . . 'DB2.V910.SDSNLOAD' \_\_\_\_\_

DB2 Exit Library . . . 'DB2.V910.SDSNEXIT' \_\_\_\_\_

DB2 RUNLIB Library . . 'DB2.V910.RUNLIB.LOAD' \_\_\_\_\_

Database . . . . . CICSPA      Storage Group . . PROD \_\_\_\_\_

VCAT Catalog name . . USER \_\_\_\_\_

Allocation: Primary    20 \_\_\_\_\_ Secondary . . . . 20 \_\_\_\_\_

Figure 348. Export Step 2. Load DB2 table

Select option 2 **Load data into table**.

The load table JCL is generated and displayed in an edit session for review and submission.

```

EDIT          JCH.SPFTEMP3.CNTL                      Columns 00001 00072
Command ==> SUB                                     Scroll ==> PAGE
***** ***** Top of Data *****
000001 //JCH#CPA JOB ,NOTIFY=&SYSUID
000002 //* CICSPA V5R1 HDB - LOAD DATA INTO DB2 TABLE
000003 //DSNUPROC EXEC PGM=DSNUTILB,REGION=0M,
000004 //          PARM='DB2P'
000005 //STEPLIB DD DISP=SHR,DSN=DB2.V910.SDSNLOAD
000006 //          DD DISP=SHR,DSN=DB2.V910.SDSNEXIT
000007 //SYSPRINT DD SYSOUT=*
000008 //UTPRINT DD SYSOUT=*
000009 //SYSUDUMP DD SYSOUT=*
000010 //SYSREC DD DSN=SKU.#180203.D05049.T182306.HDB,
000011 //          DISP=SHR
000012 //          DD DSN=SKU.#180203.D05049.T182311.HDB,
000013 //          DISP=SHR
000014 //          DD DSN=SKU.#180203.D05049.T182316.HDB,
000015 //          DISP=SHR
000016 //SYSUT1 DD UNIT=SYSDA,SPACE=(4000,(20,20),,ROUND)
000017 //SORTOUT DD UNIT=SYSDA,SPACE=(4000,(20,20),,ROUND)
000018 //SYSIN DD *
000019 LOAD DATA RESUME YES
000020 INTO TABLE CICSPA.HST014B WHEN (70) = '014B' (
000021     START_DATE          POSITION(1)      DATE EXTERNAL(10),
000022     START_TIME           POSITION(12)     TIME EXTERNAL(8),
000023     APPLID                POSITION(20)    CHAR(8),
000024     MVSID                 POSITION(28)    CHAR(4),
000025     DSA_NAME              POSITION(77)    CHAR(8),
000026     DSA_LOCATION          POSITION(85)    CHAR(8),
000027     ACCESS                POSITION(93)    CHAR(8),
000028     DSA_INDEX             POSITION(101)   CHAR,
000029     DSA_SIZE_CUR           POSITION(102)   INTEGER,
000030     DSA_SIZE_PEAK         POSITION(106)   INTEGER,
000031     CUSHION_SIZE          POSITION(110)   INTEGER,
000032     GETMAIN_REQUESTS      POSITION(114)   INTEGER,
. . .

```

Figure 349. Edit JCL to load DB2 table

## Extracting Statistics HDB data to CSV

Select option 6 **Extract** from the HDB menu to request an HDB extract.

The HDB Extract facility allows you to export data from your HDB data sets to an Extract data set in CSV format, suitable as input into PC-based spreadsheet applications.

In this example, we have selected our statistics HDB for extracting to CSV.

File Options Help

Extract HDBs
Row 1 to 1 of 1

Command ==>
Scroll ==> CSR\_

Select to extract HDB.

Name	Type	Description	Changed	ID
S CICSP1S	STATS	Statistics HDB for CICSP1	2005/03/16 12:23	JCH

\*\*\*\*\* Bottom of data \*\*\*\*\*

Figure 350. HDB Extract

The list of statistics reports is displayed. Select the reports that you want to extract to CSV.

```

File Edit Options View Help
-----
                                Statistics Reports                                Line 1 of 26
Command ==> _____ Scroll ==> CSR_

Select reports to extract.

--      ** Reports **
-  -- Regions                                Collect Load
-  -- Transaction Manager                    Yes    No
-  -- CICS Dispatcher                        Yes    No
-  --   Dispatcher Overview                  Yes    No
-  --   Dispatcher TCB Modes                 Yes    No
-  --   Dispatcher TCB Pools                 Yes    No
-  --   MVS TCB Overview                     Yes    No
-  --   MVS TCBs                             Yes    No
-  -- CICS Storage                           Yes    No
-  --   Storage Overview                     Yes    No
-  --   DSAs                                Yes    No
-  --   Domain Subpools                      Yes    No
-  --   Task Subpools                        Yes    No
+  -- CICS Dumps                             Yes    No
+  --   Enqueue Pools                       Yes    No
+  -- Connectivity                           No     No
+  -- Files and Databases                     No     No
+  -- Logging                                No     No
+  -- Queues                                 No     No
+  -- Transactions                           No     No
+  -- Programs                               No     No
+  -- CICS Web Support                        No     No
+  -- Enterprise Java                        No     No
+  -- Miscellaneous                          No     No
+  -- CICS Server                            No     No
+  -- CICS Transaction Gateway                No     No
--      ** End of Reports **

```

Figure 351. Select Statistics reports for CSV extract

We have selected the DSAs report.

The run extract panel is displayed.

```

                                Run STATS HDB Extract – CICSP1
Command ==> _____

Specify run options then press Enter to continue submit.

----- Report Interval ----- HDB contains data
      YYYY/MM/DD HH:MM:SS.TH in the range:
From 2005/03/16 08:00:00.00 2005/03/15 07:00 Extract Recap:
To 2005/03/16 09:00:00.00 2005/03/16 11:00 DDname . . . HXTS0001

Output Data Set:
Data Set Name Prefix . . 'JCH.CICSPA.EXTRACT'
Disposition . . . . . 1 1. OLD 2. MOD (If cataloged)

Extract Format:                                Enter "/" to select option
Delimiter . . . . . ;                          / Include Field Labels

                                           Enter "/" to select option
                                           / Edit JCL before submit

```

Figure 352. Run Statistics HDB Extract

Specify the required reporting interval, data set name and other formatting options, then press Enter to proceed.

If you selected **Edit JCL before submit** then the extract JCL is generated and displayed in an edit session for review and submission.

```

EDIT          JCH.SPFTEMP3.CNTL                      Columns 00001 00072
Command ==> _____ Scroll ==> PAGE
***** ***** Top of Data *****
000001 //JCH#CPA JOB ,NNOTIFY=&SYSUID
000002 /** CICS PA V5R1 HDB Extract JCL
000003 //CICS PA EXEC PGM=CPAMAIN
000004 //STEPLIB DD DSN=CPA.SCPALINK,
000005 //          DISP=SHR
000006 //CPAHDBRG DD DSN=CPA.HDB.REPOSTRY,
000007 //          DISP=SHR
000008 //SYSPRINT DD SYSOUT=*
000009 /** DSAs
000010 //STAT014B DD DSN=JCH.SDS.STAT014B,
000011 //          DISP=(NEW,CATLG),
000012 //          UNIT=SYSDA,SPACE=(CYL,(10,10))
000013 //SYSIN DD *
000014 * STATS HDB=CICSP1
000015 CICS PA SMFSTART(2005/03/16,08:00:00.00),
000016          SMFSTOP(2005/03/16,09:00:00.00)
000017 CICS PA LINECNT(60),
000018          FORMAT(':', '/'),
000019          HDB(EXTRACT(CICSP1),OUTPUT(HXTS0001),
000020          LABELS,DELIMIT(';'),
000021          STAT014B(STAT014B)) DSAs
000022 /*
000023 /** HDB Container Data Sets. HDB Extract processing does not require
000024 /** these data sets to be included in the JCL as they are dynamically
000025 /** allocated when required. They are included:
000026 /** 1) for your reference
000027 /** 2) to ensure that all required data sets are cataloged
000028 /** 3) to allow DFHSM to recall required data sets up front
000029 //HDB00001 DD DISP=SHR,DSN=CICSPA.CICSP1.D05074.T102306.HDB
000030 //HDB00002 DD DISP=SHR,DSN=CICSPA.CICSP1.D05074.T152311.HDB
000031 //HDB00003 DD DISP=SHR,DSN= CICS PA.CICSP1.D05075.T042316.HDB
***** ***** Bottom of Data *****

```

Figure 353. Edit JCL for Statistics HDB Extract

Multiple statistics reports can be extracted in a single request.

Note that, like DB2 tables, CICS PA appends the statistics ID suffix to the extract data set name. Data set JCH.SDS.STAT014B can now be file transferred to your workstation for importing into a spreadsheet application.

CICS PA extracts CICS TG statistics to data set names with the low-level qualifier "HSTGnnnn". This distinguishes them from CICS TS statistics, which CICS PA extracts to data set names with the low-level qualifier "STATnnnn".

## Maintaining Statistics HDBs

Statistics and Performance HDBs are maintained in the same way. You can alter any of the HDB characteristics, such as container data set name and allocation size.

Select option 7 **Maintenance** from the HDB menu to maintain your HDB environment.

```

File Systems Options Help
-----
                                Maintain HDB                                More: >
Command ===> _____

Review and update HDB definition options then press EXIT to save.

Name . . . . . CICSP1S_ Type STATS   APPLID  CICSP1__ + Image MVS1____
Description . . Statistics HDB for CICSP1_____

Specify View . . 1_ 1. Options  2. Data Sets

Statistics Reports:
  S_ Select to specify Statistics Reports

Data Retention Period:
HDB: Years  ____ Months 10_ Weeks  ____ Days  ____ Hours  ____
DB2: Years  ____ Months  ____ Weeks  ____ Days  ____ Hours  ____

Data Set Allocation Settings:
DSN Prefix . . . . . CICS PA_
Management class . . . _____ (Blank for default management class)
Storage class . . . . _____ (Blank for default storage class)
Volume serial . . . . _____ (Blank for system default volume)
Device type . . . . . _____ (Generic unit or device address)
Data class . . . . . _____ (Blank for default data class)
Space Units . . . . . CYLS____ (TRKS, CYLS)
Primary quantity . . 10____ (In above units)
Secondary quantity  10____ (In above units)

F1=Help F3=Exit F4=Prompt F7=Backward F8=Forward F10=Actions F12=Cancel

```

Figure 354. Maintain HDB definition

For Statistics HDBs, you can also change the types of statistics data collected. Select **Select to specify Statistics Reports** to review or alter the type of statistics collected.

In the following example, we have activated collection for Transaction Manager statistics.

```

File Edit Options View Help
-----
Statistics Reports                                     Line 1 of 26
Command ==> _____ Scroll ==> CSR_

--  ** Reports **
-   Regions                                           Collect Load
-   A Transaction Manager                           Yes   No
-   CICS Dispatcher                                Yes   No
    Dispatcher Overview                            Yes   No
    Dispatcher TCB Modes                           Yes   No
    Dispatcher TCB Pools                           Yes   No
    MVS TCB Overview                                Yes   No
    MVS TCBs                                         Yes   No
-   CICS Storage                                    Yes   No
    Storage Overview                               Yes   No
    DSAs                                             Yes   No
    Domain Subpools                                Yes   No
    Task Subpools                                   Yes   No
+   CICS Dumps                                       Yes   No
    Enqueue Pools                                   Yes   No
+   Connectivity                                    No    No
+   Files and Databases                             No    No
+   Logging                                          No    No
+   Queues                                           No    No
...

```

Figure 355. Activate Statistics report for data collection

Note that either activating new reports, or deactivating reports already collecting data does not change the data already collected. All the existing data can still be reported, regardless of whether collection is still active or not.



---

## Chapter 22. Using the HDB dialog

CICS PA provides a menu-driven facility for managing your Historical Databases. A CICS PA Historical Database (HDB) is a repository of performance related data for your CICS systems. The type of information and level of detail contained in an HDB is determined by user-defined templates.

This chapter describes the CICS PA dialog for defining templates, defining and maintaining your HDBs, producing reports from the HDB data, and exporting the HDB data to DB2 tables.

---

### Historical Database Menu

Select option 5 **Historical Database** from the CICS PA Primary Option Menu to invoke the Historical Database Menu.

Every aspect of the CICS PA Historical Database is controlled via the ISPF dialog. The Historical Database Menu contains the functions to manage the Historical Database environment.

```
File  Options  Help
-----
                                Historical Database Menu
Option ==> _____
1 Templates      Design HDB Templates
2 Define         Define a new HDB
3 Load          Load data into the HDBs
4 Report         Submit HDB report requests
5 Export         Export HDB data sets to DB2
6 Extract        Extract HDB data sets to CSV
7 Maintenance    Maintain HDB definitions and data sets
8 Housekeeping   Perform HDB housekeeping

Repository . . . . 'CICSPROD.CICSPA.XYX.REPOSTRY' _____ +

CICS versions (VRM):
Transaction Server . . . 680
Transaction Gateway . . . 900

F1=Help    F3=Exit    F4=Prompt    F10=Actions    F12=Cancel
```

Figure 356. Historical Database (HDB) Menu

The Historical Database Menu provides a pathway to the steps for defining and using HDBs:

1. **Template.** (Performance HDBs only, not Statistics HDBs)

Defining an HDB is a two step process: first define a Template and then define an HDB based on that Template. The Template identifies which CMF performance fields are to be kept in the HDB.

For more information, see “HDB Templates” on page 631.

2. **Definition.**

After the Template is defined, then define the HDB and its options, such as the characteristics of the HDB data sets and the retention period of the data.

For more information, see “Define a Performance HDB” on page 650.

3. **Load.**

Loading data into the HDB is performed by the CICS PA batch reporting utility. The command that requests the utility to load an HDB is:

```
HDB(LOAD(...
```

CICS PA reads the CMF performance class data (and also, for Statistics HDBs, CICS Transaction Gateway statistics) and builds the HDB data sets. Because the HDB Load process is part of the normal batch reporting process, you can run CICS PA reports and load HDBs together with a single pass of the SMF data.

For more information, see “Load HDBs” on page 655.

#### 4. **Report.**

Performance HDB reporting is performed by the CICS PA batch reporting utility. The command that requests the utility to report against a Performance HDB is:

```
HDB(REPORT(...
```

You can tailor Performance HDB reporting by using a Report Form. This allows you to select which fields in the HDB are reported and how they are presented.

Statistics HDB reporting is done interactively using the CICS PA dialog.

Statistics Alert reporting alerts you when statistics field values meet specified conditions. The batch command that requests the utility to generate a Statistics Alert report against a Statistics HDB is:

```
HDB(STATSALERT(...
```

Before requesting a Statistics Alert report, you must create a Statistics Alert Definition. For details, see Chapter 14, “Statistics alert reporting,” on page 355.

Statistics List reporting provides fully customizable batch reporting of CICS TS and CICS TG Statistics. For details, see Chapter 14, “Statistics alert reporting,” on page 355. The batch command to generate Statistics List reports against a Statistics HDB is:

```
HDB(STATISTICSLIST(...
```

#### 5. **Export.**

Export allows you to load HDB data into a DB2 table. CICS PA automates this process with two simple steps:

- a. First define the DB2 table to house the data. CICS PA generates JCL to do this for you by creating the necessary DDL to define the table.
- b. Then load the data into the table. CICS PA generates JCL to do this for you by creating the necessary DB2 Load Utility statements to load the data.

For more information, see “HDB Export to DB2 tables” on page 671

#### 6. **Extract.**

The HDB Extract facility allows you to export data from your HDB data sets to an extract data set in CSV (comma separated values) format, suitable as input into PC-based spreadsheet applications.

#### 7. **Maintain.**

HDB maintenance allows you to change your HDB definition and manage the HDB container data sets. See “HDB Maintenance” on page 680.

#### 8. **Housekeeping.**

HDB housekeeping should be run periodically to clean up your HDB environment. Housekeeping performs these tasks:

- a. Deletes HDB container data sets that have expired or have delete pending.
- b. Deletes expired DB2 table rows.
- c. Removes definitions from the Repository that are no longer required.

For more information, see “Housekeeping” on page 688.

When you display the Historical Database Menu for the first time, specify the name of a **Repository**. If the Repository data set is not cataloged, CICS PA will prompt you to define it when you select one of the options.

---

## Repository

Your HDB environment is controlled by the Repository. The Repository is a VSAM KSDS that acts as a repository for all definitions associated with your HDB environment:

- Templates (Performance HDBs only)
- HDB Definitions
- Selection Criteria (Performance HDBs only)
- Container data set information
- Audit information about Load requests

The Repository is also a repository for the following definitions that are not associated with HDBs:

- Shared System Definitions
- Application Groups
- Statistics Alert Definitions
- Resource Lists
- Performance Alert Definitions
- Statistics Forms

Each repository acts independently. Only one repository can be referenced and used at a time.

**Tip:** Share one global repository with other CICS PA users so that you only need to generate history data once, allowing multiple users to report against it. There is no limit to the number of repositories you can define.

On the Historical Database Menu, specify the Repository data set name. You can change the default name by overtyping it or by pressing **Prompt** (F4) to select from a list of previously used repositories. Normal ISPF data set conventions apply when specifying the name. If the Repository data set is not cataloged, the dialog will prompt you to define it when you select an option from the menu.

Define Repository

Command ===> \_\_\_\_\_

Enter "/" to select option  
- Edit IDCAMS command  
- Browse errors only

Repository Name . . . 'CICSPROD.CICSPA.XYX.REPOSTRY' \_\_\_\_\_

Cluster Level Information:

Space Units . . . . . 1  
Volume . . . . . \_\_\_\_\_  
Data Class . . . . . \_\_\_\_\_  
Management Class . . . \_\_\_\_\_  
Storage Class . . . . . \_\_\_\_\_

1. Cylinders  
2. Tracks  
3. Records  
4. Kilobytes  
5. Megabytes

Primary Quantity . . . 1  
Secondary Quantity . . 1

F1=Help
F3=Exit
F6=Resize
F12=Cancel

Figure 357. Define Repository

Specify the required allocation settings and then press **Enter** to define the Repository data set.

The allocation settings are:

#### Edit IDCAMS command

Select this option to edit the IDCAMS command that CICS PA generates to define the Repository. If this option is not selected, the IDCAMS command is issued immediately.

#### Browse errors only

Select this option to browse the output from IDCAMS only when a non-zero return code is returned by IDCAMS. If this option is not selected, the output from IDCAMS will always be presented.

#### Repository Name

Specify the name of the Repository data set to be defined.

Normal ISPF data set conventions apply. Enclose a fully qualified data set name in quotes, otherwise the TSO prefix is used as a high level qualifier.

#### Cluster Level Information

##### Space Units

Select one of the following in which to express the data set size:

1. cylinders
2. tracks
3. records
4. kilobytes
5. megabytes

##### Space Quantities

Specify the Primary and Secondary allocation quantities in cylinders, tracks, records, kilobytes or megabytes as indicated in the Space Units field. Express all quantities in decimal, not hexadecimal.

Typically a space allocation of 1 primary and 1 secondary cylinder is sufficient.

**Volume**

The volume serial name of the DASD volume to contain the data set.

**Data Class**

Specify the name of the data class for the data set. The data class provides the allocation attributes for the data set. The storage administrator at your installation defines the data class. However, you can override the parameters defined for a data class by explicitly specifying other attributes.

**Management Class**

For an SMS-managed data set, specify the name of the management class for a new data set. The storage administrator at your installation defines the names of the management classes you can specify.

If management class is not specified, but storage class is specified or defaulted, management class is derived from automatic class selection (ACS).

If management class is specified and storage class is not specified or derived, the DEFINE will fail. Note that if SMS is inactive and management class is specified, the DEFINE will fail.

**Storage Class**

For an SMS-managed data set, specify the name of the storage class. The storage class replaces the storage attributes that are specified on the UNIT and VOLUME operand for non-SMS-managed data set. Use the storage class to specify the storage service level to be used by SMS for storage of the data set. The storage administrator at your installation defines the names of the storage classes you can specify. A storage class is assigned when either you specify a storage class, or an ACS routine selects a storage class for the new data set. Note that if SMS is inactive and storage class is specified, the DEFINE will fail.

When the repository is defined, you are ready to start using HDB.

---

## HDB Templates

Templates define the type and format of data in the Historical Databases. Templates are similar to Report Forms. Where Report Forms define the fields to be included in a report or extract, Templates define the fields to be included in an HDB. Templates provide HDBs with:

- Flexibility. You decide exactly what information is recorded in the HDB.
- Ease of use. The editor provides a simple way of tailoring the template.
- Transparency. You can see at a glance exactly what information is recorded in the HDB.

The Template contains the following definition information about the HDB:

- Type of HDB: List or Summary.
- Fields names and associated field attributes.

## List of Templates

Select option 1 **Templates** from the Historical Database Menu to display the list of defined Templates, allowing you to define new Templates or update existing ones.

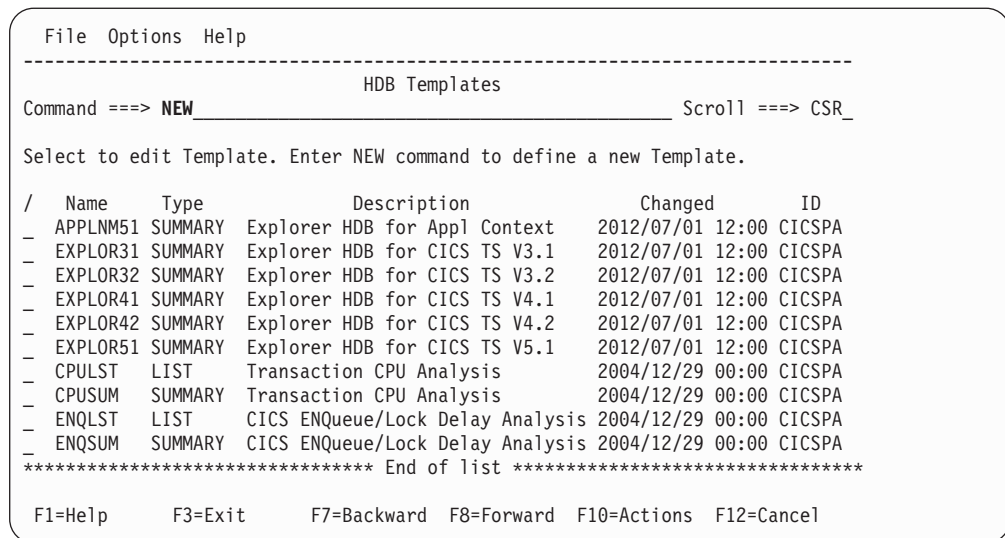


Figure 358. HDB Templates

You can manage your Templates using the following line actions and primary commands.

### Line Actions

- /** Display the selection list of line actions
- E** Edit the Template. Care should be taken when updating a template if an HDB is already using it. Data loaded before the update will remain unchanged and will therefore be different to any new data loaded in the future.
- S** Select the Template (same as Edit).
- V** View the Template. This looks like the Edit panel but has no hold on the data and has no Save capability.
- C** Copy the Template to the same or another Repository.
- D** Delete the Template.

**Note:** You cannot delete a Template if it used by an HDB. You might need to run Housekeeping before the Delete is allowed.

### Primary Commands

#### NEW name

This command creates a new Template. The New Template window is displayed to allow you to specify the name, type and other attributes of the new Template. See "Creating new Templates" on page 633 for information on how to proceed.

Also available from **File** in the action bar.

#### SELECT name

This command (or **S**) selects the specified Template for editing. If the Template does not exist, it is created as if the **NEW** command was used.

#### SORT Name | Type | Description | Changed | Id

This command sorts the list of Templates on the specified column. The default sort field is **Name**. The sort sequence is ascending for all except the Changed column which is descending. The sort order is retained only until Exit or another SORT command is issued.

### LOCATE string

This command (or **L** or **LOC**) is used to locate an entry in the list based on the primary sort field. By default, LOCATE operates on the **Name** field. The string should be no longer than the primary sort field and not enclosed in quotes. The display will scroll to the entry which matches the string, or the entry preceding it if an exact match is not found.

### FIND string

This command (or **F**) looks for the specified character string within all columns in the displayed data. The string need only be enclosed in quotes if there are embedded spaces. The search is not case sensitive. The display scrolls to the row where the string is found and positions the cursor on the matching data. To find more occurrences, use **F5** or the **RFIND** command repeatedly.

If there is no match but the search did not begin at the start of the list, the screen does not change and the message \*Bottom of data reached\* is displayed. Use **F5** or **RFIND** to search from the top. If there is no match in the entire list, the screen does not change and the message No CHARS xxx found is displayed.

## Creating new Templates

The **NEW** command is used to define a new Template. New Templates are created by specifying their initial attributes and then tailoring the data fields using the Template editor.

```
File Systems Options Help
-----
New HDB Template
Command ===>
Specify new Template options.
Name . . . . . PRODSUM_ Version (VRM) . . . ____ +
System Selection:      Field Categories:
APPLID . . . . ____ +  ____ _ Select to specify Field Categories
MVS Image . . ____
Template Type:
2 1. List
  2. Summary
```

Figure 359. New HDB Template

You need to specify the Template name and type. In this example, a Summary Template called PRODSUM is created. Other options affect which CMF Fields the Template will initially be defined with. They can be used to reduce the amount of fields contained in the Template.

The options are:

**Name** The name of the new Template. A 1-8 character name in ISPF member name format. The name must be unique within the Repository.

### APPLID, MVS Image, Version (VRM)

Optionally specify the CICS System (APPLID/Image) or CICS Version (VRM). This ensures that the Template is populated only with Performance Class fields that are applicable.

- Specify CICS System (APPLID, or APPLID and MVS Image) to populate the Template with fields applicable to that CICS system. When available, CICS PA uses the CICS version and Dictionary record for that system to determine which fields to include in the Template. The CICS system must be defined in System Definitions. Press **Prompt** (F4) from APPLID to select one from a list (see “Select a system (CICS APPLID)”). To link directly to System Definitions, use **Systems** in the action bar.
- Alternatively, specify VRM to populate the Template with fields for that CICS version only. Press **Prompt** (F4) to select from a list of supported versions (see “Select a version (VRM)” on page 635).

If a CICS system (APPLID/Image) is specified and a VRM can be derived from the MCT load library or SDFHLOAD library, then that VRM is used. If a VRM cannot be derived from the system definition then the VRM value specified in this panel is used.

If you do not specify either a CICS System or a VRM, then CICS PA populates the Template with fields applicable to the latest supported release of CICS.

### Field Categories

Enter line action **S** or **/** to select the field categories to use to initially populate your new Template. For example, you can initialize your Template with Task and Terminal Control fields by selecting DFHTASK and DFHTERM from the list. The default is all categories, except CROSSYS, DBCTL, and OMCICS. See Figure 361 on page 635 for an example of the Field Categories selection list.

Within the selected categories, the fields added to your Template depend on the specified CICS APPLID or VRM. If APPLID is specified, CICS PA obtains the fields from the CMF Dictionary for that APPLID. Otherwise the VRM is used (the default is **690**).

### Type of Template

The type of HDB is determined by the type of Template:

#### 1. List

A List HDB contains data records for individual transactions. Typically, List HDBs are used for the detailed analysis of recent transaction events and have a short life span (retention).

#### 2. Summary

A Summary HDB contains data records that summarize transaction activity over a specified time interval. Typically, Summary HDBs are used for long term trend analysis and capacity planning.

When specification is complete, press **Enter** to proceed with defining the Template.

### Select a system (CICS APPLID)

To build an HDB Template for a particular CICS system, you can select one from a list of available CICS APPLIDs (APPLID/IMAGE) by pressing **Prompt** (F4) from the New Template APPLID field.



Systems

Row 1 to 3 of 3

Command ==>

Scroll ==> PAGE

Select a System then press Enter.

System	Image	Files	Description
. CICSP001	MVS1	Yes	CICS system CICSP001/MVS1
. CICS001		Yes	CICS system CICS001
. CICST001		No	CICS testing

\*\*\*\*\* End of list \*\*\*\*\*

Figure 360. Select a system (CICS APPLID)

This is a list of the CICS Systems defined in System Definitions. To select a system from the list, enter line action **S** (or point-and-shoot).

Select a version (VRM)

To display the list of supported CICS versions, press **Prompt** (F4) from the New Template Version (VRM) field.

This is a list of CICS Version Release Modification (VRM) levels supported by CICS PA:

- 640
- CICS Transaction Server for z/OS Version 3 Release 1
- 650
- CICS Transaction Server for z/OS Version 3 Release 2
- 660
- CICS Transaction Server for z/OS Version 4 Release 1
- 670
- CICS Transaction Server for z/OS Version 4 Release 2
- 680
- CICS Transaction Server for z/OS Version 5 Release 1
- 690
- CICS Transaction Server for z/OS Version 5 Release 2

To select a CICS version from the list, enter line action **S** (or point-and-shoot).

Select field categories

To display the list of available CICS field categories, enter **S** or **/** to select Field Categories from the New Template panel.

Select Field Categories

Command ==>

CMF Groups:

- DFHAPPL - Application naming	- DFHJOUR - Journal
- DFHBTS - BTS	- DFHMAPP - BMS Maps
- DFHCHNL - CHANNEL option	/ DFHPRG - Program Control
/ DFHCICS - CICS task information	- DFHRMI - Resource Manager (RMI)
- DFHDATA - Data processing	- DFHSOCK - Secure Sockets
- DFHDEST - Transient Data	/ DFHSTOR - Storage Control
- DFHDOCH - Document Handler	- DFHSYNC - Syncpoint processing
- DFHEJBS - EJB Server	/ DFHTASK - Task Control
- DFHFEP1 - Front End (FEPI)	- DFHTEMP - Temporary Storage
- DFHFILE - File Control	/ DFHTERM - Terminal Control
	- DFHWEBB - Web Interface

Region Type:

- AOR - Application-owning	- DBCTL - IMS DBCTL
- FOR - File-owning	- CROSSYS - Cross-System
- TOR - Terminal-owning	- OMCICS - OMEGAMON
- DB2 - AOR with DB2	

User Fields:

Figure 361. Select field categories

This panel displays the field categories that you can select to populate a new Template. The categories reflect the various ways of using and configuring your

CICS systems. You can choose just the ones that you require for your HDB. Only categories applicable to the specified CICS version are available for selection. If not specified, 690 is assumed.

Enter / to select one or more field categories, then press **Next** (F11) or **Exit** (F3). The fields in the selected categories, and relevant to the specified CICS version, will appear in the new Template.

Selecting no categories has the same effect as selecting all categories except DBCTL, CROSSYS, and OMCICS.

To limit the Template to fields that are relevant to particular types of CICS region (such as application-owning regions), select one or more region type. Selecting a region type excludes from the Template any fields that are not relevant to that region type, as defined in the sample monitoring control tables provided by CICS (in sample library SDFHSAMP members DFHMCTx\$).

### Primary Commands

#### SELECT

This command selects all field categories.

#### RESET

This command (or **RES**) resets all field categories by clearing the selection line actions.

## List Template

A List Template defines the fields to be included in a List HDB. A List HDB contains data records for individual transactions. Typically, List HDBs are used for the detailed analysis of recent transaction events and have a short life span (retention).

The Template editor is very similar to the Report Forms editor. You can manipulate the Template to suit your needs.

File Edit Confirm Upgrade Options Help

EDIT List Template – CPULST
Row 1 of 18 More: >

Command ==>
Scroll ==> PAGE

Description . . Transaction CPU Analysis
Version (VRM): 690

Selection Criteria:
Performance \*

Field

/ Name + K Description

— START — A Transaction identifier

— TRAN — A Transaction identifier

S — USERID — A User ID

— TASKNO — Transaction identification number

— STOP — A Task stop time

— RESPONSE — Transaction response time

M — DISPATCH — Dispatch time

A — CPU — CPU time

— QRCPU — CICS QR TCB CPU time

— MSCPU — CICS TCBs CPU time

— ROCPU — CICS RO TCB CPU time

— KY8CPU — CICS Key 8 TCB CPU time

— J8CPU — CICS J8 TCB CPU time

— L8CPU — CICS L8 TCB CPU time

— S8CPU — CICS S8 TCB CPU time

— EOD — End of HDB

— TERM — Terminal ID

F1=Help
F3=Exit
F4=Prompt
F5=Rfind
F7=Backward
F8=Forward

F10=Actions
F11=Right
F12=Cancel

Figure 362. Edit List Template (View 1 of 2)

Scroll **Right** (F11) to see more information.

File Edit Confirm Upgrade Options Help

EDIT List Template – CPULST
Row 1 of 18 More: >

Command ==>
Scroll ==> PAGE

Description . . Transaction CPU Analysis
Version (VRM): 690

Selection Criteria:
Performance \*

Field

/ Name + K Length Dictionary Definition Offset Length

— START — A 26 START DFHCICS T005 — —

— TRAN — A 4 TRAN DFHTASK C001 — —

— USERID — A 8 USERID DFHCICS C089 — —

— TASKNO — 4 TRANNUM DFHTASK P031 — —

— STOP — A 26 STOP DFHCICS T006 — —

— RESPONSE — 8 RESP CICS PA D901 — —

— DISPATCH — 12 USRDISPT DFHTASK S007 — —

— CPU — 12 USRCPUT DFHTASK S008 — —

— QRCPU — 12 QRCPUT DFHTASK S256 — —

— MSCPU — 12 MSCPUT DFHTASK S258 — —

— ROCPU — 12 ROCPUT DFHTASK S270 — —

— KY8CPU — 12 KY8CPUT DFHTASK S263 — —

— J8CPU — 12 J8CPUT DFHTASK S260 — —

— L8CPU — 12 L8CPUT DFHTASK S259 — —

— S8CPU — 12 S8CPUT DFHTASK S261 — —

— EOD — — — —

— TERM — 4 TERM DFHTERM C002 — —

F1=Help
F3=Exit
F4=Prompt
F5=Rfind
F7=Backward
F8=Forward

F10=Actions
F11=Right
F12=Cancel

Figure 363. Edit List Template (View 2 of 2)

When editing is complete, press **Exit** (F3) to save your Template.

The List Template consists of the following fields:

**Description**

Up to 32 characters of text to describe the purpose of the Template. This description is shown on the Templates panel to help you identify the Templates in the list. It is initially set to **List HDB Template**.

**Version (VRM)**

This identifies the CICS release that this Template was created for. It determines which CMF fields are available for selection in this Template.

**Selection Criteria**

Optionally, you can specify Selection Criteria to filter the data on time periods and field values. Thereby you can restrict the HDB to only the data that is of interest to you.

The available line actions are:

- /      Display the selection list of line actions.
- S**      Select (edit) the Selection Criteria. See "Performance Selection Criteria" on page 646 for information on specifying Selection Criteria.
- A**      Activate the Selection Criteria so they are included for HDB processing. Selection Criteria can only be activated if you have specified at least one Select Statement and it is not excluded. An asterisk \* indicates they are active.
- D**      Deactivate the Selection Criteria. Any you might have specified here will not be used in HDB processing.

**Field rows**

One row for each field. The order of the fields in the Template dictates the order of the fields in the HDB records. This order is important because it determines the default sequence of fields when reporting. **START** or **STOP** must be the first field positioned at the top of the Template. The fields have the following attributes: Field Name, Key, Description, Length, Dictionary Definition, User Field Offset and Length (character user fields only).

**Field Name**

The CICS PA field name. To select from a list of fields applicable to this type of HDB Template and CICS version, enter line action **S** (see "Field selection" on page 641) or from the field name, press **Prompt** (F4) (see "Select a performance field" on page 641). The names for user fields are derived from the MCT of the specified CICS system.

**EOD** is a special entry managed by CICS PA. It signals the end of the HDB record. The fields listed above EOD are included in the record in the same order as they appear in the list. The fields below EOD are ignored.

CICS PA automatically sets EOD when the Template is created and resets it if necessary when the Template is changed to ensure it is maintained in a valid position.

- K**      Key field indicator for DB2 Export (see "HDB Export to DB2 tables" on page 671). A value of **A** (ascending) identifies this as a key field if it is above EOD, or a key field candidate if it is below EOD. The allowed key fields are character or time stamp fields. Any number of key fields can be specified, but at least one must be specified. Either **START** or **STOP** must be specified as the first field at the top of the Template.

The Key field indicator is used only when exporting to DB2. CICS PA generates DDL to create an index for all key fields. Blank the K field if you do not need a DB2 index for this field.

HDB Load and Report requests treat all time stamp and character fields as key fields, regardless of their Key field indicator setting.

### Description

This is a short description of the field. Enter line action **H** (Help) to see a more detailed description. See “Performance field help” on page 643 for an example of the help details displayed in a pop-up window.

### Length

The length of the field in the HDB record.

### Dictionary Definition

The description of the CMF data field in the format *informalname owner xnnn* where:

- *informalname* is the CMF field name
- *owner* is the CICS component that 'owns' the field
- *x* indicates the data type:
  - A - 32- or 64-bit count
  - C - character string
  - D - CICS PA derived time
  - P - packed decimal number
  - S - clock (time-count)
  - T - STCK time stamp
  - X - CICS PA calculated count
- *nnn* is the field identifier

Some special fields, such as APPLID and RESPONSE, are not defined in the CMF Dictionary and are given an owner of 'CICSPA'. They are either derived from the fixed section of the CMF record (for example, APPLID), or calculated from two or more other CMF fields (for example, RESPONSE).

### User Field Offset and Length

This is used for character user fields when only part of the field is to be included in the HDB record. **Offset** is the position of the first character and **Length** is the number of characters from this position to be included. For example, if the user field contains the value ABCDEFG, then specifying offset 1 and length 4 gives the output ABCD. Both values are required for character user fields and default to the entire field (offset 1 and maximum length).

CICS PA JCL generation translates these values to  
FIELDS(Character(SUBSTR(offset,length),...

### Line Actions

- / Display the selection list of line actions.
- S Select a field name from a list of available CMF fields. See “Field selection” on page 641 for an example of the field selection panel.
- I Insert a blank row after this row for entry or selection of another field.
- R Repeat this row.
- RR Repeat a block of rows bounded by two RRs.

- C** Copy this row.
- CC** Copy a block of rows bounded by two CCs.
- M** Move this row.
- MM** Move a block of rows bounded by two MMs.
- A** Move/Copy after this row.
- B** Move/Copy before this row.
- D** Delete this row.
- DD** Delete a block of rows bounded by two DDs.
- H** Field Help. Display a detailed explanation of the field. See “Performance field help” on page 643 for an example of the field help panel.

**Note:**

1. Line operations can span the EOD row. CICS PA will reset EOD after the operation has completed to ensure it is validly positioned. Only one EOD is retained, that closest to the top of the list. EOD cannot be deleted.
2. Deleted user fields cannot be recovered.
3. In a Summary Template:
  - Key fields must be together at the top of the Template.
  - **TASKCNT** is a required field and must be after the key fields.

## Primary Commands

### **FIND string**

This command (or **F**) looks for the specified character string in all columns or a subset of columns in the displayed data. The string need only be enclosed in quotes if there are embedded spaces. The search is not case sensitive. The display scrolls to the row where the string is found and positions the cursor on the matching data. To find more occurrences, use **F5** or the **RFIND** command repeatedly.

If there is no match but the search did not begin at the start of the list, the screen does not change and the message \*Bottom of data reached\* is displayed. Use **F5** or **RFIND** to search from the top. If there is no match in the entire list, the screen does not change and the message No CHARS xxx found is displayed.

Also available from **Edit** in the action bar.

**SAVE** This command is only available from Edit mode and saves any changes you have made. You cannot save changes made in View mode.

Also available from **File** in the action bar.

### **RESET**

This command (or **RES**) removes all outstanding line actions and deletes any blank rows.

Also available from **Edit** in the action bar.

### **CONFIRM ON|OFF**

**CONFIRM ON** (or **CONFIRM**) instructs CICS PA to prompt for confirmation when you request to Cancel from the Template panel when there have been updates.

With **CONFIRM OFF**, Cancel requests are actioned immediately, discarding any changes.

This command changes the setting only for the current Edit session. On exit, it reverts to the value set by **Cancel Confirmation** in CICS PA Settings.

Also available from **Confirm** in the action bar.

**UPGRADE vrm**

This command is used to upgrade the Template to the specified CICS version (VRM) provided it is a later release. CMF Fields for all CICS releases after the current release and up to the specified release are added to the bottom of the Template.

Also available from **Upgrade** in the action bar.

**Field selection**

Field Selection allows you to view expanded field descriptions and select a field name for insertion into your Template. The panel cycles through all CMF performance fields applicable to the type of Template and CICS version. To display the Field Selection panel, enter line action **S** against a field or blank line on the Template panel where you want to insert the selected field name.

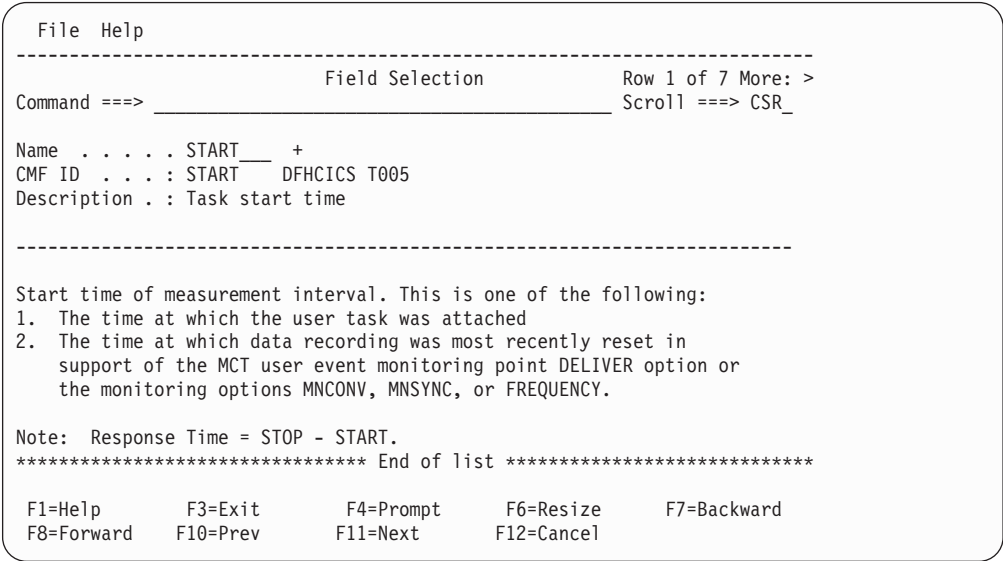


Figure 364. Field selection

This panel cycles through all the CMF data fields available for selection. Each field is displayed in turn with its expanded description like that provided by Template line action **H** (see “Performance field help” on page 643). Details are only available for CICS-defined fields, not user fields.

To cycle through the list of fields, press **F11** and **F10** to move Forward or Backward through the list. You can restart anywhere in the cycle by entering a valid field name then moving Forward or Backward from that point.

You can press **Prompt** (F4) from the Name field to display a selection list of fields (see “Select a performance field”).

When the required field is displayed in the Name field, press **Exit** (F3) to select it.

**Select a performance field**

Select a Performance Field allows you to select a field name from a list of available CMF performance fields. To display the selection list, press **Prompt** (F4) from the

Field Name field on the Template panel or the Field Selection panel.

```

File Help
-----
                                Select a Performance Field          Row 1 of 274 More: >
Command ==> _____ Scroll ==> PAGE

Field
/ Name      Description
- START     Task start time
- MVSID     MVS SMF ID
- APPLID    CICS Generic APPLID
- TRAN      Transaction identifier
- USERID   User ID
- PROGRAM   Program name
- TASKNO    Transaction identification number
- RESPONSE  Transaction response time
- DISPATCH  Dispatch time
- CPU       CPU time
- SUSPEND   Suspend time
- DISPWAIT  Redispatch wait time
- FCWAIT    File I/O wait time
F1=Help    F3=Exit    F5=Rfind    F6=Resize    F7=Backward
F8=Forward F10=Actions F11=Right  F12=Cancel

```

```

File Help
-----
                                Select a Performance Field          Row 1 of 274 More: >
Command ==> _____ Scroll ==> PAGE

Field
/ Name      Dictionary Definition
- START     START    DFHCICS T005
- MVSID     MVSID    CICSPA  C904
- APPLID    APPLID   CICSPA  C903
- TRAN      TRAN     DFHTASK C001
- USERID   USERID   DFHCICS C089
- PROGRAM   PGMNAME  DFHPROG C071
- TASKNO    TRANNUM  DFHTASK P031
- RESPONSE  RESP     CICSPA  D901
- DISPATCH  USRDISPT DFHTASK S007
- CPU       USRCPUT  DFHTASK S008
- SUSPEND   SUSPTIME DFHTASK S014
- DISPWAIT  DISPWTT  DFHTASK S102
- FCWAIT    FCLOWTT  DFHFILE S063
F1=Help    F3=Exit    F5=Rfind    F6=Resize    F7=Backward
F8=Forward F10=Actions F11=Right  F12=Cancel

```

Figure 365. Select a field

This panel lists all the CMF data fields available for selection. Enter line action **S** to select a field name from the list.

To leave without selecting, use Exit or Cancel.

#### Field Name

The CICS PA name for the CMF data field.

Line action **/** or **S** will insert the field name into the previous panel in the row where the cursor was positioned.

#### Description

This is a short description of the field. Enter line action **H** (Help) for a more detailed description. See Figure 366 on page 643 for an example of the help details displayed in a pop-up window.



Dictionary Definition

The description of the CMF data field in terms of the CMF informal name, CICS owner, data type, and field identifier. See “List Template” on page 636 for further information.

Line Actions

- / Display the menu of line actions.
- S Select a field name.
- H Field Help. Display a detailed explanation of the field.

Primary Commands

To help locate a particular field, you can use the **FIND** (or **RFIND**) command which will search in all columns of data for a specified string.

Performance field help

On the Template panel, if you enter the line action **H** against a field, a pop-up window will display a more detailed explanation of the field.

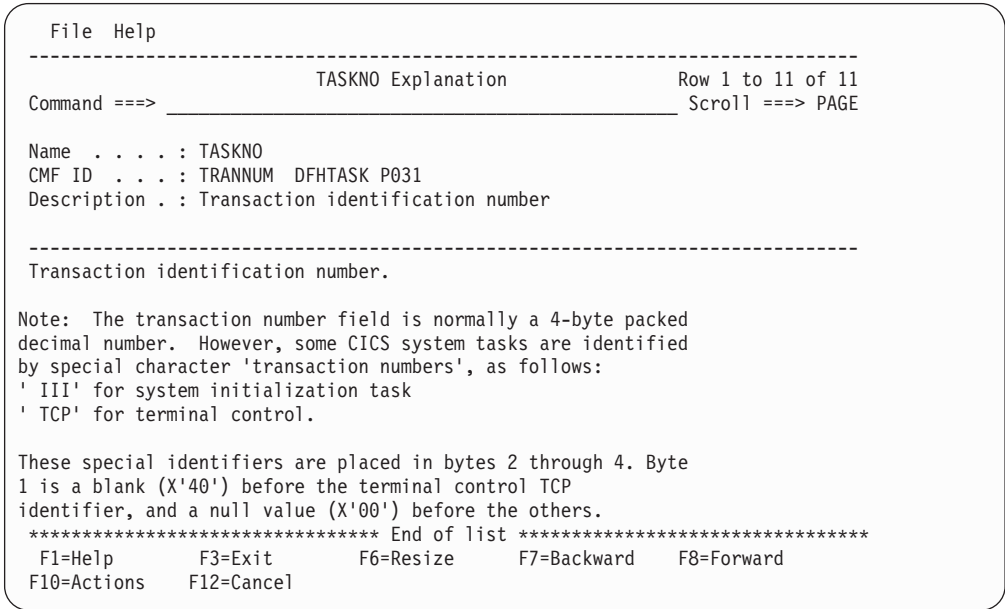


Figure 366. Performance field help

This panel provides a more detailed description of the field. It is only available for CICS-defined fields, not user fields.

The details are:

**Name** The name of the field as it is known to CICS PA.

**CMF ID**

The Dictionary description of the CMF data field (see “List Template” on page 636).

**Description**

A short description of the field followed by the expanded description.

Template upgrade

Templates are release-dependent. When you define a new Template you specify the CICS System or CICS Version (VRM) so that CICS PA can initialize the Template

with fields appropriate to that release. However, you can later upgrade the Template to a later release by using **Upgrade** in the action bar of the Template panel. This facility is available for all Template types.

- \*. Upgrade to CICS version 640
- \*. **Upgrade to CICS version 650**
- 3. **Upgrade to CICS version 660**
- 4. **Upgrade to CICS version 670**
- 5. **Upgrade to CICS version 680**
- 6. **Upgrade to CICS version 690**

*Figure 367. Upgrading your Template*

The Upgrade action bar choice (or **UPGRADE vrm** command) introduces the new CMF fields of a later release of CICS into your Template. The new fields are inserted at the bottom of the Template as candidate fields. Upgrading does not affect the fields currently in the Template, nor does it affect the format of HDB container data sets that have already been loaded based on this Template. To then incorporate a new field into your HDB from hereon, move the new field above the EOD marker.

You can upgrade your Template to a CICS Version (VRM) that is not marked by an asterisk \*. To do this, select the VRM and press **Enter**. Otherwise, press **Cancel** to retain the Template at the current level.

## Summary Template

A Summary Template defines the fields to be included in one or more Summary HDBs. A Summary HDB contains data records that summarize transaction activity over a specified time interval. Typically, Summary HDBs are used for long term trend analysis and capacity planning.

Edit the Template to meet your reporting requirements. In this example, FCAMCT is deleted and TSWAIT is inserted.

```

File Edit Confirm Upgrade Options Help
-----
                        EDIT Summary Template - PRODSUM          Row 1 of 244 More: >
Command ==> _____ Scroll ==> CSR_

Description . . . Summary HDB Template_____ Version (VRM): 690

Selection Criteria:
_ Performance                      Time Interval . . 00:15:00 (hh:mm:ss)

Field
/ Name + K Description
--- START_ A Task start time
--- MVSID_ A MVS SMF ID
--- APPLID_ A CICS Generic APPLID
--- TRAN_ A Transaction identifier
--- TASKCNT_ Total Task count
--- RESPONSE_ Transaction response time
--- DISPATCH_ Dispatch time
--- CPU_ CPU time
--- SUSPEND_ Suspend time
--- DISPWAIT_ Redispatch wait time
--- FCWAIT_ File I/O wait time
D_ FCAMCT_ File access-method requests
--- IRWAIT_ MRO link wait time
--- SC24UHW_ UDSA HWM below 16MB
I_ SC31UHW_ EUDSA HWM above 16MB
--- EOD_ ----- End of HDB -----
--- TERM_ A Terminal ID
F1=Help F3=Exit F4=Prompt F5=Rfind F7=Backward F8=Forward
F10=Actions F11=Right F12=Cancel

```

Figure 368. Edit Summary Template

A Summary Template operates in a similar manner to a List Template. Like the List Template (see “List Template” on page 636), the following features apply to the Summary Template:

- Scroll **Right** (F11) for more information.
- Specify the following details. Where these differ with the List Template, the differences are noted.
  - **Description.** The default description is **Summary HDB Template**.
  - **Version (VRM).**
  - **Selection Criteria.** For example, the HDB only includes data for transactions that use File Control services (FCTOTAL>0).
  - **Time Interval.** Summary Templates specify a recording time interval in the range 00:00:01 (1 second) to 24:00:00 (24 hours). The default is **00:01:00** (1 minute) which indicates that summary data is accumulated and recorded in 1 minute intervals. Select the interval carefully because it will impact on HDB processing as follows:
    1. **Loading.** Shorter recording intervals write more records, increasing the size of your HDB data sets.
    2. **Reporting.** Longer recording intervals restrict reporting. For example, if you specify a recording interval of 1 hour then you can only report on 1 hour (or higher) intervals, and 15 minute interval reporting is not possible.

Therefore selecting the correct interval is a balance between not loading too much data and not restricting reporting. Specify an interval that is both small enough so that data set size is kept to a minimum yet large enough to meet your reporting requirements. In Figure 368, the interval has been changed to 15 minutes.

A time interval of less than one hour must fit evenly into the hour. CICS PA will round it down to the nearest interval that aligns to the hour. For example, 1.35 is reduced to 00:01:30 minutes which will produce 40 interval report lines for each hour of data.

A time interval of more than one hour must fit evenly into the day. CICS PA will round it down to the nearest interval that aligns to the day. For example, 10.30.23 is reduced to 08:00:00 hours which will produce 3 interval report lines for each day of data.

Minutes take precedence for an abbreviated entry. For example:

**1** becomes 00:01:00

**1.1** becomes 00:01:00 (rounded down from 00:01:01)

**1.1.1** becomes 01:00:00 (rounded down from 01:01:01)

This option generates the INTERVAL(hh:mm:ss) operand.

- **Field rows.** A Summary Template has the following additional features:
  1. Key fields must be together at the top of the Template.
  2. The allowed key fields are: START, STOP, MVSID, APPLID, TRAN, TERM, APPLTRAN, APPLPROG, JOBNAME, PRCSTYPE, RPTCLASS, SRVCLASS, TCLASSNM, TCPSRVCE, USERID. Up to six key fields can be specified, but at least one must be specified. Either **START** or **STOP** must be specified as the first field at the top of the Template.
  3. **TASKCNT** is a required field immediately after the key fields.
- “Field selection” on page 641
- “Select a performance field” on page 641
- “Performance field help” on page 643
- “Template upgrade” on page 643

When editing is complete, press **Exit** (F3) to save your Template.

**Attention:** After a Template has been initially saved, you are permitted to edit the Template to change its field list. However if the Template is already being used to load data into a HDB, then changing the Template can potentially cause reporting problems in the future. CICS PA supports the alteration of Template fields, but a few simple rules will ensure that HDB processing is not compromised:

1. Do not change the key fields of a Summary Template.
2. Do not change the focus of a Template. For example, if the Template includes Temporary Storage fields only, do not delete those fields and insert File Control fields in their place. You should create another Template with a focus on File Control.

## Performance Selection Criteria

Optionally, you can specify Selection Criteria in an HDB Template. When the associated HDB is loaded, the Selection Criteria filter the CMF performance class records based on time and field values.

To specify Selection Criteria, enter line action **S** against Performance Selection Criteria on the Template panel.

The operation of Selection Criteria for HDBs is the same as that for Report Sets, only the available fields might differ. For more information, see:

- “Specifying Selection Criteria” on page 156
- “Specifying Select Statements” on page 157

Resource Lists can be used in Performance Select Statements as a convenient way to specify a list of values. This is similar to the concept of Object Lists in Report Sets. However, Object Lists and Resource Lists are stored in different data sets. For details, see “Object Lists versus Resource Lists” on page 327.

## Resource Lists

Resource Lists are stored in the Repository.

A Resource List defines a list of field values that can be used when specifying:

- Selection Criteria for filtering the data for your HDB Load.
- Application Groups. For details, see Chapter 11, “Application Grouping,” on page 335.
- Statistics Alert definitions. For details, see Chapter 14, “Statistics alert reporting,” on page 355.

A typical use might be to define all the transaction IDs that belong to a particular application system. Resource Lists enable you to define a group of related values once, then use it in many HDBs by simply specifying the name of the Resource List in your Selection Criteria. This avoids duplicating the same list of values in different HDBs.

For example, instead of specifying Select Statements that include transactions B001,B002,B003,..., you predefine a Resource List called BTRANS that has values B001,B002,B003,... Now when you specify the Select Statement, you simply specify BTRANS to include those transactions. To select a valid name from a list of predefined Resource Lists, press **Prompt** (F4) from the List field in the Select Statement.

FileEditListsOptionsHelp

SAMPLE - Performance Select StatementRow 1 of 3 More: >

Command ==>Scroll ==> PAGE

Active

Report Interval

IncStartFromTo

ExcStopDD/MM/YYYYHH:MM:SS.THDD/MM/YYYYHH:MM:SS.TH

INCACTIVE15/12/200420/12/2004

IncField

Type

Value or Range

List

/ExcName+TypeValue/FromTo+List+Milliseconds

INCRESPONSE31000BTRAN

INCCPU501000

INCTRAN

\*\*\*\*\* End of list \*\*\*\*\*

F1=HelpF3=ExitF4=PromptF7=BackwardF8=ForwardF10=Actions

F11=RightF12=Cancel

Figure 369. Performance Select Statement

## List of Resource Lists

Resource Lists are a convenient way to specify values in Selection Criteria in your HDB Templates. To define a Resource List, select **Lists -> Resource Lists** from the action bar of the Performance Select Statement (see Figure 369). This will link to

the list of Resource Lists.

```
File Options Help
-----
Resource Lists                               Row 1 to 4 of 4
Command ==> NEW                               Scroll ==> 

Select to edit Resource List. Enter NEW command to define a new Resource List.

/  Name      Description                      Changed      ID
-  FINANCE   Finance Transactions             2005/01/03 12:27 JCH02
-  HQTERMS   Terminals at headquarters                 2005/01/02 08:57 DAM13
-  HQUSERS   Users at headquarters                     2005/01/05 10:49 SEC22
-  STOCK     Stock Transactions                         2005/01/05 16:57 DOC17
***** End of list *****
```

Figure 370. Resource Lists

This panel lists all the Resource Lists in the Repository and allows you to select one at a time to view or modify.

**Line Actions:** The following line actions can be entered against a Resource List:

- /** Display the selection list of line actions.
- E** Edit the Resource List.
- S** Select the Resource List (same as Edit).
- V** View the Resource List. This looks like the Edit panel but has no 'hold' on the data and has no Save capability.
- D** Delete the Resource List.

**Primary Commands:** The following primary commands are valid for this panel:

**NEW name**

This command displays the New Resource List window, where you have the option to initialize the resource list by selecting one of the sample resource lists included with CICS PA. See “Creating new Resource Lists” for information on how to proceed.

Also available from **File** in the action bar.

**SELECT name**

This command (or **S**) selects the specified Resource List for editing. If the Resource List does not exist, it is created as if the **NEW** command was used.

**SORT Name | Description | Changed | Id**

This command sorts the list of Resource Lists on the specified column. The default sort field is **Name**. The sort disregards upper and lower case, and is ascending for all but the Changed column. The sort order is retained only until Exit or another SORT command is issued.

**LOCATE string**

This command (or **L** or **LOC**) is used to locate an entry in the list based on the primary sort field. By default, LOCATE operates on the **Name** field. The string should be no longer than the primary sort field and not enclosed in quotes. The display will scroll to the entry which matches the string, or the entry preceding it if an exact match is not found.

## Creating new Resource Lists

The **NEW** command is used to define a new Resource List.

```

New Resource List
Command ==> _____
Specify the name of the new Resource List.
Name . . . ASSETS__
/ Initialize with a sample resource list

```

Figure 371. Specifying a new Resource List

Specify the name of the new Resource List then press **Enter** to edit. A Resource List name is 1-8 characters in ISPF member name format. The name must be unique within the Repository.

The new Resource List can be initialized by selecting one of the sample resource lists included with CICS PA. If you do not specify a sample name the resource list will be initialized empty.

## Specifying values in Resource Lists

The Resource List edit panel is displayed when, from the Resource Lists panel, you either:

- Create a new Resource List.  
Use the **NEW** command or action bar choice **File - New**.
- Select an existing Resource List.  
Enter line action **E** or **S** against a Resource List or use the **SELECT name** command.

Alternatively, you can enter line action **V** to display the Resource List view panel. Viewing a Resource List works in every way like Edit except there is no exclusive hold on the data and changes cannot be saved.

```

File Edit Confirm Options Help
-----
EDIT Resource List - BILLING          Row 1 to 2 of 2
Command ==> _____ Scroll ==> PAGE
Description . . . . Billing Transactions_____
Specify the Resource List values:
/
_ B001_____ B002_____ B003_____
- _____
***** End of list *****

```

Figure 372. Specifying Resource List values

Use this panel to specify values in a Resource List. The Resource List can then be reused many times in **Selection Criteria** in HDB Templates and Definitions.

Specify a description for your Resource List, up to 32 characters of text to describe its purpose. The description is initially set to **Resource List**.

Specify any number of values to be used in Include/Exclude statements in Selection Criteria. The values are free-format, typically names such as Transaction

Codes, User IDs, and IMS Subsystem IDs. Masking characters are supported: % for one and only one character and \* for many or none. The order of entries in the list is of no consequence to HDB processing.

Each input field is a separate value. Blank values are ignored.

It is usual to define Resource Lists that are homogenous. That is, a Resource List should specify values for testing the contents of one particular field. Define one Resource List for Transaction Codes, another for User IDs, and so on.

**Line Actions:** The following line actions are valid on this panel:

/	Display the menu of line actions
I	Insert a new row
R	Repeat this row
C	Copy this row
M	Move this row
A	Move/Copy after this row
B	Move/Copy before this row
D	Delete this row

**Primary Commands:** The following primary commands are valid for this panel:

**SAVE** This command is only available from Edit mode and saves any changes you have made.

Also available from **File** in the action bar.

**RESET**

This command (or **RES**) removes all outstanding line actions and deletes any blank rows.

Also available from **Edit** in the action bar.

**CONFIRM ON|OFF**

**CONFIRM ON** (or **CONFIRM**) instructs CICS PA to prompt for confirmation when you request to Cancel from the Resource List panel when there have been updates.

With **CONFIRM OFF**, Cancel requests are actioned immediately, discarding any changes.

This command changes the setting only for the current Edit/View session. On exit, it reverts to the default set by **Cancel Confirmation** in CICS PA Settings.

Also available from **Confirm** in the action bar.

---

## Define a Performance HDB

Defining a Performance HDB allows you to collect (load) and report historical performance data for later analysis. The definition alone does not cause any action by CICS PA.

Select option 2 **Define** from the HDB menu to define a new HDB.



File Systems Options Help

New HDB Definition

Command ==>

Specify new HDB definition options then press EXIT to save.

Name . . . . . CICSWEEK APPLID CICSPROD + Image

Qualifier . . . . . Explorer

Description . . . Production CICS Weekly History

Load Options:

Template . . . . . WEEKSUM +

Alert . . . . . +

Severity . . . . . +

Summary Interval (hh:mm:ss)

Selection Criteria:

Performance

Data Retention Period:

HDB: Years Months Weeks Days Hours

DB2: Years Months Weeks Days Hours

Data Set Allocation Settings:

DSN Prefix . . . . . CICS.PA.HISTORY

Management class . . . . . (Blank for default management class)

Storage class . . . . . (Blank for default storage class)

Volume serial . . . . . (Blank for system default volume)

Device type . . . . . (Generic unit or device address)

Data class . . . . . (Blank for default data class)

Space Units . . . . . (TRKS, CYLS)

Primary quantity . . . . . (In above units)

Secondary quantity . . . . . (In above units)

F1=Help F3=Exit F4=Prompt F7=Backward F8=Forward F10=Actions F12=Cancel

Figure 373. New HDB Definition

Specify the details of your new HDB:

**Name** The name of the HDB. A 1-8 character name in ISPF member name format. The name is unique within the Repository.

#### APPLID, Image

The optional CICS System (APPLID/Image) that owns the HDB.

HDB LOAD requests use this APPLID and associated SMF files (defined in System Definitions) to build the JCL deck. If not specified, you are prompted at submit time to specify the system.

The CICS System must be defined in System Definitions. To select one from a list, use **Prompt** (F4). See “Select a system (CICS APPLID)” on page 634 for an example of the list of systems. To link directly to System Definitions, use **Systems** in the action bar.

#### Qualifier

If Qualifier is specified, the value is used as the DB2 schema in place of the Database as specified in DB2 Settings. It is also incorporated into the DB2 table names:

*qualifier.CPA\_hdbname* for Performance HDBs

*qualifier.CPA\_stid* for Statistics HDBs

Qualifier is mandatory if Explorer is selected, and optional otherwise. If Qualifier and Explorer are both entered then details of this HDB will be included in the manifest the next time it is rebuilt for this qualifier.

You should rebuild the manifest when you add an eligible HDB, and also whenever the HDB is changed in a way that affects its eligibility for inclusion in the manifest. See “Maintain manifest” on page 686.

## Explorer

Select the Explorer option to make this HDB eligible for inclusion in the manifest. If you do this you must also specify a qualifier and, for a Performance HDB, a template that is valid for the CICS PA plug-in for CICS Explorer. Details of the DB2 associated with this HDB will be included in the manifest the next time it is rebuilt.

A manifest is a proprietary DB2 table that contains all the information required by the CICS PA plug-in to access and use historical data. It is a catalog of all the HDB DB2 tables that have the same qualifier and for which the Explorer indicator is set.

You should rebuild the manifest when you add an eligible HDB, and also whenever the HDB is changed in a way that affects its eligibility for inclusion in the manifest. See “Maintain manifest” on page 686.

## Description

The HDB description is free-format text that you can specify to help identify the purpose of the HDB.

## Template

The Template defines the type and format of the HDB. Before defining an HDB, you must first design a Template that defines the required information to be kept in the HDB data sets. In Figure 373 on page 651 we have specified a Summary Template WEEKSUM and HDB CICSWEEK inherits its attributes.

If you have selected the Explorer option, you must choose an internal template that has been predefined for use with the CICS PA-plug-in.

To select a Template from a list of defined Templates, use **Prompt** (F4). See “Select a Template” on page 655 for an example of the prompt list.

## Selection Criteria

HDBs have optional Selection Criteria that allows you to filter the CMF performance class records used to build the HDB. For example, the HDB only includes data for a particular application's transaction ids, such as TRAN=MY\*. Select to specify Selection Criteria.

Templates can also specify Selection Criteria. If the Template and HDB both have active Selection Criteria then both are checked and *both* must match for the record to be processed.

- **Template Selection Criteria** typically focuses on the type of data being recorded. For example, if your Template is monitoring File Control activity then its Selection Criteria can specify FCTOTAL>0 to include only transactions that used File Control services.
- **HDB Selection Criteria** typically focuses on the application targeted by the HDB. For example, if the HDB is for MY application then its Selection Criteria can specify TRAN = MY\* to include only transactions in MY application.

The resultant HDB will include data for transactions matching MY\* that uses File Control services.

### *Line Actions:*

- /      Display the selection list of line actions.
- S      Select (edit) the Selection Criteria. See “Performance Selection Criteria” on page 646 for information on specifying Selection Criteria.

**A** Activate the Selection Criteria so they are included for HDB processing. Selection Criteria can only be activated if you have specified at least one Select Statement and it is not excluded. An asterisk \* indicates they are active.

**D** Deactivate the Selection Criteria. Any you might have specified here will not be used in HDB processing.

**Alert** For HDBs that are based on a List template, this field specifies an alert definition to be used during the load. The loading of a List HDB that is defined with a Performance Alert definition results in the creation of an additional set of containers to store Alert records.

### **Severity**

This field controls the type of transaction records and alerts loaded into the HDB in the same way as in the Performance List report. You can use this option to focus the loaded data on specific transaction types.

#### **CRITICAL**

Only transactions with critical alerts are loaded.

#### **WARNING**

Only transactions with critical alerts and warning alerts are loaded.

**INFO** Only transactions with critical alerts, warning alerts, or informational alerts are loaded.

#### **ELIGIBLE**

Only transactions that are eligible for alert processing are loaded. Eligible transactions are those that have field values that match the Resource values in the Performance Alert Definition. All eligible transactions are loaded regardless of whether they generate an alert.

**ALL** All transactions are loaded regardless of whether they are eligible or whether they generate an alert. Use this option to load a general List HDB for normal reporting while also generating any associated alert, thus avoiding the need to create two separate HDBs.

### **Summary Interval**

Use this optional field to override the time interval defined in the template. This means that templates can be used in multiple HDBs that each require a different interval, thus avoiding the need to define and maintain HDB-specific templates.

### **Data Retention Period**

These fields separately specify the length of time that HDB data sets and associated DB2 table rows are kept before they expire. Typically:

- Summary HDBs need to keep their container data sets for many years for long-term trend analysis.
- List HDBs used for ad hoc reporting might only need to keep their container data sets for a couple of hours or days.

Specify each retention period as a whole number of years, months, weeks, days, or hours. Only one choice is allowed.

If the HDB container data sets are no longer required after their data has been exported to DB2, you can specify a retention period of 0 in any of the HDB periods to make the HDB data sets expire immediately.

Container data sets and DB2 data are deleted by **HDB Housekeeping** after they have passed their expiry date. If you do not specify a retention period, the corresponding HDB data sets or DB2 data will never expire.

Use **HDB Maintenance** to check container data set status or to alter the HDB or DB2 retention period.

### Data Set Allocation Settings

Data Set Allocation Settings specify the allocation attributes of the data sets that contain data for this HDB. CICS PA dynamically allocates container data sets at load time.

The settings are:

#### DSN Prefix

Specify the high level qualifier of the data sets that are dynamically allocated by the HDB LOAD process to contain the data.

The format of the data set name is:

*DSN-prefix.HDB-name.Dyyddd.Thhmmss.HDB*

where the DSN prefix is the data set name high level qualifier.

If an alert definition is specified, the format of the data set name for the associated performance alert data is:

*DSN-prefix.HDB-name.Dyyddd.Thhmmss.HPA*

#### Management class

For an SMS-managed data set, specify the name of the management class for a new data set. The storage administrator at your installation defines the names of the management classes you can specify.

If management class is not specified, but storage class is specified or defaulted, management class is derived from automatic class selection (ACS).

If management class is specified and storage class is not specified or derived, the DEFINE will fail. Note that if SMS is inactive and management class is specified, the DEFINE will fail.

#### Storage class

For an SMS-managed data set, specify the name of the storage class. The storage class replaces the storage attributes that are specified on the UNIT and VOLUME operand for non-SMS-managed data set. Use the storage class to specify the storage service level to be used by SMS for storage of the data set. The storage administrator at your installation defines the names of the storage classes you can specify. A storage class is assigned when either you specify a storage class, or an ACS routine selects a storage class for the new data set. Note that if SMS is inactive and storage class is specified, the DEFINE will fail.

#### Volume serial

The volume serial name of the DASD volume to contain the data set.

#### Device type

The generic or esoteric DASD device type of the data set, such as 3390 or SYSDA. This must represent a device type that is defined in the Eligible Device Table of the current processor as DASD.

### Data class

Specify the name of the data class for the data set. The data class provides the allocation attributes for the data set. The storage administrator at your installation defines the data class. However, you can override the parameters defined for a data class by explicitly specifying other attributes.

### Space Units

Select one of the following units:

**TRKS** Express data set size in tracks

**CYLS** Express data set size in cylinders

### Space quantities

Specify the **Primary** and **Secondary** allocation quantities in tracks or cylinders as indicated in the Space Units field. Express all quantities in decimal, not hexadecimal.

Specify allocation settings that satisfy your installation requirements. The size of container data sets is not critical. Typically you would specify a size that accommodates a single load request. For example, if you load data into the HDB daily, then 10 cylinders might be sufficient. However if CICS PA encounters an out-of-space condition (ABENDx37) during load, then it simply closes the data set and recommences loading in a new data set. You can decide to specify a larger size initially and adjust it later using **HDB Maintenance**.

## Select a Template

To specify the Template on which to define the HDB, press **Prompt** (F4) from the Template field to select from a list of predefined Templates.

HDB Templates

Row 1 to 4 of 4

Command ==> \_\_\_\_\_ Scroll ==> PAGE

Select a Template then press Enter.

Name	Type	Description
. CPULST	LIST	Transaction CPU Analysis
. APPLNM51	SUMMARY	Explorer HDB for Appl Context
. EXPLOR31	SUMMARY	Explorer HDB for CICS TS V3.1
. EXPLOR32	SUMMARY	Explorer HDB for CICS TS V3.2
. EXPLOR41	SUMMARY	Explorer HDB for CICS TS V4.1
. EXPLOR42	SUMMARY	Explorer HDB for CICS TS V4.2
. EXPLOR51	SUMMARY	Explorer HDB for CICS TS V5.1
. PRODSUM	SUMMARY	Summary HDB Template
. WEEKSUM	SUMMARY	Production CICS Weekly History

\*\*\*\*\* End of list \*\*\*\*\*

Figure 374. Select a Template

This is a list of HDB Templates in the current Repository.

To select a Template, enter line action **S** (or point-and-shoot).

---

## Load HDBs

After defining an HDB you can collect (load) the historical data.

Select option 3 **Load** from the HDB menu to generate JCL to load data into your HDB. The list of defined HDBs is presented.

Figure 375. Load HDBs

You can select multiple HDBs to load in succession.

Load creates the JCL that builds the HDBs. The Load process is handled via normal CICS PA command input. This allows multiple reports, extracts and HDBs to be created via a single pass of the SMF data.

Select the required HDB from the list to display the Load panel which is the same for a Load or a Summary HDB.

File Systems Options Help			
-----			
Load SUMMARY HDB CICSWEEK			
Command ==> _____			
Specify HDB load options then press Enter to continue submit.			
System Selection:		_____ Report Interval _____	
APPLID . . CICSPROD +		YYYY/MM/DD	HH:MM:SS.TH
Image . . _____ +		From 0 _____	09:00:00.00
Group . . _____ +		To 0 _____	16:30:00.00
DB2 Export Options:		Table Load Options	
_ Load DB2 Table		1 1. Resume	2. Replace
Include Clock Field Components		Summary Options	
1 1. Time and Count		_ Include Sums of Squares	
2. Time only			
3. Count only		Enter "/" to select option	
		/ Edit JCL before submit	
F1=Help F3=Exit F4=Prompt F6=Resize F10=Actions F12=Cancel			

Figure 376. Load Summary HDB

Specify the run-time options:

### System Selection

System Selection specifies the CICS system(s) whose data is to be loaded into the HDB. It is initialized to the CICS system APPLID that you specified during HDB definition.

You can specify any combination of APPLID, Image, or Group, but these must be defined in your System Definitions. If you do not specify System Selection here or in the Global Options, then you are prompted at run time to specify the System Selection. This will apply globally to all reports and extracts without their own System Selection. This is recommended as it allows you to run your Report Sets against any of your defined Systems. Press the **Prompt** key (F4) to select from a list of defined Systems, Images, or Groups. To modify your System Definitions, select **Systems** in the action bar.

Specify one of the following:

- A CICS APPLID. An APPLID that matches a defined System's name pattern is also allowed. For example, CICSP1 can be specified if CICSP\* is a defined system.
- An APPLID and an MVS Image. This identifies the MVS Image where your CICS system runs.
- An MVS Image. All CICS systems executing on this MVS Image is selected.
- An APPLID and Image combination plus a Group. This is useful for uniquely identifying a CICS system when there are multiple CICS systems with the same name defined.
- A Group alone. CICS PA will select all CICS APPLIDs defined to the Group. For example, for transaction grouping, or for systems that connect via IRC/MRO, ISC/APPC, or IPIC.

CICS PA uses the System Selection in JCL generation to build the APPLID(applid1,applid2,applid3,...) and INput(SMFIN001,SMFIN002,SMFIN003,...) operands, and corresponding //SMFINnnn DD statements.

System Selection can also be specified either:

- In Global Options. The report-level specification takes precedence over the global.
- At run time. The run-time System Selection overrides the Global Options and optionally the report-level specification.

In this example, CICS PA generates an APPLID(CICSPROD) operand in the command deck and includes DD statements for the SMF Files defined in System Definitions for CICSPROD.

### Report Interval

Specify the time range of data to be included in the HDB. You can specify an explicit date, such as 2004-12-05, or a relative date to indicate today (0), yesterday (-1), two days ago (-2), and so on. In Figure 376 on page 657 we have used a relative date of zero (0) to indicate that we are processing today's SMF data, from 9:00am to 4:30pm.

It is recommended that you specify relative dates if you want to use an automated job scheduler to run the load HDB JCL regularly. The JCL can be set up once and run daily without needing to change it.

### DB2 Export Options

To export the data to DB2 directly after loading it into the HDB, select the Load DB2 Table option. For details of the JCL that this option generates, see "Load JCL." (The remaining DB2 export options are only relevant if you select the Load DB2 Table option.)

The DB2 table to which you are exporting must already be defined.

To define a DB2 table, see "Creating DDL to define a DB2 table" on page 673.

If you select **2. Replace** for Table Load Options and the HDB load fails, then the result is an empty DB2 table.

### Edit JCL before submit

Select with a / to edit the JCL before submit. CICS PA will generate the JCL and display it in an ISPF Edit session. You can review or modify the JCL using the usual ISPF Edit commands and actions, or you can use the CREATE command to save the JCL in an external data set.

Then to submit the job, enter **SUBmit** in the Edit command line.

If this option is not selected, the generated JCL is not displayed and the job is submitted immediately.

After you have specified your Load options, press **Enter**. You are prompted to **Press ENTER to proceed with request**. This provides a last opportunity to review and change your load request.

## Load JCL

If you selected **Edit JCL before submit** then the Load HDB JCL is displayed in an edit session. Specify this option if you want to save the JCL in an automated job scheduler JCL library.



```

EDIT          JOHN.SPFTEMP1.CNTL                      Columns 00001 00072
Command ==> change '<unresolved>' 'CICSPROD.DAILY.CMF(0)' Scroll ==> CSR_
***** Top of Data *****
000001 //CICSPA JOB ,NOTIFY=&SYSUID
000002 /* CICS PA V5R2 HDB LOAD JCL
000003 //CICSPA EXEC PGM=CPAMAIN
000004 //STEPLIB DD DSN=CPA.V5R2M0.SCPALINK,DISP=SHR
000005 //CPAHDBRG DD DSN=CICSPROD.CICSPA.XYX.REPOSTRY,DISP=SHR
000006 //SYSPRINT DD SYSOUT=*
000007 /* SMF Input Files
000008 /* SMF Files that follow have unresolved DSNs
000009 /* SMF File for System=CICSPROD
000010 //SMFIN901 DD DSN=<unresolved>,DISP=SHR
000011 /* Command Input
000012 //SYSIN DD *
000013 * HDB=CICSWEEK
000014 * Description=Weekly CICS Transactions
000015 CICS PA SMFSTART(0,09:00:00.00),
000016 SMFSTOP(0,16:30:00.00)
000017 * HDB Load for System=CICSPROD
000018 CICS PA IN(SMFIN901),
000019 APPLID(CICSPROD),
000020 LINECNT(60),
000021 FORMAT(':', '/'),
000022 HDB(OUTPUT(HDBL0001),LOAD(CICSWEEK))
000023 /*

```

Figure 377. Edit JCL for Load Summary HDB

The SMF file data set name for system CICSPROD is unresolved. This indicates that the System Definition for CICSPROD does not have SMF files specified. Substitute the required SMF file data set name into the JCL.

The command deck specifies operands to load HDB CICSWEEK:  
HDB(OUTPUT(HDBL0001),LOAD(CICSWEEK))

Enter **SUBmit** in the command line to submit the job to run the load.

If you selected the **Load DB2 Table** option, then the JCL contains additional statements to export the data to DB2 after loading the HDB. If successful, the HDB load step writes the list of created HDB containers to a PDS member. After the HDB load step, an IEBGENER step copies the contents of the PDS member in-stream to the DB2 load utility DSNUTILB skeleton JCL. The following figure shows an example of this JCL.

```

//CICSPAHD JOB (ACCOUNT),'CICS PA HDB LOAD'
/* Delete HDB Container Data Set
//DELETE EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=*
//SYSIN DD *
DELETE CICSPA.HDB.CONTDSN
SET MAXCC=0
/*
/* CICSPA V5R1 Report JCL
//CICSPA EXEC PGM=CPAMAIN
//STEPLIB DD DISP=SHR,DSN=CPA.SCPALINK
//CPAHDBRG DD DISP=SHR,DSN=CPA.XYX.REPOSTRY
//CPAHDBCD DD DSN=CICSPA.HDB.CONTDSN,
// DISP=(NEW,CATLG),SPACE=(CYL,(1,1,10))
//SYSPRINT DD SYSOUT=*
/* SMF Input Files
//SMFIN001 DD DISP=SHR,DSN=PRODA.SMF.G4817V00
/* Command Input
//SYSIN DD *
* REPORT SET =HDBXDEMO
* Description=CICS PA Report Set
CICSPA SMFSTART(2012/12/12,00:00:00.00),
SMFSTOP(2012/12/12,22:00:00.00)
* REPORTS FOR SYSTEM=CICSPROD
* DESCRIPTION=HDB EXPORT DEMO
CICSPA IN(SMFIN001),
APPLID(CICSPROD),
LINECNT(60),
FORMAT(' ','/'),
PRECISION(4),
HDB(OUTPUT(HDBL0001),LOAD(DAILYPER))
/*
/*
//CPADDCPY EXEC PGM=IEBGENER,COND=(8,LT,CICSPA)
//SYSPRINT DD SYSOUT=*
//SYSIN DD DUMMY
//SYSUT2 DD SYSOUT=(*,INTRDR)
//SYSUT1 DD DATA,DLM=$$
//CICSPAHD JOB (ACCOUNT),'CICSPA HDB LOAD'
//DSNUPROC EXEC PGM=DSNUTILB,REGION=0M,
// PARM='DB2P'
//STEPLIB DD DISP=SHR,DSN=DB2.PROD.SDSNLOAD
// DD DISP=SHR,DSN=DB2.PROD.SDSNEXIT
//SYSPRINT DD SYSOUT=*
//UTPRINT DD SYSOUT=*
//SYSUDUMP DD SYSOUT=*
//SYSUT1 DD UNIT=SYSDA,SPACE=(4000,(20,20),,,ROUND)
//SORTOUT DD UNIT=SYSDA,SPACE=(4000,(20,20),,,ROUND)
//SYSIN DD *
LOAD DATA RESUME YES
INTO TABLE CPADB.CPA_DAILYPER (
START_DATE POSITION(1) DATE EXTERNAL(10),
.
.
.
)
/*
$$
// DD DISP=SHR,DSN=CICSPA.HDB.CONTDSN(DAILYPER)

```

Figure 378. JCL for HDB load followed by export to DB2

- 1** To ensure integrity of the data loaded into DB2, the data set to which the HDB Load writes HDB container data set names is deleted at the start of every HDB Load job that includes the DB2 table load.

- 2 The HDB Load step writes the list of created HDB container data set names (formatted as DD cards) to a member in the partitioned data set '&SYSUID.CICSPA.HDB.CONTDSN', where &SYSUID is the user ID of the user generating the JCL and the member name is the name of the HDB being loaded. For performance alert data that is loaded for a List HDB, the HDB container data set names are written to a member in the partitioned data set '&SYSUID.CICSPA.HPA.CONTDSN'.

If the HDB Load fails to create containers (due to an error, or because no records were selected), then this PDS member will contain the single DD card:

```
//SYSREC DD DUMMY
```

This card is used as input to the DB2 Load Utility. If the DB2 table load option REPLACE is selected, then the result is an empty DB2 table. This DUMMY card is required to avoid the IEBGENER job step error failing the whole job. This is particularly important in cases where the job loads multiple DB2 tables.

- 3 The IEBGENER job step inserts the contents of the PDS member (generated by the earlier HDB Load step) in-stream, for use by the DB2 Load Utility (DSNUTILB).

The IEBGENER job step will not be submitted if the HDB Load step (ddname CICSPA) terminates with a return code greater than 8. This ensures that DB2 table loads are submitted in cases where one or more HDB Loads were successful while others were not. A return code greater than 8 indicates a serious error that is likely to affect the whole job.

## Load Recap report

Successful completion of the Load request will generate a Recap report.

The Recap report provides details about the HDB Load including a list of the

V5R2M0

CICS Performance Analyzer  
HDB Load Recap Report

HDBL0001 Printed at 9:28:48 12/13/2012 Data from 09:02:00 12/12/2004 to 16:29:00 12/12/2004 Page 1

LOAD requested for HDB: CICSWEEK Repository DSN: CICSPROD.CICSPA.XYX.REPOSTRY

The following Container(s) were created and loaded:

Container DSN: CICSPA.HISTORY.CICSWEEK.D12347.T092846.HDB	No of Records: 54,567
Start Time Stamp: 2012-12-12-09.00.00	End Time Stamp: 2012-12-12-16.00.00

LOAD process complete.

Figure 379. HDB Load Recap report

container data sets created by the Load process. In this example, CICS PA created container data set CICSPA.HISTORY.CICSWEEK.D12347.T092846.HDB. It contains 54,567 records for the period 00:00am to 10:00pm on December 12, 2012.

---

## HDB Reporting

After you have loaded data into an HDB it is then eligible for reporting.

Select option 4 **Report** from the HDB menu to display a list of HDBs for reporting.

File Options Help					
-----			HDB Reporting	Row 1 to 5 of 5	
Command ==> _____			Scroll ==> CSR_		
Select to run report.					
Name	Type	Description	Changed	ID	
S	CICSDAY	LIST	Today's CICS Transactions	2004/12/11 00:00	CICSPA
S	CICSWEEK	SUMMARY	Weekly CICS Transactions	2004/12/11 00:00	CICSPA
-	CPUTREND	SUMMARY	Transaction CPU Usage Trend	2004/12/11 00:00	CICSPA
-	PRODRESP	SUMMARY	Production Transaction Response	2004/12/11 00:00	CICSPA
-	FCHIST	SUMMARY	File Request History	2004/12/11 00:00	CICSPA
***** End of list *****					
F1=Help F3=Exit F7=Backward F8=Forward F10=Actions F12=Cancel					

Figure 380. HDB reporting

Enter line action **S** to select an HDB for reporting.

You can select multiple HDBs to report in succession.

**SORT** and **LOCATE** commands are available to help you work with the list of HDBs.

If you select a Performance (List or Summary) HDB, CICS PA prompts you to specify run-time options, then builds the JCL to run the report against your HDB.

If you select a Statistics HDB, CICS PA prompts you to choose between online reporting or Statistics Alert batch reporting.

## Run List HDB report

Select the HDB for reporting. The run-time prompt panel is displayed. This is an example of a request for a List HDB report.

File Options Help	
-----	
Run LIST HDB Report - CICSDAY	
Command ==> _____	
Specify Report request options then press Enter to continue submit.	
Report Format:	----- Report Interval -----
Report Form . . _____ +	YYYY/MM/DD HH:MM:SS.TH
	From 2010/04/06 _____
	To 2010/04/07 _____
Reporting Options:	
Precision . . . . 4 (4-6)	
Alert Severity _____ +	
Enter "/" to select option	
/ Edit JCL before submit	
HDB contains data from 2010/04/07 09:38 to 2010/04/07 09:44.	
F1=Help F3=Exit F4=Prompt F6=Resize F10=Actions F12=Cancel	

Figure 381. Run List HDB report

This panel is displayed before CICS PA generates the JCL to run the report and shows the time period spanned by the data in the HDB.

Optionally, specify the following run-time options:

### Report Form

The name of a Report Form to be used to tailor the format and content of the HDB report. The Report Form must be a compatible type to the HDB. For a List HDB, either a LIST or LISTX Report Form. To select the name from a list of compatible Report Forms, press **Prompt** (F4).

CICS PA JCL generation translates the Report Form specification into the FIELDS operand.

If a Report Form is not specified, a report showing all fields in the HDB is produced.

### Precision

The precision of numeric fields. Numeric fields can be formatted to either 4, 5, or 6 decimal places. The default is 4.

- 4 decimal places is 0.0001 precision
- 5 decimal places is 0.00001 precision
- 6 decimal places is 0.000001 microsecond precision

This option generates the PRECISION(n) global operand.

### Alert Severity

The minimum severity level for reporting or extracts:

#### CRITICAL

Only transactions with critical alerts are reported, according to the CRITICAL threshold values specified in the Performance Alert Definition. This option only applies to the List report and extract.

#### WARNING

Only transactions with critical and warning alerts are reported, according to the CRITICAL and WARNING threshold values specified in the Performance Alert Definition. This option only applies to the List report and extract.

**INFO** Only transactions with Critical, Warning or Informational alerts are reported, according to the CRITICAL, WARNING, and INFO threshold values specified in the Performance Alert Definition. This option only applies to the List report and extract.

#### ELIGIBLE

Only transactions that are eligible for alert processing are reported. Eligible transactions are those that have field values that match the Resource values defined in the Performance Alert Definition. All eligible transactions are reported regardless of whether they generate an alert.

#### ALL or blank

All transactions are reported regardless of whether they are eligible or whether they generate an alert.

### Report Interval

Specify a date/time range or a *time slot* (times only) to filter the HDB input data based on the SMF record time stamp. HDB records with a time stamp within the specified From–To interval are processed by CICS PA, otherwise they are ignored.

**Note:** Do not confuse this with the Selection Criteria From–To report intervals which apply to transaction start and stop times.

The From–To date and time fields are all optional. They are blank initially (for no filtering), but thereafter display the reporting period that was previously saved.

**Date** is either a calendar date in your preferred format or a relative date. **Time** is a time-of-day. (The same edit rules apply as for the Selection Criteria Report Interval.)

Relative dates are specified as 0, -1, -2,... to signify a date relative to the current date. 0 represents today, -1 yesterday, -2 two days ago, and so on. If both Start and Stop dates are specified, they must be in the same format.

For a date/time range:

- Either From or To can be omitted to indicate that the range is open-ended.
  - If From is omitted, it defaults to the first input record
  - If To is omitted, it defaults to the end of file.
- If From date is specified with no time, the start of day is assumed.  
If To date is specified with no time, the end of day is assumed.

For a time slot, both times must be present with no dates to signify the same time slot every day. The times can span midnight.

The specified date/time range is included in the generated JCL under the //SYSIN DD statement:

```
CICSPA SMFSTART(-nn|yyy/mm/dd, hh:mm:ss.th),  
        SMFSTOP(-nn|yyy/mm/dd, hh:mm:ss.th)
```

### Edit JCL before submit

Select with a / to edit the JCL before submit. CICS PA will generate the JCL and display it in an ISPF Edit session. You can review or modify the JCL using the usual ISPF Edit commands and actions, or you can use the CREATE command to save the JCL in an external data set.

Then to submit the job, enter **SUBmit** in the Edit command line.

If this option is not selected, the generated JCL is not displayed and the job is submitted immediately.

When you have specified your report options, press **Enter** to continue submit. You are prompted to **Press ENTER to proceed with request**. This provides a last opportunity to review and change your report request.

### Select a Report Form

To tailor the format of the HDB report, select a Report Form. Press **Prompt** (F4) from the Form field on the Run Report panel. Only Forms of compatible type are listed. The following example shows a list of available List Report Forms for a List HDB report.

```

File  Help
-----
Report Forms          Row 1 to 3 of 3
Command ==>          Scroll ==> PAGE

Select a Report Form then press Enter.

  Name      Type      Description
.  LISTFRM1 LIST      List Report Form
.  RESPLIST LIST      List Report Form
S  TRANLIST LIST      List Report Form
***** End of list *****

```

Figure 382. Select a Report Form (LIST Example)

This panel displays the Report Forms defined in the current Report Forms data set. Only Report Forms of a compatible type to the type of HDB are presented:

List HDB - LIST Form  
Summary HDB - SUMMARY Form

To select a Report Form, enter line action S (or point-and-shoot).

## Run Performance Summary HDB report

Select the required HDB for reporting and the run-time prompt panel is displayed. This is an example of a request for a Summary HDB report.

```

File  Options  Help
-----
Run SUMMARY HDB Report - CICSWEEK
Command ==>

Specify Report request options then press Enter to continue submit.

Report Format:          ----- Report Interval -----
Report Form  . .      +          YYYY/MM/DD  HH:MM:SS.TH
                               From 2004/12/07 09:00:00.00
                               To   2004/12/07 16:00:00.00

Processing Options:
Time Interval . . . 00:01:00
Totals Level  . . . 8 (blank or 0-8)
Precision . . . . . 6

Enter "/" to select option
/ Edit JCL before submit

HDB contains data from 2004/12/07 09:00 to 2004/12/07 16:00.

F1=Help  F3=Exit  F4=Prompt  F6=Resize  F10=Actions  F12=Cancel

```

Figure 383. Run Summary HDB report

This panel is displayed before CICS PA generates the JCL to run the report and shows the time period spanned by the data in the HDB.

The run-time options are the same as those that apply to the List HDB report (see “Run List HDB report” on page 662), with the following additional options:

### Time Interval

Specify an optional Time Interval when reporting Summary HDBs.

Data in a Summary HDB is already summarized by the interval that was used to load the data. This is the value specified in the HDB or, if Time Interval was not specified in the HDB, the value defined in the Template.

You can further summarize the data by specifying a multiple of the interval that was used to load the data. Specify a value in the range 00:00:01 (1 second) to 24:00:00 (24 hours). For example, specify 00:15:00 if you want to summarize transaction activity over 15 minute intervals. If you are reviewing many days worth of data then you might specify 24:00:00 (24 hours) so that you can view the daily trend. In this example the Interval has been changed to 1 hour.

**Notes:**

- If you specify a reporting interval that is equal to or less than the interval that was used to load the data, the report or extract uses the data as-is, without further summarization.
- If you do not specify a reporting interval it defaults to the interval that was used to load the data, unless that value is less than 1 minute, in which case the reporting interval is set to 1 minute.

A time interval of less than one hour must fit evenly into the hour. CICS PA will round it down to the nearest interval that aligns to the hour. For example, 1.35 is reduced to 00:01:30 minutes which will produce 40 interval report lines for each hour of data.

A time interval of more than one hour must fit evenly into the day. CICS PA will round it down to the nearest interval that aligns to the day. For example, 10.30.23 is reduced to 08:00:00 hours which will produce 3 interval report lines for each day of data.

Minutes take precedence for an abbreviated entry. For example:

1 becomes 00:01:00

1.1 becomes 00:01:00 (rounded down from 00:01:01)

1.1.1 becomes 01:00:00 (rounded down from 01:01:01)

This option generates the INTERVAL(hh:mm:ss) operand.

**Totals Level**

This option applies only to the Summary report. Leave blank if you do not want to include total lines in the report. This generates the NOTOTALS operand.

Specify a number between 1 and 8 to accumulate subtotals for up to 8 sort fields, print the subtotals when the sort field changes, and print a grand total at the end of the report. This generates the TOTALS(n) operand where n is a value between 1 and 8. Default: 8

Specify 0 for no subtotals, but print only the grand total. This generates the TOTALS(0) operand.

**Precision**

The precision of numeric fields. Numeric fields can be formatted to either 4, 5, or 6 decimal places. The default is 4.

- 4 decimal places is 0.0001 precision
- 5 decimal places is 0.00001 precision
- 6 decimal places is 0.000001 microsecond precision

This option generates the PRECISION(n) global operand.

When you have specified your Report options, press **Enter** to continue submit. You are prompted to **Press ENTER to proceed with request**. This provides a last opportunity to review and change your report request.



## Performance HDB report JCL

If you selected **Edit JCL before submit** then the Report HDB JCL is displayed in an edit session.

```
EDIT          JCH.SPFTEMP2.CNTL                      Columns 00001 00072
Command ==> SUB                                     Scroll ==> CSR_
***** ***** Top of Data *****
000001 //CICSPA  JOB ,NOTIFY=&SYSUID
000002 /**  CICS PA V5R2 HDB Report JCL
000003 //CICSPA  EXEC PGM=CPAMAIN
000004 //STEPLIB DD DISP=SHR,DSN=CPA.V5R2M0.SCPALINK
000005 //CPAHDBRG DD DISP=SHR,DSN=CICSPROD.CICSPA.XYX.REPOSTRY
000006 //SYSPRINT DD SYSOUT=*
000007 /** Command Input
000008 //SYSIN DD *
000009 * HDB=CICSWEEK
000010 * Description=Weekly CICS Transactions
000011          CICSPA SMFSTART(2004/12/07,09:00:00.00),
000012          SMFSTOP(2004/12/07,16:00:00.00)
000013          CICSPA NOAPPLID,
000014          LINECNT(60),PRECISION(4),
000015          FORMAT(':','/'),
000016          HDB(OUTPUT(HDBR0001),REPORT(CICSWEEK),
000017          NOTOTALS,
000018          INTERVAL(01:00:00))
000019 /*
000020 /** HDB Container Data Sets. HDB Report processing does not require
000021 /** these data sets to be included in the JCL as they are dynamically
000022 /** allocated when required. They are included:
000023 /** 1) for your reference
000024 /** 2) to ensure that all required data sets are cataloged
000025 /** 3) to allow DFHSM to recall required data sets up front
000026 //HDB00001 DD DISP=SHR,DSN=CICSPA.HISTORY.CICSWEEK.D03219.T092846.HDB
***** ***** Bottom of Data *****
```

Figure 384. Edit JCL for Summary HDB report

The HDB container data sets are listed at the end of the JCL. They are not required here because the CICS PA batch reporting utility will dynamically allocate the data sets when they are required. CICS PA adds the data sets into the JCL primarily for the purpose of DFHSM recall, if required. It is more efficient to recall data sets in the JCL (where job initiation can recall migrated data sets en masse) rather than one at a time when dynamically allocated.

The command deck specifies operands to report against HDB CICSWEEK:  
HDB(OUTPUT(HDBR0001),REPORT(CICSWEEK))

Enter **SUBmit** in the command line to submit the job to run the report.

## Performance HDB report output

Successful completion of the Report request will generate an HDB Summary report.

HDBR0001 Printed at 12:03:45 11/12/2013 Data from 09:00:00 12/07/2004 to 16:00:00 12/07/2004

Page 1

Start Interval	MVS	APPLID	Tran	#Tasks	Avg Response Time	Avg Dispatch Time	Avg User CPU Time	Avg Suspend Time	Avg DispWait Time	Avg FC Wait Time	Avg IR Wait Time	Avg SC24UWHM	Avg SC31UWHM
2004/12/07 09:00	MVS1	CICSPROD	ABRA	1	.2729	.0009	.0006	.2720	.0000	.0000	.2719	0	0
2004/12/07 09:00	MVS1	CICSPROD	ASIX	2	.2184	.0009	.0006	.2175	.0000	.0000	.2175	0	0
2004/12/07 09:00	MVS1	CICSPROD	ATRA	1	1.6067	.0008	.0005	1.6058	.0000	.0000	1.6057	0	0
2004/12/07 09:00	MVS1	CICSPROD	BLIX	1	.0845	.0008	.0005	.0836	.0000	.0000	.0835	0	0
2004/12/07 09:00	MVS1	CICSPROD	CRVI	1	.0004	.0004	.0000	.0000	.0000	.0000	.0000	0	0
2004/12/07 09:00	MVS1	CICSPROD	CSMI	2	.0107	.0006	.0004	.0101	.0000	.0000	.0101	0	0
2004/12/07 09:00	MVS1	CICSPROD	DEBT	1	.0038	.0006	.0004	.0032	.0000	.0000	.0031	0	0
2004/12/07 09:00	MVS1	CICSPROD	OPIC	1	.0236	.0008	.0006	.0227	.0000	.0000	.0227	0	0
2004/12/07 09:00	MVS1	CICSPROD	RESU	1	.0341	.0009	.0006	.0332	.0000	.0000	.0332	0	0
2004/12/07 09:00	MVS1	CICSPROD	RGYM	1	.0056	.0010	.0007	.0046	.0000	.0000	.0045	0	0
2004/12/07 09:00	MVS1	CICSPROD	T050	2	.0296	.0009	.0006	.0288	.0000	.0000	.0286	0	0
2004/12/07 09:00	MVS1	CICSPROD	T096	1	.0398	.0012	.0005	.0386	.0001	.0000	.0385	0	0
2004/12/07 09:00	MVS1	CICSPROD	XYLO	1	.0010	.0009	.0001	.0001	.0000	.0000	.0000	11600	16368

Figure 385. HDB Summary report (no totals)

## Run Statistics HDB Alerts report

Select the required statistics HDB, and then select **Request batch Alert report** from the pop-up menu. The run-time prompt panel is displayed. This is an example of a request for a Statistics HDB Alerts report.

File Options Help

-----

Run Statistics HDB Alerts Report - TGDEVT

Command ==> \_\_\_\_\_

Specify run options then press Enter.

Alert . . . . . \_\_\_\_\_ +

----- Report Interval -----

YYYY/MM/DD HH:MM:SS.TH

From 2004/12/07 09:00:00.00

To 2004/12/07 16:00:00.00

Report Sorted By:

Filter Criteria:

APPLID

Type . . . EOD \_ USS \_ RRT

\_ List \_ Summary

\_ INT \_ REQ

Alert

\_ List \_ Summary

Enter "/" to select option

\_ Collection Time

/ Edit JCL before submit

\_ Statistics Interval

\_ Resource

HDB contains data from 2004/12/07 09:00 to 2004/12/07 16:00.

Figure 386. Run Statistics HDB Alerts report

This panel is displayed before CICS PA generates the JCL to run the report and shows the time period spanned by the data in the HDB.

The Statistics HDB and Statistics Alert definition that you use for this report must be stored in the same Repository. (An HDB reporting job can specify only one Repository.)

Most of the options are similar to the equivalent panel for requesting a Statistics Alert report in a Report Set, against SMF files. For details, see "Statistics Alert reports" on page 226.

The **Report Sorted By** option offers the same choices as the corresponding option in a Report Set, except that here you can select more than one choice: each

selection generates a separate report. In a Report Set, you can request multiple Statistics Alert reports, but each request can specify only a single sort order.

The other options are:

### Report Interval

Specify a date/time range or a *time slot* (times only) to filter the HDB input data based on the SMF record time stamp. HDB records with a time stamp within the specified From–To interval are processed by CICS PA, otherwise they are ignored.

**Note:** Do not confuse this with the Selection Criteria From–To report intervals which apply to transaction start and stop times.

The From–To date and time fields are all optional. They are blank initially (for no filtering), but thereafter display the reporting period that was previously saved.

**Date** is either a calendar date in your preferred format or a relative date. **Time** is a time-of-day. (The same edit rules apply as for the Selection Criteria Report Interval.)

Relative dates are specified as 0, -1, -2,... to signify a date relative to the current date. 0 represents today, -1 yesterday, -2 two days ago, and so on. If both Start and Stop dates are specified, they must be in the same format.

For a date/time range:

- Either From or To can be omitted to indicate that the range is open-ended.
  - If From is omitted, it defaults to the first input record
  - If To is omitted, it defaults to the end of file.
- If From date is specified with no time, the start of day is assumed.
  - If To date is specified with no time, the end of day is assumed.

For a time slot, both times must be present with no dates to signify the same time slot every day. The times can span midnight.

The specified date/time range is included in the generated JCL under the //SYSIN DD statement:

```
CICSPA SMFSTART(-nn|yyyymm/dd, hh:mm:ss.th),  
        SMFSTOP(-nn|yyyymm/dd, hh:mm:ss.th)
```

### Edit JCL before submit

Select with a / to edit the JCL before submit. CICS PA will generate the JCL and display it in an ISPF Edit session. You can review or modify the JCL using the usual ISPF Edit commands and actions, or you can use the CREATE command to save the JCL in an external data set.

Then to submit the job, enter **SUBmit** in the Edit command line.

If this option is not selected, the generated JCL is not displayed and the job is submitted immediately.

When you have specified your Report options, press **Enter** to continue submit. You are prompted to **Press ENTER to proceed with request**. This provides a last opportunity to review and change your report request.

## Run Statistics HDB List report

Select the required statistics HDB, and then select **Request batch List report** from the pop-up menu. The run-time prompt panel is displayed. This is an example of a request for a Statistics HDB List report.

```
File Options Help
-----
Run Statistics HDB List Report - SBHSTAT1
Command ==> _____

Specify run options then press Enter to continue submit.

Form . . . . . SBSFM1 +
                                     More: +
                                     Report Interval
From 2013/12/01 22:00:00.00
To 2013/12/02 06:00:00.00

Selection Criteria:
Alert . . . . . +
Severity . . . . . +
_ Include Severity column

Interval Type . . / EOD / INT / USS / REQ / RRT

Enter "/" to select option
/ Edit JCL before submit

F1=Help F3=Exit F4=Prompt F6=Resize F10=Actions F12=Cancel
```

Figure 387. Run Statistics HDB List report

This panel is displayed before CICS PA generates the JCL to run the report and shows the time period spanned by the data in the HDB.

The Statistics HDB, Statistics Form, and Statistics Alert definitions that you use for this report must be stored in the same Repository. (An HDB reporting job can specify only one Repository.)

Most of the options are similar to the equivalent panel for requesting a Statistics List report in a Report Set, against SMF files. For details, see “Statistics List reports” on page 221.

The other options are:

### Report Interval

Specify a date/time range or a *time slot* (times only) to filter the HDB input data based on the SMF record time stamp. HDB records with a time stamp within the specified From–To interval are processed by CICS PA, otherwise they are ignored.

**Note:** Do not confuse this with the Selection Criteria From–To report intervals which apply to transaction start and stop times.

The From–To date and time fields are all optional. They are blank initially (for no filtering), but thereafter display the reporting period that was previously saved.

**Date** is either a calendar date in your preferred format or a relative date. **Time** is a time-of-day. (The same edit rules apply as for the Selection Criteria Report Interval.)

Relative dates are specified as 0, -1, -2,... to signify a date relative to the current date. 0 represents today, -1 yesterday, -2 two days ago, and so on. If both Start and Stop dates are specified, they must be in the same format.

For a date/time range:

- Either From or To can be omitted to indicate that the range is open-ended.
  - If From is omitted, it defaults to the first input record
  - If To is omitted, it defaults to the end of file.
- If From date is specified with no time, the start of day is assumed.
  - If To date is specified with no time, the end of day is assumed.

For a time slot, both times must be present with no dates to signify the same time slot every day. The times can span midnight.

The specified date/time range is included in the generated JCL under the //SYSIN DD statement:

```
CICSPA SMFSTART(-nn|yyy/mm/dd, hh:mm:ss.th),  
        SMFSTOP(-nn|yyy/mm/dd, hh:mm:ss.th)
```

#### **Edit JCL before submit**

Select with a / to edit the JCL before submit. CICS PA will generate the JCL and display it in an ISPF Edit session. You can review or modify the JCL using the usual ISPF Edit commands and actions, or you can use the CREATE command to save the JCL in an external data set.

Then to submit the job, enter **SUBmit** in the Edit command line.

If this option is not selected, the generated JCL is not displayed and the job is submitted immediately.

When you have specified your Report options, press **Enter** to continue submit. You are prompted to **Press ENTER to proceed with request**. This provides a last opportunity to review and change your report request.

---

## **HDB Export to DB2 tables**

After you have loaded data into an HDB it is then eligible for export to DB2.

**Summary HDB** data is the most commonly used for performance reporting. It is already summarized by time.

**List HDB** data is typically used to drill down to isolate performance problems or for ad-hoc reporting. Take care when exporting List HDBs into DB2. The volume of data can be high, resulting in a table that is too large to manage. If an alert definition is specified, the associated performance alert data is stored in separate container data sets which need to be loaded, exported, and managed separately.

Select option 5 **Export** from the HDB menu to export HDB data into a DB2 table.

File Explorer Options Help					
HDB Exporting				Row 1 to 5 of 5	
Command ==>				Scroll ==>	CSR
Select to export HDB to DB2.					
Name	Type	Description	Changed	ID	
CICSDAY	LIST	Today's CICS Transactions	2004/12/11 00:00	CICSPA	
S CICSWEEK	SUMMARY	Weekly CICS Transactions	2004/12/11 00:00	CICSPA	
CPUTREND	SUMMARY	Transaction CPU Usage Trend	2004/12/11 00:00	CICSPA	
PRODRESP	SUMMARY	Production Transaction Response	2004/12/11 00:00	CICSPA	
FCHIST	SUMMARY	File Request History	2004/12/11 00:00	CICSPA	
***** End of list *****					
F1=Help	F3=Exit	F7=Backward	F8=Forward	F10=Actions	F12=Cancel

Figure 388. HDB exporting

## Loading data from multiple CICS releases into DB2

Performance (CMF) and Statistics fields are often added or removed in a new release of CICS TS or CICS TG. You can define a job to create DB2 tables and load data from an HDB based on a specified CICS version. However, this job might be incompatible with the fields in another release of CICS.

If your site is running multiple releases of CICS, not all fields will be in all releases. Since DB2 table definitions are release specific, you must define and load the data into release-specific tables:

- Performance HDB: Define release-specific HDBs and load them using Selection Criteria on the RELEASE field to selectively load data into the HDB based on the release number.
- Statistics HDB: For statistics types (STIDs) in which the fields are different between releases, change the DB2 table load command to include a WHEN (44) = 'vrm' statement to load the release-specific records into the table. (44 is the offset to the VRM field in the HDB record.)

The Statistics Extract feature can also be used instead of HDBs to export the data to DB2.

## Export HDB

Select the required HDB to display its list of container data sets.

File Options Help			
Export SUMMARY HDB - CICSWEEK		Row 1 to 1 of 1	
Command ==>		Scroll ==>	CSR
Select to export HDB data sets to DB2.			
Name . . : CICSP1			
Data Set Name	Start	Volume	
S CICSPA.HISTORY.CICSWEEK.D03219.T092846.HDB	2004/12/07 09:00:00	USER01	
***** End of list *****			
F1=Help	F3=Exit	F7=Backward	F8=Forward F10=Actions F12=Cancel

Figure 389. Export HDB

This is the list of container data sets in the HDB.

Enter line action **S** to select one or more container data sets to export to DB2.

Enter line action **T** to define the DB2 table without selecting the HDB and container. See “Creating DDL to define a DB2 table” for details.

## Export HDB Data Set

CICS PA can export several container data sets at a time. Select the data sets that contain the data in the required time range to be exported into DB2.

FileOptionsHelp

Export HDB Data Set

Command ==>

HDB Name : CICSWEEK  
Data Set Name : CICS.PA.HISTORY.CICSWEEK.D03219.T092846.HDB

Select option  
1 1. Create DDL to define table 2. Load data into table

Create OptionsLoad Options  
Create Database1 1. Resume  
Create Storage Group2. Replace

DB2 Settings:  
DB2 Subsystem ID : DB2P  
DSNTIAD Plan Name : DSNTIAD  
DB2 Load Library : 'DB2.V910.SDSNLOAD'  
DB2 Exit Library : 'DB2.V910.SDSNEXIT'  
DB2 RUNLIB Library : 'DB2.V910.RUNLIB.LOAD'  
Database : CICS.PA Storage Group : SYSDEFLT  
VCAT Catalog name : USER Volume : DA0001  
Allocation: Primary 20 Secondary : 20

Include Clock Field ComponentsSummary Options  
1 1. Time and Count / Include Sums of Squares  
2. Time only  
3. Count only

F1=Help F3=Exit F7=Backward F8=Forward F10=Actions F12=Cancel

Figure 390. Export HDB Data Set

Exporting HDB data into DB2 is a two-step process, controlled by the **Select Option**.

1. Create the DDL to define the DB2 table. See “Creating DDL to define a DB2 table.”
2. Load the data. “Loading data into the DB2 table” on page 675.

You can then use your favorite DB2 query tool to analyze the data. Chapter 24, “Analyzing HDB DB2 Export data,” on page 699

### Creating DDL to define a DB2 table

JCL is built that contains the CREATE TABLE statement required to define the DB2 table for this HDB data set. The HDB name is used as the table name, however you can change this by editing the JCL.

The options are:

#### Create Options

Select **Create Database** if you want the CREATE TABLE statement to be preceded by a CREATE DATABASE statement to define the DB2 database. You might need to ask your DB2 administrator to do this for you if you do not have sufficient authority.

Select **Create Storage Group** if you want the CREATE TABLE statement to be preceded by a CREATE STOGROUP statement to define the DB2 Storage Group.

### **DB2 Settings**

Specify the required DB2 settings for your environment. CICS PA only provides a basic facility to load data into DB2. It does not provide any management or reporting capabilities once the data is in DB2.

If you omit any DB2 settings, CICS PA will insert parameter markers such as **<setting>** in the JCL stream.

CICS PA uses DSNTIAD, the sample Dynamic SQL program to run the DDL that defines the table.

The options are:

#### **DB2 Subsystem ID**

The DB2 Subsystem ID to be used to for the Export function.

#### **DSNTIAD Plan Name**

The Plan name for the dynamic SQL program (DSNTIAD), for example DSNTIA91.

#### **DB2 Load Library**

The DB2 SDSNLOAD Load Library data set name.

#### **DB2 Exit Library**

The DB2 SDSNEXIT Exit Library data set name.

#### **DB2 RUNLIB Library**

The DB2 RUNLIB.LOAD Application Load Library data set name.

#### **Database**

The DB2 Database name that is to contain the tables.

**Note:** The Database name will be replaced by the qualifier if a Qualifier has been specified in the HDB definition.

#### **Storage Group**

The DB2 Storage Group name for the DB2 Table Spaces.

#### **VCAT Catalog name**

Identifies the integrated catalog facility catalog for the storage group.

#### **Volume**

Defines the volume of the storage group.

#### **Primary Allocation**

Specifies the minimum primary space allocation (PRIQTY) for DB2-managed data sets.

#### **Secondary Allocation**

Specifies the minimum secondary space allocation (SECQTY) for DB2-managed data sets.

### **Include Clock Field Components**

CMF performance class Clock fields accumulate data for both their count and time components in the HDB. You have a choice as to which components to load into DB2. For example, selecting **Time only** will load the time component but not the count component. Time only is sufficient for most analysis requirements.



For an HDB that is intended to be used in the CICS PA plug-in for CICS Explorer, this option must be set to “1. Time and Count”.

### Summary Options

Specify **Include Sums of Squares** to load sum-of-square values into the DB2 Table. CICS PA always loads the Total. This allows you to calculate averages. Sums of Squares are required to calculate standard deviation and peak percentiles. Totals (and not Sums of Squares) is sufficient for most analysis requirements.

This option must not be selected for an HDB that is intended to be used in the CICS PA plug-in.

Review the JCL and then submit it to create the DB2 table.

Review the job output in SDSF to verify that the table was created successfully.

### Loading data into the DB2 table

JCL is built that contains the DB2 Load Utility statement required to load the HDB data set into the DB2 table that was defined in the previous step.

CICS PA uses the DB2 Load Utility to load data into the table.

The options are:

#### Load Options

Select **Resume** if you want the DB2 Load Utility to resume loading data into the table. Typically, this is appropriate for Summary HDBs.

Select **Replace** if you want the DB2 Load Utility to replace data already loaded in the table. Typically, this is appropriate for List HDBs.

Review the JCL and then submit it to load the DB2 table.

Review the job output in SDSF to verify that the table was created successfully.

### Migrating DB2 tables and data between CICS TS releases

You can redefine HDBs to make the corresponding DB2 tables compatible with a new CICS TS version.

New releases of CICS might include the addition or deletion of CICS TS Performance (CMF) and Statistics fields. As you migrate to a new release of CICS TS, you might need to redefine the DB2 tables that are loaded by CICS PA to make them compatible with the new CICS TS version and to make the fields available for viewing in the CICS PA plug-in.

To add or remove data fields from DB2 tables requires the ability to perform some DB2 administration tasks. If you wish to retain the old data, you must unload the tables, drop the tables, redefine the tables, and then reload them.

You can use CICS PA to define and load the new tables. You will need to consult your DB2 administrator for the other tasks.

For further information on how to use CICS PA to define and load DB2 tables, see the following topics:

- Performance HDBs: “Define a Performance HDB” on page 650 and “Load HDBs” on page 655

- Statistics HDBs: “Defining a Statistics HDB” on page 604 and “Loading data into a Statistics HDB” on page 607

## HDB Extract to CSV

After you have loaded data into an HDB it is then eligible for extract to CSV data sets.

Select option 6 **Extract** from the HDB menu to request an HDB extract..

```

File Options Help
-----
                                Extract HDBs                                Row 1 to 1 of 1
Command ==> _____ Scroll ==> CSR_

Select to run report.

  Name      Type      Description      Changed      ID
S CICSP1H  SUMMARY  Summary HDB for CICSP1      2004/12/07 09:28 JCH
***** End of list *****

F1=Help  F3=Exit  F7=Backward  F8=Forward  F10=Actions  F12=Cancel

```

Figure 391. HDB Extract

Select the required HDB from the list to display the Run Extract panel.

```

                                Run SUMMARY HDB Extract - CICSP1H
Command ==> _____

Specify Extract request options then press Enter to continue submit.

----- Report Interval ----- HDB contains data
      YYYY/MM/DD HH:MM:SS.TH in the range:
From 2004/12/15 _____ 2004/11/17 05:17 Extract Recap:
To 2004/12/16 _____ 2005/01/17 21:31 DDname . . . HXTS0001

Output Data Set:
Data Set Name . . HDB.EXTRACT
Disposition . . . 1 1. OLD 2. MOD (If cataloged)

Extract Format:
Form . . . . . + Enter "/" to select option
Delimiter . . . ; / Include Field Labels
                _ Numeric Fields in Float format

Processing Options:
Time Interval . . 01:00:00 (hh:mm:ss) Enter "/" to select option
Precision . . . 4 (4-6) / Edit JCL before submit

F1=Help  F3=Exit  F4=Prompt  F6=Resize  F12=Cancel

```

Figure 392. Run Summary HDB Extract

The options are:

### Report Interval

Specify the reporting time range. You can specify an explicit date, such as 2004/12/15, or a relative date to indicate today (0), yesterday (-1), two days ago (-2), and so on. Adjacent is the time range of data contained in this HDB. If you specify a Report Interval, then it must be within this range otherwise the extract request will fail.

### Extract Recap DDname

The DDname for the Recap report which prints at the end of extract processing to provide processing statistics. The DDname is mandatory.

CICS PA assigns a default DDname **HXTS0001**.

This option generates the OUTPUT(ddname) operand.

### Output Data Set

The name of the data set where the extract records are written. When specifying the data set name, standard TSO conventions apply.

If CICS PA is to create the data set at run time, the default allocation attributes specified on the Reporting Allocation Settings panel are used in generating the JCL. If the data set is already cataloged, then CICS PA will use DISP=OLD or DISP=MOD according to your request to overwrite or append to the existing data set.

CICS PA generates the DDNAME(ddname) operand and assigns a default DDname **HDBX0001**.

### Disposition

This option applies if the extract data set you specified is already cataloged.

Select option **1 - OLD** to overwrite the data set contents with the new extract data.

Select option **2 - MOD** to append the new extract data.

### Report Form

Specify a Report Form to tailor the format of the extract records. If you do not specify a Form, CICS PA will write all the fields in the HDB in order.

### Delimiter

Specify the field delimiter to be used to separate each data field in the extract data set. The default is a semicolon and generates the DELIMIT(';') operand.

### Include Field Labels

Select this option to indicate that the first record to be written to the extract data set is to be a field labels record. This is the default and generates the LABELS operand.

Leave blank if you do not want a field labels record written to the extract data set. This generates the NOLABELS operand.

### Numeric Fields in Float format

Select this option if you want CICS PA to write numeric fields to the extract data set in S390 FLOAT format. This generates the FLOAT operand. Specify FLOAT format if you plan to import the extract into a DB2 table. When the DB2 Load Utility is used, it will interpret all numerical fields reliably and consistently in FLOAT format.

If you do not select this option, the numeric fields are written in a mixture of integer, real and exponential using character digits. This is the default and is suitable when importing the extract data into a PC spreadsheet tool. This generates the NOFLOAT operand.

### Time Interval

Specify an optional Time Interval when extracting Summary HDBs.

Data in a Summary HDB is already summarized by the interval that was used to load the data. This is the value specified in the HDB or, if Time Interval was not specified in the HDB, the value defined in the Template.

You can further summarize the data by specifying a multiple of the interval that was used to load the data. Specify a value in the range

00:00:01 (1 second) to 24:00:00 (24 hours). For example, specify 00:15:00 if you want to summarize transaction activity over 15 minute intervals. If you are reviewing many days worth of data then you might specify 24:00:00 (24 hours) so that you can view the daily trend. In the example panel in this topic, the Interval has been changed to 1 hour.

**Notes:**

- If you specify a reporting interval that is equal to or less than the interval that was used to load the data, the report or extract uses the data as-is, without further summarization.
- If you do not specify a reporting interval it defaults to the interval that was used to load the data, unless that value is less than 1 minute, in which case the reporting interval is set to 1 minute.

**Precision**

The precision of numeric fields. Numeric fields can be formatted to either 4, 5, or 6 decimal places. The default is 4.

- 4 decimal places is 0.0001 precision
- 5 decimal places is 0.00001 precision
- 6 decimal places is 0.000001 microsecond precision

This option generates the PRECISION(n) global operand.

When you have specified your Extract options, you are prompted to **Press ENTER to proceed with request**. This provides a last opportunity to review and change your request details.

If you selected **Edit JCL before submit** then the Extract HDB JCL is displayed in an edit session.

```

EDIT          userid.SPFTEMP2.CNTL                      Columns 00001 00072
Command ==> _____ Scroll ==> CSR_
***** ***** Top of Data *****
000001 //CICSPA JOB ,NOTIFY=&SYSUID
000002 /* CICS PA V5R2 HDB EXTRACT JCL
000003 //CICSPA EXEC PGM=CPAMAIN
000004 //STEPLIB DD DISP=SHR,DSN=CPA.V5R2M0.SCPALINK
000005 //CPAHDBRG DD DISP=SHR,DSN=CICSPROD.CICSPA.XYX.REPOSTRY
000006 //SYSPRINT DD SYSOUT=*
000007 //HDBX0001 DD DSN=userid.HDB.EXTRACT,
000008 //          DISP=(OLD)
000009 /* Command Input
000010 //SYSIN DD *
000011 * HDB=CICSP1H
000012 * Description=Summary HDB for CICSP1H
000013          CICSPA SMFSTART(2004/12/15,00:00:00.00),
000014          SMFSTOP(2004/12/16,00:00:00.00)
000015          CICSPA NOAPPLID,
000016          LINECNT(60),
000017          FORMAT(':', '/'),
000018          PRECISION(4),
000019          HDB(DDNAME(HDBX0001),EXTRACT(CICSP1H),
000020          OUTPUT(HXTS0001),LABELS,DELIMIT(';'),NOFLOAT,
000021          INTERVAL(01:00:00))
000022 /*
000023 /* HDB Container Data Sets. HDB Report processing does not require
000024 /* these data sets to be included in the JCL as they are dynamically
000025 /* allocated when required. They are included:
000026 /* 1) for your reference
000027 /* 2) to ensure that all required data sets are cataloged
000028 /* 3) to allow DFHSM to recall required data sets up front
000029 //HDB00001 DD DISP=SHR,DSN=userid.CICSP1H.D03219.T092846.HDB
***** ***** Bottom of Data *****

```

Figure 393. Edit JCL for Summary HDB Extract

The HDB container data sets are listed at the end of the JCL. They are not required here because the CICS PA batch utility will dynamically allocate the data sets when they are required. CICS PA adds the data sets into the JCL primarily for the purpose of DFHSM recall, if required. It is more efficient to recall data sets in the JCL (where job initiation can recall migrated data sets en masse) rather than one at a time when dynamically allocated.

The command deck specifies operands to extract records from HDB CICSP1H, write them to the extract data set with DDname HDBX0001, and write the Recap report output to the DDname HXTS0001:

```
HDB(DDNAME(HDBX0001),EXTRACT(CICSP1H),OUTPUT(HXTS0001),...)
```

Enter **SUBmit** in the command line to submit the job to run the report.

Successful completion of the Extract request will generate an HDB Summary Extract Recap report.

```

V5R2M0                      CICS Performance Analyzer
                             Historical Database Summary
HXTS0001 Printed at 12:03:45 11/12/2013   Data from 15:00:00 12/15/2004 to 00:00:00 12/16/2004   Page      1

HDBX0001 Extract has completed successfully
Data Set Name . . . . userid.HDB.EXTRACT
Record count  . . . .      788

```

Figure 394. HDB Summary Extract Recap report

The extract data set contains records like those in the following example.

```

Start Date;Start Time;MVS;APPLID;Tran;#Tasks;Response Time Avg;Dispatch Time Avg;User CPU Time Avg;Suspend Time
2004/12/15 15:00:00;MV2C ;IYK3ZAC1;CSHQ ; 1;55155.62; .2103; .0212;55155.41; .0331; .0001;
2004/12/15 15:00:00;MV2C ;IYK3ZAC1;CSNC ; 1;55159.06; .3379; .0041;55158.72; .0356; .0001;
2004/12/15 15:00:00;MV2C ;IYK3ZAC1;CSNE ; 1;55153.97; .0881; .0060;55153.88; .0042; .0001;
2004/12/15 18:00:00;MV2C ;IYK2ZFFV1;CEX2 ; 1;50237.83; .5030; .2717;50237.33; .1800; .0001;
2004/12/15 18:00:00;MV2C ;IYK2ZFFV1;CSHQ ; 1;50234.95; .3105; .0190;50234.64; .5761; .0001;
2004/12/15 18:00:00;MV2C ;IYK2ZFFV1;CSNC ; 1;50393.54; .4259; .0058;50393.12; .0026; .0001;
2004/12/15 18:00:00;MV2C ;IYK2ZFFV1;CSNE ; 1;50389.87; .1321; .0177;50389.74; .0074; .0001;
2004/12/15 18:00:00;MV2C ;IYK2ZFFV2;CEX2 ; 1;50241.24; .2630; .1828;50240.98; .2255; .0001;

```

Figure 395. HDB Summary Extract record format

## Tailoring the HDB extract format

The format of the extract records can be changed by specifying a Report Form. The process for HDB Extract is the same as applying a Report Form to an HDB Report. For more information, see “SUMMARY Report Form” on page 317.

## Analyzing the extract data

After HDB data has been loaded into an extract data set in CSV format, you can use your favorite PC spreadsheet tool, such as Lotus(r) Symphony(r) Spreadsheets or Microsoft Excel, to analyze the data. See Chapter 25, “Analyzing CSV extract data,” on page 705 for examples of how to use such tools to analyze the data.

## HDB Maintenance

Select option 7 **Maintenance** from the HDB menu to list defined HDBs and maintain your HDB environment. You can delete an HDB or change its options. You can maintain a manifest, which is used by the CICS PA plug-in to access historical performance data for related HDBs from CICS Explorer.

File Explorer Options Help

HDB Maintenance
Row 1 of 5 More: >

Command ==>
Scroll ==> CSR\_

Select to maintain HDB definition and its data sets.

/	Name	Type	Description	Changed	ID
	CICSDAY	LIST	Today's CICS Transactions	2004/12/11 00:00	CICSPA
S	CICSWEEK	SUMMARY	Weekly CICS Transactions	2004/12/11 00:00	CICSPA
-	CPUTREND	SUMMARY	Transaction CPU Usage Trend	2004/12/11 00:00	CICSPA
-	PRODRESP	SUMMARY	Production Transaction Response	2004/12/11 00:00	CICSPA
-	FCHIST	SUMMARY	File Request History	2004/12/11 00:00	CICSPA

\*\*\*\*\* End of list \*\*\*\*\*

F1=Help
F3=Exit
F5=Rfind
F7=Backward
F8=Forward
F10=Actions

F11=Right
F12=Cancel

Figure 396. HDB Maintenance

## Line Actions

- /** Display the selection list of line actions
- E** Edit (maintain) the HDB.
- S** Select the HDB (same as Edit).
- D** Delete the HDB. The HDB Definition is deleted immediately. The HDB data sets are deleted when Housekeeping is next run.
- A** Display the audit trail of load requests for the HDB. For details, see “HDB Load Audit” on page 684.
- T** Build JCL to create a DB2 table. For details, see “Create DB2 table” on page 687.

## Primary Commands

**SORT**, **LOCATE**, and **FIND** commands are available to help you work with the list of HDBs.

**Note:** The **FIND** command is not applicable to the Qualifier and Explorer fields.

## Maintain HDB definitions

Select an HDB from the list to review and update the options.

File Systems Options Help

Maintain HDB

More: >

Command ==>

Review and update HDB definition options then press EXIT to save.

Name . . . . . : CICSP1    Type SUMMARY    APPLID    CICSP1\_\_ +    Image    \_\_\_\_\_

Qualifier . . . . . : \_\_\_\_\_    Explorer

Description . . . . . : Summary HDB for CICSP1\_\_\_\_\_

Specify View . . . 1 1. Options    2. Data Sets    3. Volumes

Load Options:

Template . . . . . PRODSUM\_ +

Alert . . . . . \_\_\_\_\_ +

Severity . . . . . \_\_\_\_\_ +

Summary Interval \_\_\_\_\_ (hh:mm:ss)

Selection Criteria:

\_\_\_\_\_ Performance

Data Retention Period:

HDB: Years 10\_ Months \_\_\_\_\_ Weeks \_\_\_\_\_ Days \_\_\_\_\_ Hours \_\_\_\_\_

DB2: Years \_\_\_\_\_ Months \_\_\_\_\_ Weeks \_\_\_\_\_ Days \_\_\_\_\_ Hours \_\_\_\_\_

Data Set Allocation Settings:

DSN Prefix . . . . . USER\_\_\_\_\_

Management class . . . . . \_\_\_\_\_ (Blank for default management class)

Storage class . . . . . \_\_\_\_\_ (Blank for default storage class)

Volume serial . . . . . \_\_\_\_\_ (Blank for system default volume)

Device type . . . . . \_\_\_\_\_ (Generic unit or device address)

Data class . . . . . \_\_\_\_\_ (Blank for default data class)

Space Units . . . . . CYLS\_\_\_\_\_ (TRKS, CYLS)

Primary quantity . . . 20\_\_\_\_\_ (In above units)

Secondary quantity . . . 20\_\_\_\_\_ (In above units)

F1=Help    F3=Exit    F4=Prompt    F7=Backward    F8=Forward    F10=Actions

F11=Right    F12=Cancel

Figure 397. Maintain HDB definition

Scroll **Right** (F11) to switch between the views of HDB details:

1. The HDB Definition from where you can change the HDB options. The available options are the same as on the New HDB Definition panel. For more information, see “Define a Performance HDB” on page 650.
2. The list of HDB data sets that contain data for this HDB.

Press **Exit** to save your updates or **Cancel** to discard changes.

## Maintain HDB container data sets

Scroll **Right** (F11) to view the list of container data sets.

File Systems Options Help			
Command ==>		Maintain HDB	Row 1 of 1 More: > Scroll ==> CSR_
Maintain HDB data sets.			
Name . . . . .	CICSP1	Type SUMMARY	APPLID CICSP1_ + Image _____
Qualifier . . .	QQQQ	/ Explorer	
Description . .	Summary HDB for CICSP1_____		
Specify View . . <u>2</u> 1. Options 2. Data Sets 3. Volumes			
/ Data Set Name		Start	Status
S CPA510.XCTL.V680LIST.D12212.T162249.HDB		2012/07/21 09:48:54	HDB DB2 Del Exp
***** End of list *****			
F1=Help	F3=Exit	F4=Prompt	F7=Backward F8=Forward F10=Actions
F11=Right	F12=Cancel		

Figure 398. Maintain HDB data sets

The HDB container data set details shown here are:

- The name of the data set. The suffix indicates the contents:
  - .HDB indicates that the data set contains CICS statistics or transaction performance data.
  - .HPA indicates that the data set contains performance alert data.

Because HDB and HPA containers have the same space allocation but different record length and record counts, they are likely to fill at different rates. Therefore they will be allocated at different times resulting in different name identifiers. In other words, there will not usually be a one-to-one relationship between associated HDB and HPA data sets.

- The time stamp of the first record in the data set.
- The status of the HDB container data set:
  - If delete pending, it is marked **Del**.
  - If the HDB retention period has been exceeded, it is marked **Exp** (expired).
  - If neither delete pending nor expired, it is marked **Act** (active).
- The status of DB2 table data associated with the HDB container data set:
  - If the DB2 retention period has been exceeded, it is marked **Exp** (expired).
  - If not all data has expired, it is marked **Pxp** (partially expired).
  - If neither delete pending nor expired, it is marked **Act** (active).
  - If the status is unavailable (because the DB2 retention period is not specified), it is marked **n/a**.

Data sets and DB2 data marked Del or Exp are physically deleted when Housekeeping is next run.

Associated HDB and HPA containers can be managed independently. This means that they do not have to be deleted at the same time.

Scroll **Right** (F11) to view the VOLSER where the data set resides, if active.

## Line Actions

- / Display the selection list of line actions.
- S Select the HDB data set to view status information, as shown in Figure 399 on page 683.
- B Browse the data set using ISPF Browse, as shown in Figure 400 on page 684
- D Delete the HDB data set. The data set is deleted in the HDB now, and physically deleted when HDB Housekeeping is next run.



- U** Undo. Reverse an earlier Delete action and reinstate the data set as active in this HDB. Undo is only available on a Deleted data set until Housekeeping is run.

## View HDB data set statistics

The HDB Data Set panel displays details about the HDB container data set:

- The name of the data set and VOLSER where it resides.
- The status of the data set: either Active, Expired, or Deleted.
- The date the Load HDB was run and the data set was created.
- The expiry date of the HDB data set determined by the HDB retention period. The expiry date is blank if the data set is deleted.
- The time period spanned by the records in the data set.
- The number of records in the data set.
- The status of the DB2 data: either Active, Expired, Pexpired (partially expired), or n/a.
- The expiry date of the DB2 data determined by the DB2 retention period.

HDB Data Set

Command ==> \_\_\_\_\_

Data Set Name . . . : CPA510.XCTL.V680LIST.D12212.T162249.HDB  
VOLSER . . . . . : USER01  
  
HDB Status . . . . : Deleted  
Creation Date . . . : 2012/07/30 16:22:55  
Expiry Date . . . . :  
  
Data Start . . . . : 2012/07/21 09:48:54  
Data End . . . . . : 2012/07/22 17:05:24  
Record Count . . . : 503  
  
DB2 Status . . . . : Expired  
DB2 Expiry Date . . : 2012/07/23 17:05:24  
  
F1=Help    F3=Exit    F6=Resize F12=Cancel

*Figure 399. View HDB data set statistics*

## Browse HDB data set contents

The **B** line action displays the contents of a container data set using ISPF Browse.

```
ISRBROBA CPPX.#STAT01.D13199.T231503.HDB          Line 00000000 Col 001 080
Command ==>                                         Scroll ==> PAGE
***** Top of Data *****
2013-07-17-00.00.00CXVT22M FSY1 CXVT22M 620E0D ....07:33:10005A2..>LGJ
2013-07-17-00.00.00CXVT22M FSY1 CXVT22M 620E0D ....07:33:10005A2..AITM
2013-07-17-00.00.00CXVT22M FSY1 CXVT22M 620E0D ....07:33:10005A2..AP_T
2013-07-17-00.00.00CXVT22M FSY1 CXVT22M 620E0D ....07:33:10005A2..AP_T
2013-07-17-00.00.00CXVT22M FSY1 CXVT22M 620E0D ....07:33:10005A2..APAI
2013-07-17-00.00.00CXVT22M FSY1 CXVT22M 620E0D ....07:33:10005A2..APBM
2013-07-17-00.00.00CXVT22M FSY1 CXVT22M 620E0D ....07:33:10005A2..APCO
2013-07-17-00.00.00CXVT22M FSY1 CXVT22M 620E0D ....07:33:10005A2..APDW
2013-07-17-00.00.00CXVT22M FSY1 CXVT22M 620E0D ....07:33:10005A2..APEC
2013-07-17-00.00.00CXVT22M FSY1 CXVT22M 620E0D ....07:33:10005A2..APIC
2013-07-17-00.00.00CXVT22M FSY1 CXVT22M 620E0D ....07:33:10005A2..APUR
2013-07-17-00.00.00CXVT22M FSY1 CXVT22M 620E0D ....07:33:10005A2..ASYN
2013-07-17-00.00.00CXVT22M FSY1 CXVT22M 620E0D ....07:33:10005A2..BAGE
2013-07-17-00.00.00CXVT22M FSY1 CXVT22M 620E0D ....07:33:10005A2..BAOF
2013-07-17-00.00.00CXVT22M FSY1 CXVT22M 620E0D ....07:33:10005A2..BAOF
2013-07-17-00.00.00CXVT22M FSY1 CXVT22M 620E0D ....07:33:10005A2..BR_B
2013-07-17-00.00.00CXVT22M FSY1 CXVT22M 620E0D ....07:33:10005A2..BR_B
2013-07-17-00.00.00CXVT22M FSY1 CXVT22M 620E0D ....07:33:10005A2..BR_B
```

Figure 400. Browse contents of HDB container data set

HDB Load Audit

From the Maintain HDBs list, enter line action A to display the audit details for a particular HDB.

The Load Audit Trail lists the SMF Files used to load data into the HDB, and the status of those requests.

```
File Edit Options Help
-----
HDB Load Audit Trail          Row 1 to 2 of 2
Command ==>                   Scroll ==> PAGE

SMF Data Set Name          ----- Start ----- Status
S CPPX.CICS620.PMR52938.SMFDATA      2004/11/17 09:05:27 OK
- CPPX.V140.SMF0818                0000/00/00 00:00:00 FAILED
***** Bottom of data *****
```

Figure 401. HDB Load Audit Trail

The Audit details include:

- SMF Data Set Name** The data set name of the SMF Input File used for the Load request.
- Start** The time stamp of the first record in the SMF File.
- Status** The status of the Load request, either OK (successful) or FAILED.

Reusing an SMF File that has been successfully loaded

When you load data from an SMF File into an HDB, CICS PA updates the load audit trail for that HDB, setting the status of the SMF File to OK (“data from this SMF File was successfully loaded into this HDB”). When the status is OK, CICS PA denies any subsequent requests to load data from the SMF File into the HDB. This protects you from loading duplicate data into the HDB. However, sometimes you might want to load an HDB from the same SMF File: perhaps you want to include a different time interval or additional APPLIDs.

**Attention:** You cannot undo line action F. Only a successful load of the HDB will restore the status to OK.

## Viewing the results of an HDB load request

[illegible]

Each HDB Load request generates an Audit trail record that provides the status of the load request. The Audit details include:

The data set name of the SMF Input File used for the Load request.

- For a successful Load request, the Status is **OK**. CICS PA ensures that the Load request for this SMF File is not accidentally re-run, preventing the accidental duplication of HDB data (in container data sets).
- For a failed Load request, the Status is **FAILED**. The Load request for this SMF File must be re-run after the problem that caused the error condition is corrected, to ensure that there are no gaps in the HDB data.

The time stamp of the first record in the SMF File.

The time stamp of the last record in the SMF File.

The total number of records written to container data sets.

The total number of container data sets created.

The first 64 bytes of the first SMF record in the file. CICS PA uses this record to ensure that only one successful load request is run for this SMF File.

## Maintain manifest

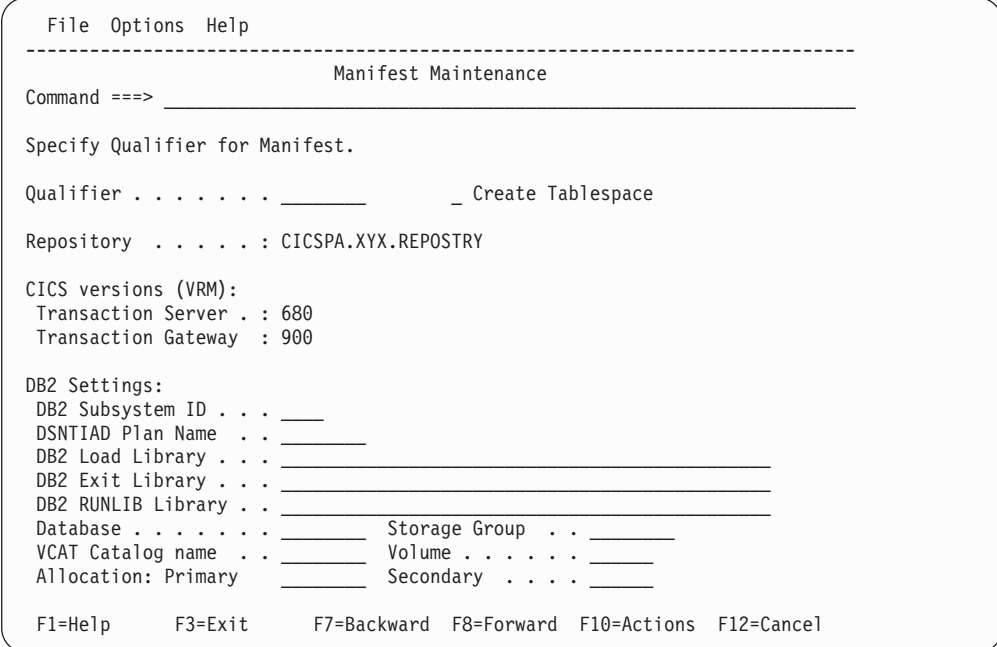
A manifest is a proprietary DB2 table that contains all the information required by the CICS PA plug-in for CICS Explorer to access and use historical data. The manifest is a catalog of DB2 tables for HDBs that are associated with the same qualifier and for which the Explorer indicator is set. The manifest for a given qualifier can be rebuilt at any time.

### About this task

The manifest definition specifies the qualifier and the settings for the DB2 table that will contain the manifest.

Rebuild the manifest whenever you add or change an HDB in a way that affects its eligibility for inclusion in that manifest. For example, if an HDB is currently included in a manifest and you clear the Explorer option, it is no longer eligible for inclusion in that manifest. If you change the qualifier for an eligible HDB, you should rebuild both the manifest for the old qualifier and the manifest for the new qualifier.

In addition, the manifest will only contain entries for statistics reports with a status of Collect=Yes or Alt and DB2 Load=Yes. If these indicators are not set, the report will not be included in the manifest and therefore will not be accessible through the CICS PA plug-in. Therefore you should rebuild the manifest whenever any changes are made to the status of a report in an eligible Statistics HDB.



The screenshot shows the 'Manifest Maintenance' dialog box. At the top is a menu bar with 'File', 'Options', and 'Help'. Below the menu bar is a title bar 'Manifest Maintenance'. The main area contains the following fields and options:

- Command ==> \_\_\_\_\_
- Specify Qualifier for Manifest.
- Qualifier . . . . . \_\_\_\_\_ \_ Create Tablespace
- Repository . . . . . : CICSPA.XYX.REPOSTRY
- CICS versions (VRM):
  - Transaction Server . : 680
  - Transaction Gateway : 900
- DB2 Settings:
  - DB2 Subsystem ID . . . \_\_\_\_\_
  - DSNTIAD Plan Name . . . \_\_\_\_\_
  - DB2 Load Library . . . \_\_\_\_\_
  - DB2 Exit Library . . . \_\_\_\_\_
  - DB2 RUNLIB Library . . . \_\_\_\_\_
  - Database . . . . . \_\_\_\_\_ Storage Group . . . \_\_\_\_\_
  - VCAT Catalog name . . . \_\_\_\_\_ Volume . . . . . \_\_\_\_\_
  - Allocation: Primary \_\_\_\_\_ Secondary . . . . . \_\_\_\_\_
- At the bottom, there is a row of function keys: F1=Help, F3=Exit, F7=Backward, F8=Forward, F10=Actions, F12=Cancel.

Figure 403. Manifest Maintenance

### Procedure

1. Select **Explorer -> Manifest Maintenance** in the action bar on the HDB Export or Maintenance panel to create or update a manifest for a specified qualifier.
2. Type the name of a qualifier. The manifest table will be named *qualifier*.CPA\_MANIFEST. HDBs that have the same qualifier and which are otherwise eligible will be included in this manifest.

3. When creating the first manifest, select Create Tablespace. The tablespace name is MANIFEST. On subsequent uses of Manifest Maintenance (either when creating a manifest for a new qualifier or recreating a manifest to add or delete HDBs) do not select Create Tablespace if it already exists in the specified DB2 Database.
4. Specify the settings for the DB2 table that will be used to store the manifest. For details, see “Creating DDL to define a DB2 table” on page 673.
5. Perform the following steps to create the manifest:
  - a. Press Enter. The panel prompts you to press Enter again to proceed.
  - b. Press Enter again. An edit panel appears, containing JCL to create the required DB2 table for the manifest.
  - c. Enter **sub** to submit the JCL. If you selected Create Tablespace, the DB2 tablespace (named MANIFEST) and the Database and Storage Group are created first.
6. Press the Exit key (F3) to save the manifest definition and return to the CICS PA panel.

## Create DB2 table

JCL is built that defines the DB2 table. If the selected HDB definition contains a qualifier, it will be used instead of the Database value to prefix the table name.

### About this task

This task explains how to create the DB2 table for an HDB Select option **5 Export** or option **7 Maintenance** from the HDB menu to list the defined HDBs. Specify the T line action against one of the HDBs to specify the DB2 Table details:

File Options Help

Create DB2 Table

Command ==> \_\_\_\_\_  
  
 HDB Name . . . : HDB4CEXP  
  
 Create Options  
   \_ Create Database  
   \_ Create Storage Group  
  
 DB2 Settings:  
 DB2 Subsystem ID . . . \_\_\_\_  
 DSNTIAD Plan Name . . \_\_\_\_  
 DB2 Load Library . . . \_\_\_\_  
 DB2 Exit Library . . . \_\_\_\_  
 DB2 RUNLIB Library . . \_\_\_\_  
 Database . . . . . \_\_\_\_ Storage Group . . \_\_\_\_  
 VCAT Catalog name . . \_\_\_\_ Volume . . . . . \_\_\_\_  
 Allocation: Primary \_\_\_\_ Secondary . . . . \_\_\_\_  
  

Include Clock Field Components  
 1 1. Time and Count  
 \_ 2. Time only  
   3. Count only

Summary Options  
 \_ Include Sums of Squares

F1=Help
F3=Exit
F7=Backward
F8=Forward
F10=Actions
F12=Cancel

Figure 404. Create DB2 Table

## Procedure

1. Specify settings for exporting data from historical databases (HDBs) to DB2. For details of how to specify the Create Options, DB2 Settings, Include Clock Field Components, and Summary Options fields, see “Creating DDL to define a DB2 table” on page 673.
2. Review the JCL and then submit it to create the DB2 table.
3. Review the job output in SDSF to verify that the table was created successfully.

## What to do next

Once the HDB data has been exported you can access it using the CICS PA plug-in or through DB2 SQL.

---

## Housekeeping

Housekeeping for Statistics and Performance HDBs is performed in the same way.

Select option 8 **Housekeeping** from the HDB menu to reorganize and clean up your HDB environment.

Use HDB Housekeeping to perform the following tasks:

```
HDB Housekeeping
Command ===> _____
Repository . : CICSPROD.CICSPA.XYX.REPOSTRY

Select one of the following options
1  1. Submit HDB Housekeeping JCL
-  2. Repair Repository using VERIFY command

Enter "/" to select option
/  Edit JCL before submit

F1=Help    F3=Exit    F6=Resize    F12=Cancel
```

*Figure 405. HDB Housekeeping*

### 1. Submit HDB Housekeeping JCL.

Run HDB Housekeeping periodically to delete expired HDB data sets and DB2 table rows and to reorganize the Repository.

### 2. Repair Repository using VERIFY command.

The IDCAMS VERIFY command is used to repair the end-of-data-set information in the VSAM Catalog for the Repository. Use repair if message IEC161I is being issued repeatedly. This condition is usually caused by an earlier HDB dialog or batch request that failed.

---

## Chapter 23. Using the HDB commands

The Historical Database (HDB) facility is driven from the CICS PA dialog, but has associated batch processes:

1. Load HDB
2. HDB reporting
3. HDB extract to CSV
4. HDB export to DB2
5. HDB housekeeping

For these batch processes, CICS PA dialog generates the JCL and commands automatically, but you are given the opportunity to edit them before job submission. The jobs can also be run at a later time independent of the dialog.

The HDB commands are specified in the SYSIN DD statement. The format of the commands is consistent with other CICS PA commands. For more information, see “General command format” on page 383.

---

### JCL for HDB load, report, extract

The following JCL is an example of the job stream for requesting HDB load or report processing. This is the same as the JCL for generating reports and extracts (see Figure 188 on page 367), but has the following additional statement specific to HDB processing:

#### CPAHDBRG DD

This DD statement identifies the Repository data set. The Repository is a VSAM KSDS that is the repository for all definitions associated with the HDB.

```
//CPAHDBP JOB (Job Accounting)
//*
//CICSPA EXEC PGM=CPAMAIN,PARM='UPPER'
//STEPLIB DD DSN=CICSPA.V5R2M0.SCPALINK,DISP=SHR
//CPAHDBRG DD DSN=USER.CICSPA.XYX.REPOSTRY,DISP=SHR
//SYSPRINT DD SYSOUT=*
//* SMF Files for APPLID=CICSP
//SMFIN001 DD DSN=CICS.APPL1.FILE1,DISP=SHR
//          DD DSN=CICS.APPL1.FILE2,DISP=SHR,UNIT=AFF=SMFIN001
//SYSIN DD *
* HDB=CICSP1H
* Description=Summary HDB for CICSP1
  CICSPA SMFSTART(2004/12/01,),
          SMFSTOP(2004/12/02,)
* HDB Load for APPLID=CICSP1
  CICSPA IN(SMFIN001),
          APPLID(CICSP1),
          HDB(OUTPUT(HDBL0001),LOAD(CICSP1H)),
          HDB(OUTPUT(HDBR0001),REPORT(CICSP1H))
/*
/* Dictionary records
//CPADICTR DD DISP=SHR,DSN=CICSPA.CICSP1.DICT
```

*Figure 406. JCL for HDB load and report processing*

---

## HDB Loading

The **HDB(LOAD...)** operand requests CICS PA to load CMF performance data from SMF data sets into an HDB.

The command format is:

```
CICSPA HDB(LOAD(hdbname),  
          [OUTPUT(ddname)])
```

The options are:

### LOAD

Specifies the name of the HDB to be loaded. The HDB must be defined in the Repository (DDname **CPAHDBRG**).

### OUTPUT

Recap report output file name. CICS PA records the results of the Load operation in this File. If not specified, CICS PA assigns a DDname of **HDBLnnnn** where nnnn is the numerical sequence number **0001-9999**.

**Note:** LOAD ignores any additional HDB request operands, including FIELDS and SELECT. Load processing uses:

1. The Template to determine which fields are contained in the HDB. It does not use the FIELDS operand.
2. Selection Criteria specified in the HDB definition and its Template. It does not use the SELECT operand.

---

## HDB Reporting

The **HDB(REPORT)** operand requests CICS PA to generate reports from performance HDB data.

The command format is:

```
CICSPA HDB(REPORT(hdbname),  
          [OUTPUT(ddname),]  
          [NOTOTALS|TOTALS(n),]  
          [SUFACTOR(hdbname(nnnnn.nnn)),]  
          [INTERVAL(hh:mm:ss),]  
          [FIELDS(field1[(options)],...),]  
          [LINECount(nnn),]  
          [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...)),]  
          [SELECT2(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...))])
```

The options are:

### REPORT

Specifies the name of the performance HDB to report against. The HDB must be defined in the Repository (DDname **CPAHDBRG**).

### OUTPUT

Report output file name. See "OUTPUT" on page 390 for further information. If not specified, CICS PA assigns a DDname in the format **HDBRnnnn** where nnnn is the report sequence number **0001-9999** to uniquely identify the output.

### NOTOTALS|TOTALS(n)

The totals level applies only to the Summary report.



Specify TOTALS(1) to TOTALS(8) to accumulate subtotals for up to 8 sort fields, print the subtotals when the sort field changes, and print a grand total at the end of the report. Default: **TOTALS(8)**

Specify TOTALS(0) for no subtotals, but print only the grand total.

Specify NOTOTALS for neither subtotals nor grand total.

## SUFACTOR

Specifies a CPU SU conversion factor to apply to the HDB container. The SUFACTOR operand includes two keywords to identify the HDB name and its associated conversion factor. The value must be a decimal number or integer in the range 1 - 999999999 (nine 9s).

When reporting or extracting HDB records the CPU SU conversion factor will only be applied when field CPUSU is not present in the HDB record. In other words, if field CPUSU is in the HDB record, it will be reported as is, otherwise, it will be calculated using the CPU SU conversion factor.

## INTERVAL

This operand applies to Summary HDBs. It specifies a time interval when the report summarizes transaction activity over time. The interval is in the range 1 second to 24 hours in the format *hh:mm:ss* for hours, minutes, and seconds.

Data in a Summary HDB is already summarized by the interval that was used to load the data. This is the value specified in the HDB or, if Time Interval was not specified in the HDB, the value defined in the Template.

You can further summarize the data by specifying a multiple of the interval that was used to load the data. Specify a value in the range 00:00:01 (1 second) to 24:00:00 (24 hours). For example, specify 00:15:00 if you want to summarize transaction activity over 15 minute intervals. If you are reviewing many days worth of data then you might specify 24:00:00 (24 hours) so that you can view the daily trend.

### Notes:

- If you specify a reporting interval that is equal to or less than the interval that was used to load the data, the report or extract uses the data as-is, without further summarization.
- If you do not specify a reporting interval it defaults to the interval that was used to load the data, unless that value is less than 1 minute, in which case the reporting interval is set to 1 minute.

A time interval of less than one hour must fit evenly into the hour. CICS PA will round it down to the nearest interval that aligns to the hour. For example, 1.35 is reduced to 00:01:30 minutes which will produce 40 interval report lines for each hour of data.

A time interval of more than one hour must fit evenly into the day. CICS PA will round it down to the nearest interval that aligns to the day. For example, 10.30.23 is reduced to 08:00:00 hours which will produce 3 interval report lines for each day of data.

Minutes take precedence for an abbreviated entry. For example:

**1** becomes 00:01:00

**1.1** becomes 00:01:00 (rounded down from 00:01:01)

**1.1.1** becomes 01:00:00 (rounded down from 01:01:01)

## FIELDS

Specifies which fields are reported, the order in which they appear in the

report, and their summarization presentation. Only fields that are specified in the HDB Template can be specified. Fields not contained in the HDB are reported as **Missing**.

When reporting from a Summary HDB, the options for specifying fields are similar to the options for a Performance Summary report. For details, see "SUMMARY(FIELDS" on page 428.

When reporting from a List HDB, the options for specifying fields are similar to the options for a Performance List report. For details, see "LIST(FIELDS" on page 404.

#### **LINECount**

Controls the number of lines per page in the HDB report. See "LINECount" on page 392 for further information.

#### **SELECT, SELECT2**

Specifies what data to include or exclude from the report based on data field values. See "Using SELECT statements" on page 525 for an explanation and examples.

Only fields that are specified in the HDB Template can be specified. Select Fields not contained in the HDB will cause selection to fail and reporting will skip the record. SELECT and SELECT2 can both be specified to perform record filtering. The CICS PA dialog generates SELECT2 statements in the command deck when you use a Report Form that has active Selection Criteria. If both SELECT and SELECT2 are specified, then the record must pass selection by both specifications for it to be included in the report.

---

## **Statistics HDB Alerts Reporting**

The **HDB(STATSALERT)** operand requests CICS PA to generate Statistics Alert reports from statistics HDB data.

The command format is:

```
CICSPA HDB(STATSALERT(hdbname),  
          [OUTPUT(ddname),]  
          [EXTERNAL(ddname),]  
          STALTDEF(statistics-alert-definition),  
          [BY(APPLID[(LIST,SUMMARY)] |  
            ALERT[(LIST,SUMMARY)] |  
            COLLECT |  
            INTERVAL |  
            RESOURCE),]  
          [TYPE(EOD,INT,USS,REQ,RRT)])
```

The Statistics HDB and Statistics Alert definition that you use for this report must be stored in the same Repository (an HDB reporting job can specify only one Repository).

Except for the STATSALERT operand itself (which specifies the Statistics HDB to be used), the options are the same as the options for the CICS PA STATSALERT operand to generate Statistics Alert reports from SMF data. For details, see "STATSALERT - Statistics Alert reports" on page 500.

---

## Statistics HDB List Reporting

The **HDB(STATISTICSLIST)** operand requests CICS PA to generate Statistics List reports from statistics HDB data.

The command format is:

```
CICSPA HDB(STATISTICSLIST(hdbname),  
          [FORM(formname),]  
          [STALTDEF(statistics-alert-definition),]  
          [SEVERITY(CRITICAL|WARNING|INFO|ALL),]  
          [INCLUDESEV],  
          [TYPE(EOD,INT,USS,REQ,RRT),]  
          STATstid(ddname),  
  
          :  
          HSTGstid(ddname)  
          [LINECount(nnn),])
```

The Statistics HDB and Statistics List definition that you use for this report must be stored in the same Repository (an HDB reporting job can specify only one Repository).

Except for the STATISTICSLIST operand itself (which specifies the Statistics HDB to be used), the options are the same as the options for the CICS PA STATISTICSLIST operand to generate Statistics List reports from SMF data. For details, see “STATISTICSLIST - Statistics List reports” on page 498.

---

## HDB Extract to CSV

The **HDB(EXTRACT)** operand requests CICS PA to generate CSV extracts from HDB data.

The command format is:

```
CICSPA HDB(EXTRACT(hdbname),  
          [OUTPUT(ddname),]  
          [DDNAME(ddname),]  
          [STATnnnn(ddname),]  
          [HSTGnnnn(ddname),]  
          [DELIMIT('field-delimiter'),]  
          [LABELS|NOLABELS],  
          [FLOAT],  
          [SUFACTOR(hdbname(nnnnn.nnn)),]  
          [INTERVAL(hh:mm:ss),]  
          [FIELDS(field1[(options)],...),]  
          [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...)),]  
          [SELECT2(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...))])
```

The options are:

### EXTRACT

Specifies the name of the HDB from which to extract data. The HDB must be defined in the Repository (DDname **CPAHDBRG**).

### OUTPUT

Specifies the DDname for the Recap report output. If not specified, the CICS PA dialog assigns a DDname in the format **HXTS0001** to uniquely identify the output.

**DDNAME (performance HDBs only)**

Specifies the DDname for the performance extract data set. Dialog default: **HDBX0001**

**STATnnnn, HSTGnnnn (statistics HDBs only)**

Specifies the DDname for the extract data set for each statistics report that you want to extract, where nnnn is the statistics ID. STATnnnn identifies a CICS Transaction Server statistics report; HSTGnnnn identifies a CICS Transaction Gateway statistics report. For example, HSTG000A(TGCMCSV) instructs CICS PA to extract CICS Transaction Gateway Connection Manager statistics report data to the extract data set identified by the DDname TGCMCSV. Dialog default: DDname matches keyword; for example, **STAT010A(STAT010A)**.

**DELIMIT**

Specifies the field delimiter, enclosed in quotes, to be used to separate each data field in the extract data set. The default is a semicolon DELIMIT(';').

**LABELS | NOLABELS**

**LABELS** indicates that the first record to be written to the extract data set is to be a field labels record. This is the default.

**NOLABELS** indicates that CICS PA is not to write a field labels record to the extract data set.

**FLOAT (performance HDBs only)**

Write numeric fields in the extract in S390 FLOAT format.

Specify FLOAT format if you plan to import the extract into a DB2 table. When the DB2 Load Utility is used, it will interpret all numerical fields reliably and consistently in FLOAT format.

If FLOAT is not specified, the numeric fields are written in a mixture of integer, real and exponential using character digits. This is the default and is suitable when importing the extract data into a PC spreadsheet tool.

**SUFACTOR**

Specifies a CPU SU conversion factor to apply to the HDB container. The SUFACTOR operand includes two keywords to identify the HDB name and its associated conversion factor. The value must be a decimal number or integer in the range 1 - 999999999 (nine 9s).

When reporting or extracting HDB records the CPU SU conversion factor will only be applied when field CPUSU is not present in the HDB record. In other words, if field CPUSU is in the HDB record, it will be reported as is, otherwise, it will be calculated using the CPU SU conversion factor.

**INTERVAL**

This operand applies to Summary HDBs. It specifies a time interval when the extract summarizes transaction activity over time. The interval is in the range 1 second to 24 hours in the format *hh:mm:ss* for hours, minutes, and seconds.

Data in a Summary HDB is already summarized by the interval that was used to load the data. This is the value specified in the HDB or, if Time Interval was not specified in the HDB, the value defined in the Template.

You can further summarize the data by specifying a multiple of the interval that was used to load the data. Specify a value in the range 00:00:01 (1 second) to 24:00:00 (24 hours). For example, specify 00:15:00 if you want to summarize transaction activity over 15 minute intervals. If

you are reviewing many days worth of data then you might specify 24:00:00 (24 hours) so that you can view the daily trend.

**Notes:**

- If you specify a reporting interval that is equal to or less than the interval that was used to load the data, the report or extract uses the data as-is, without further summarization.
- If you do not specify a reporting interval it defaults to the interval that was used to load the data, unless that value is less than 1 minute, in which case the reporting interval is set to 1 minute.

A time interval of less than one hour must fit evenly into the hour. CICS PA will round it down to the nearest interval that aligns to the hour. For example, 1.35 is reduced to 00:01:30 minutes which will produce 40 interval report lines for each hour of data.

A time interval of more than one hour must fit evenly into the day. CICS PA will round it down to the nearest interval that aligns to the day. For example, 10.30.23 is reduced to 08:00:00 hours which will produce 3 interval report lines for each day of data.

Minutes take precedence for an abbreviated entry. For example:

- 1 becomes 00:01:00
- 1.1 becomes 00:01:00 (rounded down from 00:01:01)
- 1.1.1 becomes 01:00:00 (rounded down from 01:01:01)

**FIELDS**

Specifies which fields are extracted, the order in which they appear in the extract, and their summarization presentation. Only fields that are specified in the HDB Template can be specified. Fields not contained in the HDB are written as **Missing**.

**SELECT, SELECT2**

Specifies what data to include or exclude from the extract based on data field values. See “Using SELECT statements” on page 525 for an explanation and examples.

Only fields that are specified in the HDB Template can be specified. Select Fields not contained in the HDB will cause selection to fail and extract will skip the record. SELECT and SELECT2 can both be specified to perform record filtering. The CICS PA dialog generates SELECT2 statements in the command deck when you use a Report Form that has active Selection Criteria. If both SELECT and SELECT2 are specified, then the record must pass selection by both specifications for it to be included in the extract.

---

## HDB Export to DB2

The CICS PA dialog can generate JCL to define DB2 tables and then export HDBs to those tables. This JCL uses utilities supplied with DB2: DSNTIAD to define tables, and DSNUTILB to load tables.

You can export an HDB to DB2 either:

- In the same job in which you load the HDB with SMF data
- or
- In an export-only job, some time after loading the HDB

For an example of JCL that loads an HDB and exports to DB2 in the same job, see Figure 378 on page 660.

---

## HDB Housekeeping

The **HDB(HKEEP)** operand requests CICS PA to perform housekeeping on the Repository (DDname **CPAHDBRG**). Housekeeping deletes expired HDB container data sets and DB2 data and removes definitions from the Repository that are no longer required.

The command format is:

```
CICSPA HDB(HKEEP)
```

**Note:** There is a second function available in HDB housekeeping, **Repair Repository using VERIFY command**. This is available only from the CICS PA dialog.

### JCL for HDB housekeeping

The following JCL is an example of the job stream for requesting HDB housekeeping.

```
//CPAHDBK JOB (Job Accounting)
//*
//CICSPA EXEC PGM=CPAMAIN,PARM='UPPER'
//STEPLIB DD DSN=CICSPA.V5R2M0.SCPALINK,DISP=SHR
//CPAHDBRG DD DSN=USER.CICSPA.XYX.REPOSTRY,DISP=SHR
//SYSPRINT DD SYSOUT=*
//SYSIN DD *
        CICSPA HDB(HKEEP)
/*
//CPAHKDEL DD DSN=&CPAHKDEL,DISP=(NEW,PASS),
//          UNIT=DASD,
//          SPACE=(CYL,(1,1))
/*
//DELETE EXEC PGM=IDCAMS,COND=(0,NE,HKEEP)
//SYSPRINT DD SYSOUT=*
//SYSIN DD DSN=&CPAHKDEL,DISP=(OLD,DELETE)
/*
/* DELETE EXPIRED DB2 TABLE ROWS
//RUNTIAD EXEC PGM=IKJEFT01,DYNAMNBR=20
//STEPLIB DD DISP=SHR,DSN=DB2.SDSNLOAD
//          DD DISP=SHR,DSN=DB2.SDSNEXIT
//SYSTSPRT DD SYSOUT=*
//SYSTSIN DD *
        DSN SYSTEM(DB2P)
        RUN PROGRAM(DSNTIAD) -
          LIB('DB2.RUNLIB.LOAD') PLAN(DSNTIAD)
/*
//SYSPRINT DD SYSOUT=*
//SYSUDUMP DD SYSOUT=*
//SYSIN DD *
DELETE FROM CPAX.CPA_TRANTLST
WHERE
  START_DATE < '2012-12-29' or
  (START_DATE = '2012-12-29' AND START_TIME <= '12.00.00');
COMMIT;
/*
```

*Figure 407. JCL for HDB housekeeping*

Note that the data sets and DB2 data are deleted by subsequent job steps.

## HDB examples

This example shows you how to use one command to request a List HDB load and report, and a Summary HDB load and report. Sample output is also shown.

```
CICSPA IN(SMFIN001),
  HDB(OUTPUT(HDBL0001),LOAD(LIST01)),
  HDB(OUTPUT(HDBR0001),REPORT(LIST01)),
  HDB(OUTPUT(HDBL0002),LOAD(SUMMARY2)),
  HDB(OUTPUT(HDBR0002),REPORT(SUMMARY2))
```

```
V5R2M0                                CICS Performance Analyzer
                                      HDB LOAD Recap Report
HDBL0001 Printed at 12:03:45 11/12/2013   Data from 15:41:19 12/13/2004 to 16:19:11 12/13/2004   Page      1

LOAD requested for HDB: LIST01   Repository DSN: CPPX.CICSPA.XYX.REPOSTRY

The following Container(s) were created and loaded:
  Container DSN: SKU.LIST01.D03223.T142645.HDB           No of Records: 119
  Start Time Stamp: 2004-12-13-15.41.19.025360   End Time Stamp: 2004-12-13-16.19.11.850894

LOAD process complete.
```

*Figure 408. List HDB Load Recap report*

```
V5R2M0                                CICS Performance Analyzer
                                      Historical Database List
HDBR0001 Printed at 12:03:45 11/12/2013   Data from 15:41:28 12/13/2004   Page      1
```

Start Time	MVS	APPLID	Tran	Userid	Program	TaskNo	Response Time	Dispatch Time	User CPU Time	Suspend Time	DispWait Time	FC Wait Time	FCAMRq	IR Wait Time
15:41:28.649	P390	CICS53A1	CPLT	CICSUSER	DFHSIPLT	6	.5196	.1771	.0316	.3425	.3422	.0000	0	.0000
15:41:29.598	P390	CICS53A1	CSSY	CICSUSER	DFHAPATT	15	.4595	.0036	.0033	.4558	.0000	.0000	0	.0000
15:41:29.604	P390	CICS53A1	CSSY	CICSUSER	DFHAPATT	16	.9663	.0069	.0088	.9594	.0795	.0000	0	.0000
15:41:29.610	P390	CICS53A1	CSSY	CICSUSER	DFHAPATT	17	4.0131	.1379	.0311	3.8752	1.7449	.0000	0	.0000
15:41:29.570	P390	CICS53A1	CSSY	CICSUSER	DFHAPATT	12	4.2133	.1621	.0494	4.0511	2.5906	.0000	0	.0000
15:41:29.191	P390	CICS53A1	CGRP	CICSUSER	DFHZCGRP	11	5.1156	.1956	.0603	4.9199	1.9401	.0000	0	.0000
15:41:29.591	P390	CICS53A1	CSSY	CICSUSER	DFHAPATT	14	4.7978	.1880	.0652	4.6098	2.3487	.0000	0	.0000
15:41:29.178	P390	CICS53A1	CSSY	CICSUSER	DFHAPATT	10	5.2738	1.4746	.2259	3.7992	.6720	.0000	0	.0000
15:41:29.177	P390	CICS53A1	CSSY	CICSUSER	DFHAPATT	9	5.3366	.7647	.1494	4.5719	1.6657	.0000	0	.0000
15:41:29.590	P390	CICS53A1	CSSY	CICSUSER	DFHAPATT	13	5.2787	.7009	.1740	4.5778	2.0694	.0000	0	.0000
15:42:24.011	P390	CICS53A1	CLQ2	CICSUSER	DFHLUP	19	7.2473	.2907	.0416	6.9566	1.9555	.0000	0	3.7840
15:41:29.172	P390	CICS53A1	CSSY	CICSUSER	DFHAPATT	111	74.6388	48.6230	18.0249	26.0158	7.7521	.6756	1506	.0000
15:42:43.395	P390	CICS53A1	CLR2	CICSUSER	DFHLUP	20	.4513	.0130	.0128	.4383	.0215	.0000	0	.4363

*Figure 409. List HDB report*

```
V5R2M0                                CICS Performance Analyzer
                                      HDB LOAD Recap Report
HDBL0002 Printed at 12:03:45 11/12/2013   Data from 15:41:00 12/13/2004 to 16:19:00 12/13/2004   Page      1

LOAD requested for HDB: SUMMARY2   Repository DSN: CPPX.CICSPA.XYX.REPOSTRY

The following Container(s) were created and loaded:
  Container DSN: SKU.SUMMARY2.D03323.T142648.HDB           No of Records: 70
  Start Time Stamp: 2004-12-13-15.41.00   End Time Stamp: 2004-12-13-16.19.00

LOAD process complete.
```

*Figure 410. Summary HDB Load Recap report*

V5R2M0				CICS Performance Analyzer												
				Historical Database Summary												
HDBR0002 Printed at 12:03:45 11/12/2013				Data from 15:41:00 12/13/2004 to 16:19:00 12/13/2004											Page	1
Start	MVS	APPLID	Tran	#Tasks	Avg Response Time	Avg Dispatch Time	Avg User CPU Time	Avg Suspend Time	Avg DispWait Time	Avg FC Wait Time	Avg FCAMRq	Avg IR Wait Time	Avg SC24UWHM			
Interval																
2004/12/13 15:41	P390	CICS53A1	CGRP	1	5.1156	.1956	.0603	4.9199	1.9401	.0000	0	.0000	0			
2004/12/13 15:41	P390	CICS53A1	CPLT	1	.5196	.1771	.0316	.3425	.3422	.0000	0	.0000	0			
2004/12/13 15:41	P390	CICS53A1	CSSY	9	11.6642	5.7846	2.0813	5.8796	2.1025	.0751	167	.0000	0			
2004/12/13 15:41	P390	CICS53A1		11	10.0557	4.7668	1.7113	5.2890	1.9277	.0614	137	.0000	0			
2004/12/13 15:41	P390	CICS53T1	CGRP	1	5.4980	.7931	.0613	4.7049	3.7141	.0000	0	.0000	0			
2004/12/13 15:41	P390	CICS53T1	CPLT	1	.3939	.0782	.0325	.3158	.3149	.0000	0	.0000	0			
2004/12/13 15:41	P390	CICS53T1	CSSY	9	11.1753	5.7900	2.0359	5.3853	2.5363	.2112	167	.0000	0			
2004/12/13 15:41	P390	CICS53T1		11	9.6790	4.8164	1.6743	4.8626	2.4415	.1728	137	.0000	0			
2004/12/13 15:41	P390			22	9.8674	4.7916	1.6928	5.0758	2.1846	.1171	137	.0000	0			
2004/12/13 15:41				22	9.8674	4.7916	1.6928	5.0758	2.1846	.1171	137	.0000	0			
2004/12/13 15:42	P390	CICS53A1	CLQ2	1	7.2473	.2907	.0416	6.9566	1.9555	.0000	0	3.7840	0			
2004/12/13 15:42	P390	CICS53A1	CLR2	1	.4513	.0130	.0128	.4383	.0215	.0000	0	.4363	0			
2004/12/13 15:42	P390	CICS53A1	CRSQ	1	.7659	.0740	.0247	.6919	.6893	.0000	0	.0000	0			
2004/12/13 15:42	P390	CICS53A1	CSFU	1	.3998	.3770	.0234	.0228	.0184	.0000	0	.0000	0			
2004/12/13 15:42	P390	CICS53A1	CSHQ	1	2188.102	2.5956	.2007	2185.506	.4205	.0000	0	.0000	0			

Figure 411. Summary HDB report



---

## Chapter 24. Analyzing HDB DB2 Export data

After HDB data has been loaded into DB2, you can use your favorite DB2 query tool to analyze the data.

This chapter describes the format of the HDB data fields and gives examples that show you how to use QMF™ SQL queries to analyze the data.

For more information on working with DB2, see the *DB2 UDB for z/OS Administration Guide*.

---

### Field formats

CICS PA saves data in its container data sets in a format suitable for loading directly into DB2 tables. Field data saved in the container data set depends on its CMF data type and the HDB type.

The following tables outline the various data types and how data is saved for each type of HDB.

#### List HDB fields

*Table 15. Format of List HDB fields*

CMF Data Type	DB2 Data Type	Field Length
T – Time stamp (see note 1)	TIMESTAMP 'YYYY-MM-DD-HH.MM.SS.THMIJU'	26
C – Character	CHAR(n)	Same as CMF field length. For example, TRAN has length 4.
A – Counter	INT	4
P – Packed	INT	4
S – Clock	TIME component is FLOAT COUNT component is INT	8 4
Other Clocks (see note 2)	FLOAT	8

#### Summary HDB fields

*Table 16. Format of Summary HDB fields*

CMF Data Type	DB2 Data Type	Field Length
T – Time stamp (see note 1)	Date component is DATE: 'YYYY-MM-DD' One-byte separator is '-' Time component is TIME: 'HH.MM.SS'	10 1 8
C – Character	CHAR(n)	Same as CMF field length. For example, TRAN has length 4.
A – Counter (see note 3)	Two FLOAT numbers: Total Sum of Squares	8 8

Table 16. Format of Summary HDB fields (continued)

CMF Data Type	DB2 Data Type	Field Length
P – Packed (see note 3)	Two FLOAT numbers:	
	Total	8
	Sum of Squares	8
S – Clock	TIME is two FLOAT numbers:	
	Total	8
	Sum of Squares	8
	COUNT is two FLOAT numbers:	
	Total	8
	Sum of Squares	8
Other Clocks (see note 2)	Two FLOAT numbers:	
	Total	8
	Sum of Squares	8
TASKCNT TASKCNT (see note 4)	FLOAT	8

**Note:**

1. Time stamp fields are loaded differently for List and Summary HDBs. List HDB time stamps are loaded as a full **TIMESTAMP**. Summary HDB time stamps are broken down into their **DATE** and **TIME** components. This provides more flexibility to summarize data over time.
2. “Other Clocks” include special fields like **RESPONSE** (response time) which are derived from other fields (**RESPONSE** = **STOP** minus **START**).
3. For summary HDBs, CICS PA keeps 2 accumulators for count and clock fields; **Total** and **Sum of Squares**. **Total** is used to calculate average. **Sum of Squares** is used to calculate standard deviation and peak percentiles.
4. **TASKCNT** and **TASKCNT** are special counters in the Summary HDB. **TASKCNT** is the number of transactions (tasks) that were accumulated to build this summary record. **TASKCNT** is the number of Task Termination records. Either **TASKCNT** or **TASKCNT** is used to calculate the average of count and clock fields.

## Time precision

CICS PA stores time fields in **FLOAT** format in units of seconds and a precision of micro-seconds. For example, if the accumulated response time total in a Summary HDB is 10.202122 and the task count (**TASKCNT** field) for this interval is 20, then the average response time is  $10.202122/20=0.510106$  seconds.

## SQL queries for Summary HDB

Summary tables contain data exported from a Summary HDB. Summary tables are the most commonly used for performance reporting.

### Simple query

Summary tables are already summarized (by time), so a basic query does not require any scalar functions. The following query lists selected fields in the summary table:

```

SELECT TRAN,
       INT(TASKCNT)           AS TASKCNT,
       DEC(RESPONSE_TIME,8,2) AS RESPONSE_TIME,
       DEC(CPU_TIME,8,2)      AS CPU_TIME,
       DEC(SUSPEND_TIME,8,2)  AS SUSPEND_TIME,
       DEC(DISPATCH_TIME,8,2) AS DISPATCH_TIME
FROM CICSPA.CICSP1H

```

This query produces output like the following:

TRAN	TASKCNT	RESPONSE TIME	CPU TIME	SUSPEND TIME	DISPATCH TIME
CSOL	1	1887.43	16.00	9.00	16.00
CSMT	1	1887.22	16.00	9.00	16.00
FICX	1	0.00	1.00	1.00	1.00
SU4B	1	0.07	625.00	625.00	625.00
CWBG	1	0.00	1.00	1.00	1.00
BIC2	1	0.00	1.00	1.00	1.00
BIC2	1	0.00	1.00	1.00	1.00
AP77	1	1.17	3969.00	3969.00	3969.00
CAMA	1	0.01	25.00	25.00	25.00
CKPT	4	0.56	2313.00	2313.00	2313.00
CM99	1	0.01	1.00	1.00	1.00
CNA7	9	0.47	180.00	180.00	180.00
CNB0	3	0.17	891.00	891.00	891.00

Figure 412. Simple SQL query against Summary DB2 table

## Grouping by APPLID

The following query summarizes all transactions that ran yesterday, grouping by APPLID.

```

SELECT APPLID,
       INT(SUM(TASKCNT))           AS TASK_COUNT,
       DEC(SUM(CPU_TIME),16,4)     AS TOTAL_CPU,
       DEC(SUM(CPU_TIME)/SUM(TASKCNT),5,4) AS AVE_CPU,
       DEC(SUM(RESPONSE_TIME)/SUM(TASKCNT),5,4) AS AVE_RESPONSE
FROM CICSPA.CICSPX
WHERE START_DATE = CURRENT_DATE - 1 DAY
GROUP BY APPLID
ORDER BY APPLID

```

This query produces output like the following:

APPLID	TASK COUNT	TOTAL CPU	AVE CPU	AVE RESPONSE
CICSP1	900	10.1467	0.0112	0.1520
CICSP2	520	1.0163	0.0019	0.1647
CICSP3	972	6.4394	0.0066	0.0882
CICSP4	36	0.6607	0.0183	0.2049
CICSP5	504	5.7875	0.0114	0.1400
CICSP6	504	5.6444	0.0111	0.1202
CICSP7	504	5.7117	0.0113	0.1021
CICSP8	540	6.1050	0.0113	0.1508
CICSP9	540	5.9684	0.0110	0.1515
CICSP10	180	1.6885	0.0093	0.1451

Figure 413. SQL query grouping yesterday's transactions by APPLID

## Calculating averages

Averages are calculated by dividing the field value by the task count (TASKCNT).

The following query calculates the average response time.

```
SELECT TRAN,
       INT(SUM(TASKCNT))                AS "Task Cnt",
       DEC(SUM(RESPONSE_TIME),8,4)      AS "Response Time Tot",
       DEC(SUM(RESPONSE_TIME)/SUM(TASKCNT),8,4) AS "Response Time Ave"
FROM CICSQA.CICSPIH
GROUP BY TRAN
ORDER BY TRAN
```

This query produces output like the following:

TRAN	Task Cnt	Response Time Tot	Response Time Ave
----	-----	-----	-----
APN8	3	2.1231	0.7077
AP01	27	0.9987	0.0369
AP02	42	10.3802	0.2471
AP04	4	1.2992	0.3248
CATA	19	0.5517	0.0290
CATD	19	0.4133	0.0217
CKBP	1297	148.2471	0.1143
CMNE	2	1.3765	0.6882
CMNK	2	0.5178	0.2589
CMN1	2	0.4091	0.2045
CMOB	8	2.7378	0.3422

Figure 414. SQL query calculating average response time

## Calculating standard deviation

Standard Deviation is a statistical estimate of the amount of variation in numerical values. The higher the standard deviation the more variation in the values. CICS PA requires the Sum of Squares to be loaded into the DB2 table to calculate standard deviation.

The following example calculates the standard deviation of response time. The CASE statement shows the function required to calculate standard deviation.

```
SELECT TRAN,
       INT(SUM(TASKCNT))                AS TASKCNT,
       DEC(SUM(RESPONSE_TIME),8,6)      AS RESPONSE_TIME_TOT,
       DEC(SUM(RESPONSE_TIME)/SUM(TASKCNT),8,6) AS RESPONSE_TIME_AVG,
       CASE WHEN (SUM(TASKCNT) > 1) THEN
         DEC(SQRT(((SUM(TASKCNT)*SUM(RESPONSE_TIME_SSQ))
                   -POWER(SUM(RESPONSE_TIME),2))
                /(SUM(TASKCNT)*(SUM(TASKCNT)-1))),10,4)
       ELSE 0
       END                               AS RESPONSE_TIME_DEV
FROM CICSQA.CICSPIH
GROUP BY TRAN
```

This query produces output like that shown in Figure 415 on page 703

TRAN	TASKCNT	RESPONSE TIME TOT	RESPONSE TIME AVG	RESPONSE TIME DEV	
-----	-----	-----	-----	-----	\$
SGM	1	0.418736	0.418736	0.0000	
ABAL	3	0.002592	0.000864	0.0000	
ATRN	7	0.007104	0.001014	0.0001	
AUTS	1	0.000752	0.000752	0.0000	
BALA	4	0.004016	0.001004	0.0004	
CATA	2	0.006336	0.003168	0.0000	
CRSR	5	0.001696	0.000339	0.0000	
CSGM	1	0.000528	0.000528	0.0000	
CSMI	11	0.009120	0.000829	0.0004	
CSSN	2	0.001232	0.000616	0.0000	
DESC	2	0.001280	0.000640	0.0000	

Figure 415. SQL query calculating standard deviation of response time

## Calculating peak percentile

Peak Percentile is a statistical estimate (based on the Normal Distribution) that provides an upper limit value of when nn% of tasks completed processing. For example 90% of transactions had a response time of 1 second or less. Peak Percentile allows you to measure whether workload targets are being met.

The following query calculates the 90% peak percentile of response time. The CASE statement shows the function required to calculate peak percentile.

```

SELECT TRAN,
       INT(SUM(TASKCNT))                AS TASK_COUNT,
       DEC(SUM(RESPONSE_TIME),8,6)      AS RESPONSE_TIME_TOT,
       DEC(SUM(RESPONSE_TIME)/SUM(TASKCNT),8,6) AS RESPONSE_TIME_AVE,
       CASE WHEN (SUM(TASKCNT) > 1) THEN
         DEC((1.282*SQRT(((SUM(TASKCNT)*SUM(RESPONSE_TIME_SSQ))
          -POWER(SUM(RESPONSE_TIME),2))
          / (SUM(TASKCNT)*(SUM(TASKCNT)-1))))
          +SUM(RESPONSE_TIME)/SUM(TASKCNT),10,8)
       ELSE DEC(SUM(RESPONSE_TIME)/SUM(TASKCNT),10,8)
       END                               AS "RESPONSE_PEAK_90%"
FROM CICSPA.CICSPIH
GROUP BY TRAN
ORDER BY TRAN

```

This query produces output like the following:

TRAN	TASK COUNT	RESPONSE TIME TOT	RESPONSE TIME AVE	RESPONSE PEAK 90%
-----	-----	-----	-----	-----
ABAL	3	0.002592	0.000864	0.00095340
APOS	4	0.003392	0.000848	0.00094987
ASUM	4	0.003488	0.000872	0.00092082
AUTS	1	0.000752	0.000752	0.00075200
BALA	4	0.004016	0.001004	0.00163763
BDEP	1	0.000704	0.000704	0.00070400
CATA	2	0.006336	0.003168	0.00316800
CSMI	11	0.009120	0.000829	0.00138661
EORE	3	0.004272	0.001424	0.00215297
ERLE	2	0.002336	0.001168	0.00148709
MBOX	1	0.000816	0.000816	0.00081600
NEWS	2	0.001952	0.000976	0.00138211

Figure 416. SQL query calculating 90% peak percentile of response time

Peak Percentiles are calculated using the formula:  

$$\text{Factor} \times \text{Standard Deviation} + \text{Average}$$

In the example, the Factor for 90% is 1.282. The following table shows the Factors for each 5 percentile above 50% (the average):

0.126	55%
0.253	60%
0.385	65%
0.524	70%
0.674	75%
0.842	80%
1.036	85%
1.282	90%
1.645	95%

---

## SQL queries for List HDB

List HDB data is typically used to drill down to isolate performance problems or for ad-hoc reporting.

Take care when exporting List HDBs into DB2. The volume of data can be high, resulting in a table that is too large to manage.

### Top ten worst transaction times

The following query reports the top 10 worst response times:

```
SELECT TRAN,
       TIME(START)           AS "Start Time",
       DEC(RESPONSE_TIME,10,4) AS "Response Time",
       DEC(CPU_TIME,10,4)     AS "CPU Time",
       DEC(SUSPEND_TIME,10,4) AS "Suspend Time",
       DEC(DISPATCH_TIME,10,4) AS "Dispatch Time"
FROM CPADB.AORLIST
ORDER BY RESPONSE_TIME DESC
FETCH FIRST 10 ROWS ONLY
OPTIMIZE FOR 10 ROWS
```

This query produces output like the following:

TRAN	Start Time	Response Time	CPU Time	Suspend Time	Dispatch Time
----	-----	-----	-----	-----	-----
CSOL	13.14.34	1887.6433	0.0004	1887.6428	0.0005
CQRY	14.26.57	11.1696	0.0008	11.1636	0.0060
MV02	14.09.45	10.8949	0.0176	10.8724	0.0225
TANS	13.47.03	9.1463	0.3634	8.6515	0.4948
TANS	14.16.50	7.6264	0.3534	7.1469	0.4795
MV14	14.25.33	6.0772	0.0216	6.0395	0.0377
ADBQ	12.00:40	4.0492	0.0023	0.0011	0.0012
CDAA	14.25.33	3.0232	0.0153	0.0120	0.0129
BINS	11.12.54	2.0112	0.0022	0.0221	0.0177
CFIM	12.11.31	1.0938	0.0153	0.0122	0.0032

*Figure 417. SQL query listing top 10 worst response times*

---

## Chapter 25. Analyzing CSV extract data

An extract data file such as an HDB extract or Performance Data extract is a delimited text file that can be imported into PC spreadsheet or database tools for further reporting and analysis.

---

### Importing into Lotus Symphony Spreadsheets

To import the extracted data into Lotus Symphony, follow these steps:

1. In Lotus Symphony, click **File > Open** from the main menu.
2. Select the .csv file to be opened. You might have to go to another folder or drive to find it.
3. Click **Open**. Lotus Symphony displays the Text Import window.
4. In the “Separator options” area, either choose one of the separator characters to indicate the delimiter, or type the delimiter character in the **Other** text box.  
The preview area shows how the imported text will look after it is separated into columns.
5. Click **OK**. After a few seconds of processing, Lotus Symphony imports the data into records in the worksheet.

---

### Importing into Lotus Approach

To import the extracted text file performance data set into Lotus Approach®, switch to the Approach Browse environment, and follow these steps:

1. In Approach, click the **Import** SmartIcon or choose **File - Import Data**. Approach opens the Import Data dialog box.
2. Select a text type of **Text - Delimited (\*.TXT)**.
3. Select the file to be imported. You might have to go to another folder or drive to find it.
4. Click **Import**. Approach displays the Text File Options dialog box.
5. Either click the option button to indicate the character that separates the data fields or type the separator character in the **Other** text box.
6. Place a checkmark in the **First Row Contains Field Names** checkbox. A checked checkbox is the default.
7. Click **OK**. Approach opens the Import Setup dialog box.
8. Drag the fields on the right side of the dialog box to match the related fields on the left side.
9. Click **OK**. After a few seconds of processing, Approach imports the data into records at the end of the file.
10. Edit the new records as needed.





---

## Part 7. Reference

The chapters in this part provide reference information about CICS PA:

- The “Messages” chapter lists the error messages and descriptions.
- The “Problem Determination” chapter provides advice to avoid user errors and help diagnose problems.
- There are three cross-reference tables to help you more easily use CICS PA and understand the data it is reporting. They apply to CMF performance class and transaction resource class data:
  - The “CMF Field IDs by CICS version” chapter contains a cross-reference table relating the CICS monitoring facility (CMF) fields with the corresponding CICS PA field names and CICS version.
  - The “CICS PA field names by CICS version” chapter contains a cross-reference table relating the CICS PA field names with the corresponding CICS CMF fields and CICS version.
  - The “Fields by forms, HDB templates” chapter contains a cross-reference table relating the CICS PA field names with the Report Forms and HDB Templates where they can be specified.



---

## Chapter 26. Messages

This section lists all the messages issued by CICS PA, a brief description of each, the action the system takes when the message is issued, and the action you should take when you get the message. The return codes set at the completion of batch processing are also listed.

The types of messages and their format are described, followed by the messages in numerical order.

The types of CICS PA messages are:

### Number

### Type

#### 0001–0999

**Batch processing.** These messages are issued during CICS PA report processing due to command errors, I/O and file errors, to give the status of job execution, and so on.

#### 1000–1099

**CICS PA dialog.** These messages are issued by the CICS PA dialog during JCL generation, or when creating Report Sets, Report Forms, Object Lists, and so on. For other CICS PA dialog messages, refer to the Online Help.

#### 2000–2099

**Data take-up.** These messages are issued during take-up processing. See “Personal Take-Up from SMF File” on page 104.

#### 3000–3099

**HDB.** These messages are issued during HDB processing. See Chapter 22, “Using the HDB dialog,” on page 627.

#### 4000–4099

**HDB SMF Statistics.** These messages are issued during HDB Statistics report processing. See Chapter 19, “Using the Statistics reporting dialog,” on page 551.

---

## Return codes

The following return codes are set by CICS PA at the completion of batch processing:

RC	Meaning
----	---------

0	Batch processing completed successfully.
4	Batch processing completed successfully, but a warning message was issued.
8	Batch processing completed, but an error message was issued. Some reports might not have completed.
16	Batch processing failed because of a command error.

---

## Message format

The CICS PA messages begin with a unique message identifier, followed by message text which might contain variable information to identify the particular circumstance which caused the message.

The message identifier has the format **CPAnnnnx** where:

- CPA** The **program identifier** identifies the message as a CICS PA message. All CICS PA messages begin with CPA.
- nnnn** The **message identification number** is a four-digit number that uniquely identifies each message.
- x** The **severity level** is a letter that indicates the return code (see “Return codes” on page 709), the purpose of the message, and the type of response required.

The severity levels, from least to most severe, are:

- I** Information. No action is required.
- W** Warning. CICS PA has detected a possible error condition that the user should evaluate.
- E** Error. User action is required before CICS PA can continue processing.
- S** Severe. CICS PA processing is suspended until action has been taken.

All batch command processing error messages have the same general format for the **Message Text** as follows:

Severity Prefix	Operand Data	General Error Text	Specific Error Text	Source Text
Warning or Severe	Operand in error	General error description	Specific error description	User input in error

The parts of the message are printed in the order shown in the diagram. Not all parts are present in every message. At least the general or specific text is present to describe the error.

### Severity Prefix

The first part of the message indicates whether the message is a warning message or a message which denotes a severe error. A warning is indicated by:

**\*\* Possible Error \*\***

A warning is issued for conditions that do not prevent report program execution. However, you should analyze all warning messages to determine if the conditions cited affect the expected results. Warning messages are not printed if PARM NOINFOMSGS has been specified.

A severe command error is indicated by one of two prefixes:

**\*\* Command Error \*\*\***

**\*\* Error During Scan \*\*\***

These messages are printed even if PARM NOINFOMSGS was specified. Most severe command errors cause a severe error flag to be set. At the end of command input processing, this flag is tested. If the flag tests true, no

record processors are run. CICS PA terminates at this point with a condition code of 16. To continue processing, you must correct the commands in error and resubmit the job.

#### **Operand Data**

If the error is associated with a recognizable operand, the operand is printed after the prefix. This part of the message is usually present. It is omitted when a recognizable operand cannot be associated with the error.

#### **General Error Text**

This describes the general nature of the error. It includes descriptive text appropriate for errors that can occur on any command; for example, a missing operand or label. This part of the message is usually present. It is omitted when the error is unique to the command being processed.

#### **Specific Error Text**

This is inserted by the individual command processor. It describes a condition unique to the command in error. Specific text might be provided in addition to the general text described previously to further clarify the error description. It can also be provided without general text, when the error condition is unique and the general text is inappropriate.

#### **Source Text**

This identifies the portion of the command input found to be in error during analysis. This part of the message is usually present.

Example:

If **CICSPA LIST(PUTPUT(LIST0001)** was coded when **CICSPA LIST(OUTPUT(LIST0001)** was intended, CICS PA provides the following message:

```
CPA0015E ** Command Error *** LIST Operand not recognized -  
valid values are: listed in the User's Guide.  
The suboperand is: PUTPUT(
```

This message indicates a severe error that must be corrected to continue report processing. The command contains a suboperand (PUTPUT) that is not recognized by the CICS PA command processor as a valid LIST operand. Correct the command by supplying valid values as defined by the specific error text. In this case, the specific error text directs you to this book. See Chapter 17, "Using the CICS PA commands," on page 383 which describes all the commands and operands.

The example message CPA0015E contains all five message parts:

#### **Message Part Text**

##### **Severity prefix**

\*\* Command Error \*\*\*

##### **Operand data**

LIST

##### **General error text**

Operand not recognized - valid values are:

##### **Specific error text**

listed in the User's Guide. The suboperand is:

##### **Source text**

PUTPUT(

## 0000–0999 Batch processing messages

These messages are issued during CICS PA report processing due to command errors, I/O and file errors, to give the status of job execution, and so on.

---

### CPA0000E Invalid Error Code – *CPAxxxx*

**Explanation:** A CICS PA module attempted to issue an error message using a message ID that is not defined. This is an internal logic error.

**System action:** Processing continues.

**User response:** Determine the issuing module and contact your IBM representative for help.

---

### CPA0001E NAME operand invalid – exceeds max allowable length

**Explanation:** A character string representing a name was flagged by CICS PA as being too long. Any name field associated with a DDNAME has a maximum length of 8.

**System action:** Processing is terminated.

**User response:** See “Operand value formats” on page 385 for syntax rules and restrictions on operands for the command in error. Correct the command input and resubmit the job.

---

### CPA0002E Operand has been previously used – this use overrides prior use

**Explanation:** The specified operand has been used previously in a command.

**System action:** The specified operand has been used previously in a command.

**User response:** Either be sure this override is intended or correct the command input to use the operand only once, and resubmit the job.

---

### CPA0003E DDname is missing or is DD DUMMY – use is ignored

**Explanation:** A command was entered using a DDNAME operand. However, the DD statement definition was not in the JCL stream. Execution proceeds, but could terminate at a later point if the DDNAME is for an input file or a required output file.

**System action:** Processing continues, but the report requiring this DDname might fail.

**User response:** Check for a spelling error on the DDNAME or OUTPUT operand, or supply the missing JCL statements, then resubmit the job.

---

### CPA0004E Operand is not recognized – skipping to next operand

**Explanation:** During command analysis, an operand

was expected but unrecognizable input was encountered.

**System action:** Processing is terminated after all commands are validated.

**User response:** Correct the command input and resubmit the job.

---

### CPA0005E \*\*\* Processing stopped on this command due to errors listed above

**Explanation:** One or more severe errors were encountered while processing the command input. No record processors are run. This message is preceded by additional command error messages describing the specific command input errors.

**System action:** Processing is terminated.

**User response:** Correct the command input and resubmit the job.

---

### CPA0006E Operand requires a value – none found

**Explanation:** The specified operand requires a value specified in parentheses. For example, the DDNAME operand was specified without a DDname value.

**System action:** The operand is skipped and command processing continues at the next operand. Processing is terminated after all commands are validated.

**User response:** Correct the command input by specifying the operand value and resubmit the job.

---

### CPA0007E Operand syntax invalid – skipping to next operand

**Explanation:** The specified operand has invalid syntax and is ignored by CICS PA.

**System action:** The operand is ignored and command processing continues at the next operand. Processing is terminated after all commands are validated.

**User response:** Correct the operand syntax and resubmit the job.

---

### CPA0009E Syntax invalid or not recognized

**Explanation:** The command or operand syntax is not supported by CICS PA.

**System action:** The command or operand is skipped and command processing continues. Processing is terminated after all commands are validated.

**User response:** Correct the command or operand syntax and resubmit the job.

---

**CPA0010E    Range specification invalid – first value exceeds second**

---

**Explanation:** A range was specified with a lower range value greater than the upper range value.

**System action:** The range specification is skipped and command processing continues. Processing is terminated after all commands are validated.

**User response:** Correct the range specification and resubmit the job.

---

**CPA0011E    Maximum specification exceeded**

---

**Explanation:** The maximum allowed value for an operand has been exceeded.

**System action:** The maximum accepted value is printed and is substituted for the specified input value. Processing continues.

**User response:** If the maximum value produces unsatisfactory results, correct the command input and resubmit the job.

---

**CPA0012E    Command requires a Label**

---

**Explanation:** The specified command requires an identifying label starting in column 1. The label can be 1 to 8 characters long.

**System action:** The command is ignored and command processing continues. Processing is terminated after all commands are validated.

**User response:** Specify a label and resubmit the job.

---

**CPA0013E    Processing continues for diagnostics**

---

**Explanation:** CICS PA has previously encountered an unrecoverable error and diagnostic processing is activated.

**System action:** Diagnostic messages are issued and processing terminates.

**User response:** Look for previous error messages to determine the reason for the problem. If unresolved, contact your IBM representative for help.

---

**CPA0014E    Operand required but not found**

---

**Explanation:** CICS PA determined that a required operand was not specified in the command input.

**System action:** The command is ignored and command processing continues. Processing is terminated after all commands are validated.

**User response:** Specify the required operand and resubmit the job.

---

**CPA0015E    Operand not recognized – valid values are:**

---

**Explanation:** An invalid operand was specified. A list of allowed operand values accompanies this message.

**System action:** The operand is ignored and command processing continues.

**User response:** Remove or correct the operand and resubmit the job.

---

**CPA0100S    STAE Exit invoked**

---

**Explanation:** An abend occurred when PARM STAE was specified or accepted as a default. This message might occur with another message for the error condition that triggered the abend. See “Batch Abends U1000, U1001, U1002” on page 754 for more information on STAE exits.

**System action:** Processing is terminated.

**User response:** Look for previous error messages to determine the reason for the problem. If unresolved, contact your IBM representative for help.

---

**CPA0114E    Attempting to free MQ entry not on queue**

---

**Explanation:** This is an internal logic error.

**System action:** The operation is ignored.

**User response:** Contact your IBM representative for help.

---

**CPA0115E    Invalid use of program – Dup use or no Prescan. Program deleted**

---

**Explanation:** This is an internal logic error.

**System action:** The record processor is deleted and execution continues.

**User response:** Contact your IBM representative for help.

---

**CPA0116E    xxxxxxxx Report Processor deleted – Requires Control Table**

---

**Explanation:** The report processor initialization could not find the control table for the indicated report processor. This is an internal logic error.

**System action:** The report processor is deleted, the request skipped, and execution continues.

**User response:** Contact your IBM representative for help.

---

---

**CPA0117E Invalid use of CAIDCOMD**

**Explanation:** Used for IBM debugging purposes.

**System action:** The execute command is ignored and processing continues.

**User response:** Contact your IBM representative for help.

---

**CPA0118E Invalid Operand Sublist Structure**

**Explanation:** The operand sublists are specified incorrectly. This is an internal logic error.

**System action:** The operand is skipped.

**User response:** Contact your IBM representative for help.

---

**CPA0119W Three fields max under SUMMARY(BY(\*\*,\*\*,\*\*)). Extras ignored.**

**Explanation:** More than three fields were specified for summarizing the data on the Performance Summary Report.

**System action:** Extra fields are ignored.

**User response:** The command stream must contain three or fewer SUMMARY(BY fields. Make corrections by eliminating the extra fields and resubmit the job.

---

**CPA0120S Error on some queue – Internal Logic Error**

**Explanation:** This is an internal logic error.

**System action:** Processing is terminated.

**User response:** Contact your IBM representative for help.

---

**CPA0121S Error in Prescan – Reprocess buffer full**

**Explanation:** This is an internal logic error.

**System action:** Processing is terminated.

**User response:** Contact your IBM representative for help.

---

**CPA0122E Length is a valid Suboperand only for CHARACTER**

**Explanation:** The LENGTH suboperand specified with the CROSSsystem report operand can be used with the character user field only. It is not valid with COUNT, CLOCKTIME, or CLOCKCOUNT user fields.

**System action:** The suboperand is ignored and processing continues.

**User response:** Examine the command stream, make the necessary corrections, and resubmit the job.

---

---

**CPA0123E Number not a valid suboperand for CHARACTER**

**Explanation:** The NUMBER suboperand specified with the CROSSsystem report operand is not valid for character user fields. It is used with COUNT, CLOCKTIME, or CLOCKCOUNT user fields.

**System action:** The suboperand is ignored and processing continues.

**User response:** Examine the command stream, make the necessary corrections, and resubmit the job.

---

**CPA0124E Invalid length specified for CHARACTER (LENGTH)**

**Explanation:** The length of the character user fields on the Cross-System Work report must be between 1 and 256.

**System action:** The suboperand is ignored and processing continues.

**User response:** Examine the command stream, make the necessary corrections, and resubmit the job.

---

**CPA0125E More than 50 user fields requested**

**Explanation:** A maximum of 50 user fields can be requested for generating a Cross-System Work Extract.

**System action:** The extra user fields are ignored and processing continues.

**User response:** Examine the command stream and make the necessary changes to reduce the number of user fields.

---

**CPA0126E Only one type of data record allowed under a SELECT operand**

**Explanation:** When using the SELECT operand, only one type of data record can be selected, such as PERFORMANCE or EXCEPTION. A separate SELECT operand must be used for each type of data record chosen.

**System action:** When using the SELECT operand, only one type of data record can be selected, such as PERFORMANCE or EXCEPTION. A separate SELECT operand must be used for each type of data record chosen.

**User response:** Examine the command stream, make the necessary corrections, and resubmit the job.

---

**CPA0127E Must have a VALUE operand for Selection**

**Explanation:** The VALUE suboperand, and its necessary operands, must be specified with the SELECT operand to determine selection criteria.

**System action:** Processing continues, but the results

---



from selection are unpredictable.

**User response:** Examine the command stream, make the necessary corrections, and resubmit the job.

---

**CPA0129W Three fields max under LISTX(BY(\*\*,\*\*,\*\*)). Extras ignored.**

**Explanation:** More than three fields were specified for sorting the data on the Performance List Extended Report.

**System action:** The extra fields are ignored.

**User response:** The command stream must contain three or fewer LISTX(BY fields. Make corrections by eliminating the extra fields and resubmit the job.

---

**CPA0131E PROFILING request, ID(nnnn), without matching BASELINE/REPORT**

**Explanation:** A PROFILING request has been found without matching BASELINE and REPORT commands.

**System action:** Request is terminated.

**User response:** Rerun request with matching commands.

---

**CPA0202E Data set open failed – Report Processors skipped, DDname=xxxxxxx**

**Explanation:** The indicated input data set could not be opened.

**System action:** All commands specifying reports using that input data set are skipped, and processing continues.

**User response:** Correct the JCL for the data set and resubmit the job.

---

**CPA0204E No DD card supplied; Routine deleted**

**Explanation:** The record processor indicated in the associated dump list has one specific input data set that must be included.

**System action:** The record processor is skipped and processing continues.

**User response:** Include a JCL statement for the data set to be used by the indicated record processor and resubmit the job.

---

**CPA0205E SORT Error – Permanent I/O Error, DDname=xxxxxxx**

**Explanation:** The sort module encountered a SYNAD error while attempting to perform an I/O operation on the data set referenced by data set xxxxxxx.

**System action:** Control returns to the module that issued the sort request.

**User response:** Look for any system message that

might be related to this error. Check the JCL and data set space allocation. The space requirements vary by application and by volume of input. The data set should be a temporary sequential data set. Do not specify the record format, logical record length, or block size in the JCL. Refer to the sample JCL specification in Figure 188 on page 367 for the correct JCL specification of the sort work data sets.

---

**CPA0206E SORT Error – INIT requested for open DCB, DDname=xxxxxxx**

**Explanation:** The CICS PA sort module has received a request from a record processor to reinitialize a data set, referenced by xxxxxxx, that is already in use. This might be an internal logic error.

**System action:** Control returns to the module that issued the INIT request.

**User response:** Check the JCL and command input stream. A sort work data set cannot be used by more than one application. If the data set appears to be defined correctly, contact your IBM representative for help.

---

**CPA0207E SORT Error – Key length exceeds 255, DDname=xxxxxxx**

**Explanation:** The combined length of all Key fields exceeds the maximum SORT key limit of 255 characters.

**System action:** Report processing stops.

**User response:** Remove Key fields to reduce the combined key length to no more than 255 characters.

---

**CPA0208E SORT Error – Data length exceeds 4095, DDname=xxxxxxx**

**Explanation:** This is an internal logic error. xxxxxxx is the name of the work data set associated with the sort error.

**System action:** Control returns to the module that issued the sort request.

**User response:** Contact your IBM representative for help.

---

**CPA0209E SORT Error – Key+Data length less than 1, DDname=xxxxxxx**

**Explanation:** This is an internal logic error. xxxxxxx is the name of the work data set associated with the sort error.

**System action:** Control returns to the module that issued the sort request.

**User response:** Contact your IBM representative for help.

---

**CPA0210E    SORT Error – Data Set open failed,  
DDname=xxxxxxx**

**Explanation:** The CICS PA sort module was unable to open the data set referenced by xxxxxxx.

**System action:** Control returns to the module that issued the sort request.

**User response:** Look for any system message that might be related to this error. Check the JCL and data set space allocation. The space requirements varies by application and by volume of input. The data set should be a temporary sequential data set. Do not specify the record format, logical record length, or block size in the JCL. Refer to the sample JCL specification in Figure 188 on page 367 for the correct JCL specification of the sort work data sets.

---

**CPA0211E    SORT Error – ADD attempted before  
INIT, DDname=xxxxxxx**

**Explanation:** The application is trying to add records to the data set before it has been initialized by the CICS PA sort module. This is an internal logic error.

**System action:** Control returns to the module that issued the sort request.

**User response:** Contact your IBM representative for help.

---

**CPA0212E    SORT Error – bad Return Code from  
SORT, DDname=xxxxxxx**

**Explanation:** The CICS PA sort module received a nonzero return code from the system sort routine attempting to sort the file xxxxxxx.

**System action:** Control returns to the module that issued the sort request.

**User response:** Look for any system message that might be related to this error. Ensure that the SYSOUT DD statement was specified. If so, look for SORT error messages in SYSOUT. Check the JCL and data set space allocation. The space requirements vary by application and by volume of input. The data set should be a temporary sequential data set. Do not specify the record format, logical record length, or block size in the JCL. Refer to the sample JCL specification in Figure 188 on page 367 for the correct JCL specification of the sort work data sets.

---

**CPA0213E    SORT Error – no records in file to read  
or sort, DDname=xxxxxxx**

**Explanation:** No input data was received. The probable cause is an empty data set or an input data set that does not contain the record IDs being selected.

**System action:** Control returns to the module that issued the sort request.

**User response:** Check the input data set for the record types required on the requested report. If the data set appears to be in order, contact your IBM representative for help.

---

**CPA0214E    SORT Error – SORT/Read running, 2nd  
request ignored, DDname=xxxxxxx**

**Explanation:** The CICS PA sort module received a request for a SORT or READ on a data set that has already processed a SORT or READ request. This might be an internal logic error.

**System action:** Control returns to the module that issued the sort request.

**User response:** A unique SORT work data set must be specified for each unique report using the sort facility. The names must match the PARMNAME of the reports. If the sort work data sets appear to be defined correctly, contact your IBM representative for help.

---

**CPA0215E    SORT Error – File failed to close,  
DDname=xxxxxxx**

**Explanation:** The CICS PA sort module received a nonzero return code after issuing a close macro on the data set xxxxxxx.

**System action:** Control returns to the module that issued the sort request.

**User response:** Contact your IBM representative for help.

---

**CPA0216E    Times out of sequence in Graph queue**

**Explanation:** The graph queue entries are not ordered by time. This problem might result from bad input data from the CICS Monitoring Facility (CMF) or from an internal logic error.

**System action:** The job abends with a user abend code.

**User response:** Review the input; if it appears to be correct, contact your IBM representative for help.

---

**CPA0217E    OFFSET value too large – exceeds queue  
size**

**Explanation:** This is an internal logic error.

**System action:** The job abends with a user abend code.

**User response:** Contact your IBM representative for help.

---

---

**CPA0218I    Record processing for SMF File *xxxxxxx* has started**

---

**Explanation:** CICS PA has commenced reading SMF records from the specified SMF File. SMF records are passed to the Report Processors to build the reports and extracts.

**System action:** Processing continues.

**User response:** None required.

---

**CPA0219I    End of File processing for SMF File *xxxxxxx+* has started**

---

**Explanation:** CICS PA has commenced End of File processing for the specified SMF File(s). A + (plus sign) after the DDname indicates that more than one SMF File was specified in the INPUT operand. The Report Processors are called to create the final reports or extracts.

**System action:** Processing continues.

**User response:** None required.

---

**CPA0220I    SMF records for System *xxxx* start at *mm/dd/yyyy hh.mm.ss.th***

---

**Explanation:** CICS PA has detected the first SMF record to process in the current SMF File. The specified system identifies the System ID of the SMF records.

**System action:** Processing continues.

**User response:** None required.

---

**CPA0221I    Dictionary Record read from SMF File  
DDname=*xxxxxxxxx*, +*nnn*,  
APPLID=*xxxxxxxxx*, SID=*xxxx*,  
Release=*v.r.m*, Record Date=*mm/dd/yyyy*,  
Time=*hh:mm:ss***

---

**Explanation:** CICS PA has detected a Dictionary record in the current SMF File, at concatenation +*nnn* if applicable, for the specified CICS APPLID and MVS system ID. CICS PA cannot start processing CMF performance records for an APPLID until the Dictionary record is read. The second line of this message details the date and time of the record, along with the CICS version.

**System action:** Performance reporting can commence for the specified APPLID.

**User response:** None required.

---

**CPA0222I    SMF records for System *xxxx* end at *mm/dd/yyyy hh.mm.ss.th***

---

**Explanation:** CICS PA has processed the last SMF record in the current SMF File. This message signifies that End of File for the current SMF File has been reached.

**System action:** Processing continues.

**User response:** None required.

---

**CPA0223W    SMF File *xxxxxxx* has no records to process**

---

**Explanation:** CICS PA has detected that there were no SMF records to process in the current SMF File. The reports and extracts will contain no data.

**System action:** Processing continues.

**User response:** Ensure that the CICS monitor is active during the time period that reporting is required.

---

**CPA0225E    *xxxxxxx* DCB failed to open**

---

**Explanation:** The data control block (DCB) for the indicated data set could not be opened.

**System action:** The function which uses that data set is not performed.

**User response:** Ensure that the data set was included in the JCL. If it was, correct the necessary parameters and resubmit the job.

---

**CPA0226I    Reporting started at *mm/dd/yyyy hh.mm.ss.th***

---

**Explanation:** CICS PA has detected the first CMF record within the specified SMFSTART/SMFSTOP time range.

**System action:** Reporting starts for the current SMF File.

**User response:** None required.

---

**CPA0227I    Reporting stopped at *mm/dd/yyyy hh.mm.ss.th***

---

**Explanation:** CICS PA has detected the first CMF record outside the specified SMFSTART/SMFSTOP time range.

**System action:** Reporting stops for the current SMF File.

**User response:** None required.

---

**CPA0228I    Dictionary Record from Dialog is being used, DDname=CPADICTR +*nnn*,  
APPLID=*xxxxxxxxx*, SID=*xxxx*,  
Release=*v.r.m*, Record Date=*mm/dd/yyyy*,  
Time=*hh:mm:ss***

---

**Explanation:** CICS PA has read a Dictionary record from the CPADICTR File, at concatenation +*nnn* if applicable, for the specified CICS APPLID. CICS PA needs to use it because a Performance record was encountered in the SMF File without a preceding Dictionary record. The third line of this message details

the date and time of the record, along with the CICS version.

**System action:** Performance reporting commences for the specified APPLID.

**User response:** None required.

**CPA0229I CICS PA has completed processing, RC=*nn***

**Explanation:** CICS PA has completed reporting with the specified return code. If the return code is not zero, then CICS PA encountered a problem while producing the reports.

**System action:** CICS PA terminates.

**User response:** None required.

**CPA0230I Dictionary Record default is being used, APPLID=xxxxxxx, Release=v.r.m**

**Explanation:** CICS PA is using the CICS default Dictionary record. CICS PA needs to use it because a Performance record was encountered in the SMF File without a preceding Dictionary record, and the Dictionary record for this APPLID could not be located in the CPADICTR File.

**System action:** Performance reporting commences for the specified APPLID.

**User response:** None required.

**CPA0231W Dictionary Record default cannot be used, APPLID=xxxxxxx, Release=v.r.m**

**Explanation:** CICS PA has tried to use the CICS default Dictionary record for the specified APPLID, but was unable to do so. The field connectors in the Performance records do not match the Dictionary record. CICS PA needs to use it because a Performance record was encountered in the SMF File without a preceding Dictionary record, and the Dictionary record could not be located in the CPADICTR File. The most likely cause of this problem is your MCT definition which might have removed some CMF fields.

**System action:** Performance records are ignored until a Dictionary record is encountered in the SMF file.

**User response:** Use the CICS PA dialog to create a Dictionary record for the offending APPLID. Then re-generate the report JCL, which will now include a CPADICTR DD statement containing the APPLID's Dictionary record. See "CICS System (APPLID) definition" on page 81 to see how to create a Dictionary DSN.

**CPA0232W Dictionary Record from Dialog cannot be used, APPLID=xxxxxxx, Release=v.r.m**

**Explanation:** CICS PA has read a Dictionary record from the CPADICTR File for the specified APPLID, but was unable to use it. The field connectors in the Performance records do not match the Dictionary record.

**System action:** Performance records are ignored until a Dictionary record is encountered in the SMF file.

**User response:** Ensure that the Dictionary record you created in the CICS PA dialog for the offending APPLID is correct. The most probable cause of this problem is your MCT definition. Ensure that when you build the Dictionary record in the CICS PA dialog that you specify the same MCT that your CICS system uses. Refer to "CICS System (APPLID) definition" on page 81 to see how to create a Dictionary DSN.

**CPA0233E Dynamic Allocation failed. RC=xx Error=xxxx Info=xxxx**

**Explanation:** CICS PA attempted to allocate an Object dynamically and was unsuccessful. The Return Code (RC) from the attempt as well as the Error and Information codes are provided to aid diagnosis.

**System action:** Further messages from the Dynamic Allocation request might be printed following this message. Processing of the CICS PA command is halted.

**User response:** Analyze the error, rectify the problem(s) causing the Request to fail and retry the CICS PA command.

**CPA0234I Record processing for Log Stream *log\_stream\_name* has started**

**Explanation:** CICS PA has commenced reading SMF records from the specified Log Stream. Records are passed to the Report Processors to build the reports.

**System action:** Processing continues.

**CPA0235I End of File processing for Log Stream *log\_stream\_name* has started**

**Explanation:** CICS PA has commenced End of File processing for the specified log streams. A + sign after the log stream name indicates that more than one log stream was specified in the INPUT operand. The Report Processors are called to create the final reports or extracts.

**System action:** Processing continues.



---

**CPA0238I Dictionary Record read from Log Stream**  
*log\_stream\_name, date\_time\_version*

**Explanation:** CICS PA has detected a Dictionary record in the current SMF log stream for the specified CICS APPLID and MVS System ID. CICS PA cannot start processing CMF Performance records for an APPLID until the Dictionary record is read. This message includes a second line that details the date and time of the record, along with the CICS version.

**System action:** Performance reporting can commence for the specified APPLID.

---

**CPA0239W Log Stream *log\_stream\_name* has no records to process**

**Explanation:** CICS PA has detected that there were no SMF records to process in the current log stream. The reports and extracts will contain no data.

**System action:** Processing continues.

**User response:** Ensure that the CICS monitor is active during the time period that reporting is required.

---

**CPA0240E Primary keys length exceeds key print area**

**Explanation:** CICS PA has detected that specified Primary keys will not fit into the Primary key print area of 3 lines x 132 characters.

**System action:** Processing terminates.

**User response:** Modify the Primary keys to fit into the Key print area and rerun.

---

**CPA0301E ID Selection checked was invalid – record ignored**

**Explanation:** This error message is issued from the selection module when the dictionary processor was unable to find the field being used in selection.

**System action:** The record is ignored and control returns for further record processing.

**User response:** Selection might have been specified using a field that was not collected in the CICS Monitoring Facility (CMF) record. Check the field selections in the command input stream against the fields collected in the CMF record. If the selected fields are being collected, contact your IBM representative for help.

---

**CPA0302E Missing *xxxxx* time in *xxxxxxxxxx* record – record ignored**

**Explanation:** The start or stop time was missing in the indicated record class.

**System action:** The record is ignored and control returns for further record processing.

**User response:** This might be a problem with the CICS Monitoring Facility (CMF) data. Analyze the data by using the CICS sample program DFH\$MOLS. Incorrect data in the CMF records is normally caused by not selecting a field for inclusion in the data.

If the data appears to be correct, this might be a problem with CICS PA. Contact your IBM representative for help.

---

**CPA0303E Number of Key fields exceed maximum of 8**

**Explanation:** CICS PA supports up to 8 Key fields.

**System action:** Report processing stops.

**User response:** Reduce the number of Key fields to 8 or less.

---

**CPA0310E Summary Key error - Key sequence error detected at field *xxxxxxx***

**Explanation:** The error can be due to either or both of the following reasons:

- The field named *xxxxxxx* was included in the key fields sequence but is not a valid key field. Key fields must be specified contiguously.
- A secondary key field was specified before a primary key field. Primary key fields must be specified before secondary key fields.

**System action:** Report processing stops.

**User response:** Delete the named field from the key sequence or move it to the correct position.

---

**CPA0311E Field ID *xxxxxxxxxxxx* is not defined to Dictionary – field ignored**

**Explanation:** The dictionary processor was unable to locate a CMF field required for the requested report. For CICS defined fields this may be due to the required field having been excluded from the performance class record by a user defined Monitoring Control Table (MCT). For user-defined fields this may be due to CICS PA not having processed the required dictionary before encountering the first data record.

**System action:** The requested field and all subsequent fields on the report are ignored.

**User response:** Analyze the CMF data using DFH\$MOLS for assistance in checking that the field ID required for the report is actually collected in the CMF record. If a user-defined Monitoring Control Table (MCT) is being used, then check that the requested field id has not been excluded from the performance record. The CICS journal utility program DFHJUP can be also used to further analyze the content of the CMF record the structure and format of which can be found in the *CICS Customization Guide*. If the necessary field ids are present in both the dictionary record and the

performance class records, contact your IBM representative for help.

---

**CPA0312E    Unknown type of field – all further fields ignored**

**Explanation:** An invalid type of field (the CICS 12-byte ID) was set up by the command processor. This is an internal logic error.

**System action:** The Performance List, Performance List Extended and Performance Summary reports are printed with the data to the left of the field in question on the print line. The field in question and all the fields to the right of it are ignored.

**User response:** Contact your IBM representative for help.

---

**CPA0313W    EOF reached before STOP record encountered**

**Explanation:** During the processing of history or alert monitor summary collections, end-of-file was reached on the input data set without encountering a stop record. The missing stop record might imply that part of the summary collection was lost or that the file is continued on another data set.

**System action:** A stop record is assumed. The data is summarized and the report printed.

**User response:** None required.

---

**CPA0314W    START record encountered after DETAIL record with no STOP record**

**Explanation:** A start record was encountered when a stop record was expected. A stop record, indicating the end of summary collection, was not written to the journal data set.

**System action:** When a start record follows a detail record, a stop record is implied. At that point, the summary portion of the report is printed. A new report is started for the start record and the following detail records.

**User response:** None required.

---

**CPA0316E    Report in xxxxxxxx has too many fields to print – extra fields ignored**

**Explanation:** CICS PA found that the number of fields requested for either the Performance List, Performance List Extended, or Performance Summary Reports could not fit on the print line. xxxxxxxx is the DDname of the report output for the particular report in error. The fields for these reports are requested using the FIELDS operand.

**System action:** The fields are truncated to show as much data as fits on the print line.

**User response:** Recode the FIELDS operand to request fewer fields. You might also consider running multiple reports if more data is needed than can fit on one line.

---

**CPA0317W    Truncated Monitor record encountered**

**Explanation:** CICS PA found that the record length was less than the record length that CICS wrote at the front of the record.

**System action:** CICS PA runs with the shorter record length. This might allow the program to complete normally. A fetch protection or other abends might occur due to the invalid data. All data on the report is in doubt.

**User response:** You should be sure that you have not copied the CICS CMF data with a utility that truncates without warning. These records can easily be truncated since they are in undefined record format and do not give length errors. You should consider increasing the block size of the output data set. Care must also be taken when concatenating the input data sets. The first data set must not have a smaller block size than the succeeding data sets. The data set with the largest block size must be at the beginning of the concatenation.

---

**CPA0318W    Padded Monitor record encountered**

**Explanation:** CICS PA found that the record length was longer than the record length that CICS wrote at the front of the record.

**System action:** CICS PA runs normally. You should be aware of this problem since it might be due to invalid data. You might also have caused this problem by copying the data from one unit to another with a utility that padded the record. If the record was padded, it will not use space efficiently and might affect the processing time of CICS PA.

**User response:** Determine why the record was padded and correct the problem.

---

**CPA0319E    Error in number of or offset to data fields**

**Explanation:** See "CPA0322E" on page 721.

---

**CPA0320E    Processing beyond end of SMF record attempted**

**Explanation:** See "CPA0322E" on page 721.

---

**CPA0321E    Data section length error**

**Explanation:** See "CPA0322E" on page 721.

---

---

**CPA0322E Error in number of or offset to Field Identifiers**

**Explanation:** One or more of the messages CPA0319E, CPA0320E, CPA0321E, or CPA0322E is issued when an incorrect record length, section length, or data field pointer is encountered during processing of the CICS Data Section in the SMF record. The error is in one of the following fields:

- Data Section Length
- Offset to field connectors (SMFMNDCA)
- Number of field connectors (SMFMNDCN)
- Offset to data records (SMFMNDRA)
- Number of data records (SMFMNDRN)

These fields are contained in the SMF Product Section, which precedes the CMF data records.

The format and description of the SMF Header, SMF Product Section, and CMF data records can be found in the *CICS Customization Guide*.

**System action:** CICS PA skips the record in error and continues processing the remaining records. The error record is printed along with a 4-byte field containing the displacement of the error record in the physical record. Only the first 256 bytes of the record are printed. If more than 256 bytes is required, you might specify the amount of data printed by using the command PARM MAXDUMP(*nnnn*).

**User response:** Determine the fields in error and contact your IBM representative for help.

---

**CPA0323E Invalid SMF record type encountered**

**Explanation:** An invalid SMF record type was encountered by CICS PA.

**System action:** CICS PA skips the record in error and continues processing the remaining records. The error record is printed along with a 4-byte field containing the displacement of the error record in the physical record. Only the first 256 bytes of the record are printed. If more than 256 bytes is required, you might specify the amount of data printed by using the command PARM MAXDUMP(*nnnn*).

**User response:** Determine the fields in error and contact your IBM representative for help.

---

**CPA0324S Error threshold count reached...Job terminated**

**Explanation:** CICS PA has reached the maximum number of errors allowed. When ten errors (described in messages CPA0319E through CPA0322E) occur, CICS PA ends the job.

**System action:** CICS PA terminates the job.

**User response:** Determine the fields in error and contact your IBM representative for help.

---

**CPA0325I Prescan Reprocessing Table filled – TABLEnnnn allocated**

**Explanation:** This is an informational message only. CICS PA uses an internal table to deblock the data from the monitor data record. The table was not large enough to contain all the data that had to be deblocked so space for an additional table was acquired. The additional table is concatenated to the original. The value *nnnn* in the message tells how many tables have been acquired at the time of the message.

**System action:** CICS PA continues to run normally but the processing time is increased by the need to obtain additional storage requests.

**User response:** Verify that there is no bad data causing CICS PA to incorrectly deblock the monitor data. If the blocksize of the monitor data set is large, this message can be ignored.

---

**CPA0327W SUMMARY key field not specified**

**Explanation:** The Summary report requires at least one key field to be specified but none were detected.

**System action:** Request is terminated.

**User response:** Specify a key field in the Summary Form or FIELDS operand and rerun.

---

**CPA0329E Dictionary returned error on Field ID xxxxxxxxxxxx**

**Explanation:** The dictionary processor was unable to find the data associated with the 12-byte FIELD ID.

**System action:** The data fields on the report are printed as Missing.

**User response:** Verify that the CMF data required for the requested report was collected in the CMF records. The DFH\$MOLS sample program can be used to analyze the contents of the dictionary records.

---

**CPA0330W Dictionary called by Prescan with unknown record type**

**Explanation:** The record encountered was not a performance, exception, or dictionary record. This is an internal logic error.

**System action:** The data record is ignored and processing continues.

**User response:** Obtain a dump of the records and contact your IBM representative for help.

---

**CPA0331E Performance data encountered before Dictionary, APPLID=xxxxxxx. Data lost!**

**Explanation:** A performance record was read for the specified APPLID, but a dictionary record for that APPLID has not been read yet. CICS PA cannot process

the CMF performance data records without first processing the dictionary record for the same APPLID. CICS PA only issues one CPA0331E message per APPLID. More data records might have been ignored.

The cause of a missing dictionary record might include:

1. The switch of an SMF MANx data set while the monitor is running. CICS only writes a dictionary record when the monitor commences.
2. Multi-volume input files are not specified in time sequence.
3. Merged SMF files have records in incorrect sequence.

**System action:** The data record is ignored and processing continues.

**User response:** If the SMF input file specification is correct, and the missing dictionary record is unavoidable, then use the dictionary record creation facility in the dialog. A dictionary record can be created from the CICS system definition for the offending APPLID. See "CICS System (APPLID) definition" on page 81. When CICS PA generates report JCL, the CPADICTR DD statement will include the required dictionary records. You can also use the Monitoring Dictionary Utility Program DFHMNDUP to create the dictionary records required.

Data sets containing required dictionary records can be specified in two places in the JCL:

1. At the top of the SMF input file concatenation. CICS PA will read and use the dictionary record until another is read in the SMF File.
2. In the CPADICTR DD statement. CICS PA will only read and use the dictionary record if one is not found in the SMF File.

If you are unsure about the SMF data validity, analyze the CMF data using DFH\$MOLS.

---

#### CPA0332W xxxxxxxxxx Data length may be incorrect

**Explanation:** CICS PA does an internal calculation of the length of the CMF record. The calculated length does not match the record length field in the record itself.

**System action:** Processing continues, however data from that record might be invalid.

**User response:** None required.

---

#### CPA0333E Connector ID X'xxxx' not mapped by xxxxxxxxxx Dictionary for APPLID xxxxxxxx

**Explanation:** A field in the data record is not mapped by the performance record dictionary data. There is either an error in the CICS Monitoring Facility (CMF) data, or the dictionary record that you created in the CICS PA dialog or via DFHMNDUP is not compatible with the data records.

**System action:** The remainder of the data record is ignored and processing continues.

**User response:** If CICS PA read and used a dictionary record that you created, then ensure that the CICS SDFHLOAD library and MCT specification were valid. If CICS PA read and used a dictionary record from the SMF File, then analyze the CMF data using DFH\$MOLS for assistance in determining the source of the error. Contact your IBM representative for help.

---

#### CPA0334E A type "A" field (Counter) requested but length not 4 or 8

**Explanation:** The CMF record indicated an incorrect length for a counter field. Length must be 4 or 8

**System action:** The return code is set and control is returned to the module that requested the data. A nonzero return code tells the requesting module the data is either invalid or can't be found.

**User response:** There is an error in the CICS Monitoring Facility (CMF) data. Analyze the CMF data using DFH\$MOLS for assistance in analyzing the source of error. Contact your IBM representative for help.

---

#### CPA0335E An unknown type of field was requested: "xxxxxxxxxxxx"

**Explanation:** The CICS 12-byte ID requested by a report processor and found by the dictionary processor is invalid. The field type (for example, A=COUNTER, S=CLOCK/COUNT) is unrecognizable and can't be processed by the dictionary processor.

**System action:** The return code is set and control is returned to the module that requested the data. A nonzero return code tells the requesting module the data is either invalid or can't be found.

**User response:** This was most likely a user error caused by incorrect definition of user fields. The data type (ninth character position in the CICS 12-byte ID) must be a valid CICS data type. Review the *CICS Customization Guide* for the valid data types in the CICS Monitoring Facility. Verify that all user fields are defined correctly before contacting your IBM representative for help.

---

#### CPA0336W Dictionary called by Report Processor with unknown record type

**Explanation:** The record encountered was not a performance class record.

**System action:** The record is ignored and processing continues.

**User response:** This is a CMF data error. Obtain a dump of the records and contact your IBM representative for help.



---

**CPA0338E STOP time earlier than START time**

**Explanation:** The transaction stop appeared to happen before the transaction start.

**System action:** The record is ignored and processing continues.

**User response:** This is probably due to merging data improperly or to multi-volume data sets processed in the wrong order. Analyze the CMF data using DFH\$MOLS for assistance in correcting the error.

---

**CPA0340E Dictionary unable to find required CMF data for xxxxxxxxxx Graph**

**Explanation:** While processing the indicated graph, the Dictionary Processor was unable to find any of the required fields in the CMF data.

**System action:** The graph requested is ignored and processing continues normally.

**User response:** Verify that the necessary CMF data is being collected in the records before requesting the graph. Also, verify that there are records being processed. If no records are selected or the input file does not contain performance class records, the graph cannot be processed.

---

**CPA0341E Dictionary flagged required Graph data missing on nnnnnnnnn accesses**

**Explanation:** While processing the graph preceding this message, the dictionary processor was unable to find the required CMF data the number of times indicated.

**System action:** Zeros are used where actual data cannot be found. The graph is printed but it is inaccurate due to the zeroed data.

**User response:** Analyze the CMF records using DFH\$MOLS and verify that the required data is collected on all records. If it appears that the data is all there, there is an internal logic error. Contact your IBM representative for help.

---

**CPA0342W No Performance records found. Number of tasks set to 1.**

**Explanation:** If no performance records were found by the Performance Totals report processor, the number of tasks is set to 1.

**System action:** Processing continues normally.

**User response:** None required.

---

**CPA0346E No records were selected from input for processing**

**Explanation:** The issuing report processor had no input records to process. Either the input data set did not contain any of the necessary type of records or the user's SELECT specification caused no records to be included.

**System action:** The report header is printed along with the error message. Processing continues.

**User response:** Determine that the necessary record types are present on the input data set. If using the SELECT operand, correct the operands to eliminate the exclusion of all records.

---

**CPA0347I Cross-System Data Set successfully generated, record count=nnnnnnnn**

**Explanation:** The Cross-System Work Extract data set was successfully generated. The record count shows how many records were written to the data set.

**System action:** Processing continues normally.

**User response:** None required.

---

**CPA0348W Unsupported CMF records encountered – records ignored**

**Explanation:** CICS SMF 110 records were encountered in the input data set, but they were from a version not supported by this release of CICS PA.

**System action:** The record is ignored and processing continues.

**User response:** None, or remove the input data set containing unsupported CMF records.

---

**| CPA0349E Alert Definition xxxxxxxx contains error**

| **Explanation:** Possible reasons for the error are:

- | • Invalid Formula
- | • Invalid Threshold value
- | • Nonexistent Resource List
- | • No active conditions

| **System action:** The request is terminated.

| **User response:** Correct the alert definition and rerun the report.

---

**| CPA0350E HDB Template missing Alert Key field(s)**

| **Explanation:** The Template that was used to load an HDB specifying an Alert definition does not have all of the required key fields. The likely reason for the error is that the Alert Key fields are not defined in the template.

| **System action:** The request is terminated.

**User response:** Either specify a template that contains the fields START, STOP, APPLID, TRAN, and TASKNO, or remove this Alert name from the HDB definition.

---

**CPA0351E GETMAIN failed – Report terminated**

**Explanation:** A GETMAIN request for storage failed.

**System action:** The report processor terminates.

**User response:** Specify a larger REGION parameter in the JCL.

---

**CPA0352I Cross-System Data Set was not generated**

**Explanation:** The Cross-System Work Extract failed to generate the extract data set. A preceding error message details the reason why the extract has failed.

**System action:** Processing continues normally.

**User response:** Refer to the preceding error message to determine the cause of the problem.

---

**CPA0353E Statistics Form processing error.**  
**Form=*formname***

**Explanation:** An error occurred while processing a statistics form. The error could be due to one of the following reasons:

- The specified form is not defined in the repository.
- The repository is not specified or not defined.
- The specified form does not contain any active reports.

**System action:** Report processing is terminated.

**User response:** Correct the error and then rerun the report.

---

**CPA0355I Exported Data Set successfully generated**

**Explanation:** The Performance Extract successfully generated the extract data set.

**System action:** Processing continues normally.

**User response:** None required.

---

**CPA0356W Export record is missing data – missing fields contain blanks**

**Explanation:** The Performance Extract records contain fields that were not available in the performance data records. The missing fields contain blank values. The Performance Extract record contains all CICS Transaction Server VRM 690 performance clock fields, but you might be running an earlier release of CICS or excluded some fields in the MCT.

**System action:** Processing continues normally.

**User response:** Verify that the missing (blank) field values are not being collected in the CMF Performance records. Otherwise, contact your IBM representative.

---

**CPA0357I LIST reports share output file *xxxxxxx*, report lines may be interleaved**

**Explanation:** Multiple Performance List Reports were requested with the same OUTPUT file name. This can cause the report lines to be interleaved if the reports process the same APPLIDs or the CMF data is not sorted by APPLID.

**System action:** Processing continues normally.

**User response:** It is recommended that:

1. Each Performance List report specify a unique OUTPUT DDname. This will ensure that each LIST report has contiguous output, and not interleaved with other LIST reports.
2. Each Performance List report specify a single APPLID in the APPLID operand, or specify APPLID in the FIELDS list, or the CMF data is sorted by APPLID. This will ensure that the report does not page break too often. The LIST report performs a page break each time the APPLID changes in the data, except when APPLID is specified in the FIELDS list.

---

**CPA0359W Connector ID *X'xxxx'* not mapped by Performance Dictionary record**

**Explanation:** There is an incompatibility between the CMF Performance records and their associated Dictionary record for the specified CICS APPLID. The CMF Performance records contain data for the specified Connector ID, however their Dictionary record did not include a CMF field definition for this Connector ID. When the Field ID in error is a "CMF field", then this might be a serious problem. It might be caused by the Dictionary and Performance records being generated by different versions of CICS. When the Field ID in error is a "User Field", then this might indicate that the Dictionary record does not contain the User Fields defined in the MCT for this CICS APPLID.

**System action:** Processing continues for this CICS APPLID, however only CMF fields with Connector IDs resolved before the problem occurred are available for reporting.

**User response:** Your response will depend on the source of the Dictionary record. There are three possible sources from where CICS PA can obtain the Dictionary record:

1. CICS PA found the Dictionary record in the SMF File. Message CPA0221I was issued previously to indicate this. If the Dictionary record was written by CICS when the Monitor started, then a serious problem has occurred. Use the CICS DFH\$MOLS utility to analyze your CMF data. This will help you

determine the source of the error. In this case, you might need to contact your IBM representative for help.

If you created the Dictionary record (using the CICS DFHMNDUP utility) and concatenated it ahead of your SMF File DD specification, then verify that the Dictionary record is for the correct version of CICS, or that your MCT specification matches the one used by CICS.

2. The Dictionary record was created from the CICS PA dialog and CICS PA read it from the CPADICTR File. Message CPA0228I was issued previously to indicate this. If the Field ID in error is a "user field", then you probably created your Dictionary record with an incorrect MCT specification. Return to the dialog and ensure that your MCT specification matches the one used by CICS.
3. CICS PA used the default Dictionary record for your version of CICS. Message CPA0230I was issued previously to indicate this. If the Field ID in error is a "user field", then your CICS APPLID probably uses an MCT with user fields defined. If you want to report against the user fields, then create a Dictionary record using the CICS PA dialog.

---

**CPA0360E    System Logger report initialization failed**

**Explanation:** This is an internal system error.

**System action:** System Logger report processing is terminated.

**User response:** Contact your IBM representative for help.

---

**CPA0361I    Logger reports share output file  
xxxxxxxx, reports may be interleaved**

**Explanation:** Multiple System Logger reports were requested with the same OUTPUT file name. This can cause the reports to be interleaved.

**System action:** Processing continues normally.

**User response:** It is recommended that every CICS PA report specifies a unique OUTPUT DDname. This will ensure that reports are not interleaved with other reports.

---

**CPA0362I    Invalid data in Type 88 SMF record,  
reason code=x**

**Explanation:** The SMF Type 88 record was bypassed because it had missing or incomplete data.

**System action:** Processing continues, but this record is bypassed. The record is dumped for analysis.

**User response:** Determine the cause of the invalid record(s).

---

**CPA0363I    Additional sections in Type 88 SMF  
record, reason code=xx**

**Explanation:** CICS PA SMF Type 88 record processing assumes that only one section of each type is present.

**System action:** Processing continues, but this record is bypassed. The record is dumped for analysis.

**User response:** Contact your IBM representative for help.

---

**CPA0364I    Non-CICS logstream *logstreamname*  
bypassed**

**Explanation:** CICS PA processes only CICS-related System Logger records.

**System action:** Processing continues.

**User response:** None required.

---

**CPA0365W    Logger SMF recording interval  
specification may be invalid**

**Explanation:** Message CPA0366W is a continuation of this message.

The specified interval, or system interval if one is not specified, is compared with the calculated interval, based on the SMF records, and was found to be different. This might result in invalid data in the System Logger Summary report.

**System action:** Processing continues.

**User response:** Verify that the specified interval, or system interval, is correct for the SMF records being processed.

---

**CPA0366W    INTERVAL Calculated=xxmins,  
Specified=xxmins, Output=xxxxxxxx**

**Explanation:** This message is a continuation of message CPA0365W.

---

**CPA0370E    Logic Error - DB2 Report Processor  
routine xxxxxxxx, Reason=xxx**

**Explanation:** This is an internal system error.

**System action:** DB2 report processing is terminated.

**User response:** Contact your IBM representative for help.

---

**CPA0371W    DB2 Version x Release x record  
encountered - records ignored**

**Explanation:** A DB2 Accounting record for a DB2 release that is not supported by CICS PA has been encountered. All records for this DB2 release are ignored.

**System action:** Processing continues.

**User response:** None required.

---

**CPA0372W Invalid DB2 record encountered - records ignored**

**Explanation:** Message CPA0373I is a continuation of this message.

At least one DB2 Accounting record with an invalid format has been encountered. All DB2 Accounting records with invalid format are ignored.

**System action:** Processing continues.

**User response:** Check that the input SMF file contains valid SMF Type 101 (X'65') records.

---

**CPA0373I DB2 release *v.r* Reason=*xxx*  
Info=*xxxxxxxxxx***

**Explanation:** This message is a continuation of message CPA0372W.

---

**CPA0374W DB2 Report Processor missing required field - records ignored**

**Explanation:** At least one CMF Performance record selected by the DB2 Report Processor was found to be missing a required field.

**System action:** The record is ignored and processing continues.

**User response:** Verify that the specified Field ID is in the CMF record. You might have excluded this field in your MCT. If the necessary Field IDs are present in the records, contact your IBM representative for help.

---

**CPA0375W Transaction *xxxx* has used additional object and exceeded the object Limit of *nn***

**Explanation:** A resource limit has been exceeded for one of two object types: Files or TSQueues.

**System action:** Processing continues.

**User response:** For Files:

Ensure that the File Resource Limit specified in the DFHMCT TYPE=INITIAL macro via the FILE= keyword is high enough to support your transactions' File Usage.

For TSQueues:

Ensure that the TSQueue Resource Limit specified in the DFHMCT TYPE=INITIAL macro via the TSQUEUE= keyword is high enough to support your transactions' Temporary Storage Usage.

For more information, see "Transaction Resource Class data" on page 55.

---

**CPA0380E Logic Error - MQ Report Processor routine *xxxxxxxx*, Reason=*xxx***

**Explanation:** This is an internal system error.

**System action:** WebSphere MQ Reporting processing is terminated.

**User response:** Contact your IBM support representative for assistance.

---

**CPA0381W MQ Version *v* Release *r* record encountered - records ignored**

**Explanation:** A WebSphere MQ Accounting record for a WebSphere MQ release that is not supported by CICS PA has been encountered. All records for this WebSphere MQ release are ignored.

**System action:** The record is ignored and processing continues.

**User response:** None required.

---

**CPA0382W Invalid MQ record encountered - records ignored**

**Explanation:** Message CPA0383I is a continuation of this message.

At least one WebSphere MQ Accounting record with an invalid format has been encountered. All WebSphere MQ Accounting records with an invalid format are ignored.

**System action:** The record is ignored and processing continues.

**User response:** This message can be ignored if it was displayed during Systems Take-up as it does not affect the take-up processing. Otherwise, check that the input SMF file contains valid SMF Type 116 (X'74') records.

---

**CPA0383I MQ release *v.r* Reason=*xxx*  
Info=*xxxxxxxxxx***

**Explanation:** This message is a continuation of message CPA0382W.

---

**CPA0386I Field ID=*xxxxxxxx*, SYSID=*xxxx*,  
Release=*v.r.m***

**Explanation:** This error message is issued from the selection module when the field specified in the selection is not valid for the z/OS release of the system that created the Logger record.

**System action:** The record is ignored and control returns for further processing.

**User response:** Selection has been specified using a field that is not applicable for the z/OS release of the system that created the Logger record. Check the field selections in the command input stream against the Logger fields valid for the z/OS release. If the selected



field is valid, contact your IBM representative for help.

---

**CPA0387E    Stats HDB cannot be used in Profiling request. HDB Name=xxxxxxx**

**Explanation:** A Statistics HDB has been requested for a Transaction Profiling report. You can only use Performance HDBs for a Transaction Profiling report.

**System action:** Request is terminated.

**User response:** None.

---

**CPA0388E    Summary Key error - Field xxxxxxx invalid as key field.**

**Explanation:** This field cannot be used as a key field to summarize data.

**System action:** Field is ignored.

**User response:** Exclude this field from the requested form.

---

**CPA0389E    Application Group xxxxxxx not defined.**

**Explanation:** Either the Application Group specified in the FIELDS operand is not defined in the Repository, or the resource field specified in the Application Group is not defined in the Dictionary record.

**System action:** Field is ignored or reported as Missing.

**User response:** Do one of the following:

- Ensure that the Application Group is defined in the specified Repository
- Specify the Repository that contains the Application Group definition
- Delete the Application Group from the Form
- Ensure the correct Dictionary record is used

---

**CPA0390E    Alert Definition xxxxxxx not defined in Repository**

**Explanation:** The Alert Definition suboperand specifies an Alert Definition name that is either invalid, does not exist in the repository, or has no Performance Alert Values defined.

**System action:** The report processing is terminated.

**User response:** Take whichever of the following actions is appropriate:

- Specify a valid Alert Definition name
- Specify the Repository that contains the Alert Definition
- If it is a Performance Alert Definition, ensure that associated Alert Values have been defined

---

**CPA0391E    Alert Definition xxxxxxx contains nonexistent Resource List(s)**

**Explanation:** One or more Resource Lists specified in the Statistics Alert Definition do not exist.

**System action:** The report processing is terminated.

**User response:** Specify valid Resource List names in the Alert Definition, and then rerun the report.

---

**CPA0392E    Alert Definition xxxxxxx contains invalid threshold**

**Explanation:** The Alert Definition contains an invalid threshold.

**System action:** The report processing is terminated.

**User response:** Correct the invalid threshold value in the specified Alert Definition, and then rerun the report.

---

**CPA0393E    Logic Error - Alert Definition xxxxxxx**

**Explanation:** This is an internal error, possibly caused by Repository access problems.

**System action:** The report processing is terminated.

**User response:** Contact your IBM support representative for assistance.

---

**CPA0394E    Alert Definition xxxxxxx contains an invalid Formula**

**Explanation:** A Formula in the Alert Definition contains an invalid expression.

**System action:** The report processing is terminated.

**User response:** Correct the Formula in the specified Alert Definition, and then rerun the report.

---

**CPA0395E    Alert Definition xxxxxxx contains no active conditions**

**Explanation:** There are no active conditions in the specified Alert Definition.

**System action:** The report processing is terminated.

**User response:** Activate one or more conditions in the specified Alert Definition, and then rerun the report.

---

**CPA0396E    Manifest Build failed. Reason=No HDBs match the specified Qualifier**

**Explanation:** No HDBs in the Repository have this Qualifier value and also have the Explorer option selected.

**System action:** No HDBs are added to the manifest.

**User response:** Ensure that the Qualifier field is specified correctly. Ensure that any HDBs that are

intended to be included in this manifest have the same qualifier and have the Explorer option selected.

---

**CPA0397E Transaction Tracking Summary report required fields missing**

**Explanation:** The FIELDS operand of the TRACKINGSUMMARY command is missing one or more of the required fields PHAPPLID, PHTRAN, or PHCOUNT. At least one of PHAPPLID and PHTRAN must be specified. PHCOUNT is required.

**System action:** The report processing is terminated.

**User response:** Ensure that the first fields specified in the TRACKINGSUMMARY FIELDS operand are PHAPPLID or PHTRAN or both, followed by PHCOUNT.

---

**CPA0400E Field ID xxxxxxxx xxxxxxxxxxxx not defined in HDB, field ignored**

**Explanation:** The specified field was requested for reporting but is not a defined field for this HDB. The Template whose name is specified in the HDB Definition defines fields in an HDB.

**System action:** The field is not reported. Character fields are printed as blank whilst numeric fields are printed as **missing**.

**User response:** Ensure that your Report Form only requests fields that are defined to the HDB Template.

---

**CPA0401E Field name xxxxxxxx is not supported, reporting is stopped**

**Explanation:** The specified field was requested for reporting but is not a field that is known to CICS PA.

**System action:** HDB report processing is terminated.

**User response:** Ensure that your FIELDS operand only specifies fields that are supported by CICS PA.

---

**CPA0402E Key field xxxxxxxx is not supported, HDB load processing is stopped**

**Explanation:** The specified field was requested for load processing but is not a field that is known to CICS PA.

**System action:** HDB load processing is terminated.

**User response:** Ensure that your FIELDS operand only specifies fields that are supported by CICS PA.

---

**CPA0403W Template Field xxxxxxxx (xxxxxxxxxxxx) is not defined to Dictionary – ignored**

**Explanation:** The named field was specified in the Template associated with the container data set being LOADED, but the field is not defined to the Dictionary.

**System action:** The field is not loaded into the container data set.

**User response:** None required.

---

**CPA0404E Internal Processing Error. RC=xx  
INFO=xxxxxx ID=xxxxxxxx**

**Explanation:** Whilst LOADING an HDB, an internal processing request returned an unacceptable return code.

**System action:** The LOAD request is terminated.

**User response:** Contact your IBM representative for help.

---

**CPA0405E Duplicate HDB LOAD request aborted.  
HDB=xxxxxxxx**

**Explanation:** LOAD requests are serialized to ensure the integrity of the Repository. That request failed.

**System action:** The LOAD request is terminated.

**User response:** Ensure that no more than one LOAD is concurrently active for a specific Repository.

---

**CPA0406E No Containers in HDB xxxxxxxx eligible for processing**

**Explanation:** An HDB REPORT request was issued against the specified HDB. However, no Containers were available for processing. Either no Containers have been created for the HDB, or the time stamp criteria specified via the SMFSTART/SMFSTOP keyword(s) exclude all available Containers.

**System action:** The REPORT request is terminated.

**User response:** Either create Containers for the HDB or specify a time span that matches those of the Containers in the HDB.

---

**CPA0407W Field xxxxxxxx (xxxxxxxxxxxx) not present in HDB Container Data Set – ignored**

**Explanation:** The specified field was specified in a FORMDEF (or a FIELDS statement) but the field was not present in the HDB Container data set.

**System action:** The field is not included in the Report.

**User response:** None required.

---

**CPA0408E Unable to serialize HDB Housekeeping**

**Explanation:** HDB Housekeeping can make large changes to the repository and therefore only one Housekeeping job might be active against a repository data set at any one time. In this case, another Housekeeping job was already active against the repository.

**System action:** The Housekeeping job is terminated.

**User response:** Ensure that no more than one Housekeeping job is concurrently active for a specific Repository.

---

**CPA0409E HDB is unusable - Control Record Missing**

**Explanation:** During the running of HDB Housekeeping, it was determined that a mandatory Control Record was missing from the Repository data set.

**System action:** The Housekeeping job is terminated.

**User response:** Recreate the Repository or recover it from a Backup. If the problem reoccurs, contact your IBM representative for help.

---

**CPA0410W User-specified Selection Criteria ignored**

**Explanation:** The User has specified Selection Criteria when LOADING an HDB. HDB Selection Criteria are specified when defining an HDB or defining the associated Template and only those Selection Criteria are honored during the LOAD (all Selection Criteria specified by the user via JCL are ignored).

**System action:** The user-specified Selection Criteria are ignored.

**User response:** None required.

---

**CPA0411W Statistics HDB Load request issued warning/error messages; Recap=xxxxxxx**

**Explanation:** CICS PA statistics processing has issued warning or error messages. DDname xxxxxxx contains the messages.

**System action:** Processing continues.

**User response:** Review the CICS PA statistics messages in DDname xxxxxxx and take action as advised.

---

**CPA0412E FILEIMAGE and FILESYSTEM have both been specified, only one can be specified**

**Explanation:** The FILEIMAGE and FILESYSTEM parameters are mutually exclusive, only one of them can be specified.

**System action:** The report is ignored and command processing continues.

**User response:** Specify one parameter, either FILEIMAGE or FILESYSTEM, but not both.

---

**CPA0413E HDB xxxxxxxx Load failed because Template yyyyyyyy contains invalid field zzzzzzzz**

**Explanation:** The HDB load failed because the Template contains an invalid field. This might be because the field is obsolete or because its attributes have changed.

**User response:** Edit the named Template. Delete the named field and then add it back to the Template. Run the HDB load again.

---

**CPA0501E Invalid Command Error Code**

**Explanation:** A CICS PA module attempted to issue an error message using a message ID that is not defined. This is an internal logic error.

**System action:** Command processing continues. Processing is terminated after all commands are validated.

**User response:** Contact your IBM representative for help.

---

**CPA0502E No delimiters in date – Julian format assumed (YYDDD)**

**Explanation:** A date specified in the command input had no delimiters and CICS PA could not determine the format.

**System action:** Julian format is assumed and processing continues.

**User response:** If the Julian format produces unsatisfactory results, correct the command input and resubmit the job.

---

**CPA0503E Time field has invalid format, digit, or value**

**Explanation:** A time field specified in the command input cannot be processed by CICS PA.

**System action:** The time field is ignored and command processing continues. Processing is terminated after all commands are validated.

**User response:** Correct the command input and resubmit the job.

---

**CPA0504E Number invalid – too many digits or contains non-numeric value**

**Explanation:** A number specified in the command input cannot be processed by CICS PA.

**System action:** The operand is ignored and command processing continues. Processing is terminated after all commands are validated.

**User response:** Correct the command input and resubmit the job.

---

**CPA0505E FROM-TO range is invalid – TO not later than FROM**

**Explanation:** A FROM-TO range was specified such that the FROM value was greater than the TO value.

**System action:** The operand is ignored and command processing continues. Processing is terminated after all commands are validated.

**User response:** Correct the range specification and resubmit the job.

---

**CPA0506E FORMAT operand requires a single character per value**

**Explanation:** The FORMAT operand specifies the characters to be used for delimiters when formatting date and time fields. Each delimiter must be a single character.

**System action:** The operand is ignored and command processing continues. Processing is terminated after all commands are validated.

**User response:** See "FORMAT" on page 398 for the correct usage of the FORMAT operand. Correct the command input using a single character for each delimiter, and resubmit the job.

---

**CPA0507E Invalid name specified**

**Explanation:** A valid ddname or log stream was not specified in the INPUT operand.

**System action:** The operand is ignored and command processing continues. Processing is terminated after all commands are validated.

**User response:** See "INput" on page 398 for the correct usage of the INPUT operand. Correct the command input and resubmit the job.

---

**CPA0508E APPLID operand requires an 8 character name**

**Explanation:** A valid CICS generic APPLID was not specified with the APPLID operand.

**System action:** The operand is ignored and command processing continues. Processing is terminated after all commands are validated.

**User response:** See "APPLID" on page 397 for the correct usage of the APPLID operand. Correct the command input and resubmit the job.

---

**CPA0509E SUMMARY(BY fields not specified in FIELDS suboperand or out of sequence**

**Explanation:** The field names specified in the BY operand were not properly specified in the FIELDS operand. Whenever the BY operand is specified, the FIELDS operand must be specified and it must contain

the field names, in the same sequence as specified on the BY operand.

**System action:** The operand is ignored and command processing continues. Processing is terminated after all commands are validated.

**User response:** Ensure that the FIELDS operand is specified and that it contains the field names specified on the BY operand. See "SUMMARY - Performance Summary report" on page 426 for the correct usage of the SUMMARY operands. Correct the command input and resubmit the job.

---

**CPA0511E DELIMIT operand requires a single character value**

**Explanation:** The DELIMIT operand did not specify a single character value. The field delimiter for the EXPORT file must be a single character.

**System action:** The operand is ignored and command processing continues. Processing is terminated after all commands are validated.

**User response:** See "EXTRACTPERFORMANCE - Performance data extract" on page 519 for the correct usage of the DELIMIT operand. Correct the command input using a single character for the delimiter, and resubmit the job.

---

**CPA0513E Only one Graph can be requested per GRAPH operand**

**Explanation:** Only one graph (RESPONSE or TRANRATE) can be requested for each GRAPH report request. If you want to produce two graphs, specify the GRAPH operand twice with the required graph type (for example, GRAPH(RESPONSE),GRAPH(TRANRATE)).

**System action:** The operand is ignored and command processing continues. Processing is terminated after all commands are validated.

**User response:** Correct the command input and resubmit job.

---

**CPA0518E UOWID Select Field must specify 12 hexadecimal digits**

**Explanation:** The UOWID Field in the Selection Criteria did not specify 12 hexadecimal digits. CICS PA checks this specification against the first 6 bytes of the NETUOWSX CMF field, as this is the Network UOW ID. The last 2 bytes are not checked, as they are the period or syncpoint count within a Network UOW.

**System action:** The field value is ignored and command processing continues.

**User response:** Correct the command input and resubmit the job.



---

**CPA0521E    START/STOP field format is not TIMET, TIMES, TIMEM, DATE, DATEISO, DATEM or DATEYR**

**Explanation:** The START/STOP field format in the FIELDS operand is invalid. Allowed values are TIMET, TIMES, TIMEM, DATE, DATEISO, DATEM and DATEYR.

**System action:** The field is ignored and command processing continues. Processing is terminated after all commands are validated.

**User response:** See “Suboperands for Time Stamp fields” on page 393. Correct the command input and resubmit the job.

---

**CPA0522E    User field specification is invalid. Field is ignored**

**Explanation:** The user field was incorrectly specified.

**System action:** The user field is ignored and command processing continues. Processing is terminated after all commands are validated.

**User response:** See “Suboperands for User fields” on page 394 for operand format and usage when specifying user fields. Correct the command input and resubmit the job.

---

**CPA0523E    Clock field format is not TIME or COUNT. Field is ignored**

**Explanation:** The Clock field format in the FIELDS operand is invalid. Allowed values are TIME and COUNT.

**System action:** The field is ignored and command processing continues. Processing is terminated after all commands are validated.

**User response:** See “Suboperands for Clock type fields” on page 393. Correct the command input and resubmit the job.

---

**CPA0524E    \*\*\*\*\* Run terminated by errors listed above \*\*\*\*\***

**Explanation:** The job was terminated due to severe command error conditions.

**System action:** Processing is terminated.

**User response:** Correct the command input errors, which are indicated by command error messages that precede this message, and resubmit the job.

---

**CPA0525E    LISTX(BY field UOWID must be specified on its own**

**Explanation:** The LISTX report BY operand can only specify field UOWID on its own. For example, LISTX(BY(UOWID),FIELDS(...)).

**System action:** The field is ignored and command processing continues.

**User response:** Correct the command input and resubmit the job.

---

**CPA0526E    LISTX(BY fields not specified in FIELDS operand or out of sequence**

**Explanation:** The field names specified in the BY operand were not properly specified in the FIELDS operand. Whenever the BY operand is specified, the FIELDS operand must be specified and it must contain the field names, in the same sequence as specified on the BY operand.

**System action:** The LISTX report is ignored and command processing continues. Processing is terminated after all commands are validated.

**User response:** Ensure that the FIELDS operand is specified and that it contains the field names specified on the BY operand. See “LISTX - Performance List Extended report” on page 414 for the correct usage of the LISTX operands. Correct the command input and resubmit the job.

---

**CPA0527E    LIMIT field not specified in LISTX(BY fields**

**Explanation:** The field name specified in the LIMIT operand was not properly specified in LISTX(BY. Whenever LIMIT is specified, the field must be the same as one of the field names specified in the LISTX(BY operand.

**System action:** The LISTX report is ignored and command processing continues. Processing is terminated after all commands are validated.

**User response:** Ensure that the LIMIT operand contains the same field name as one of the field names specified in the LISTX(BY operand. See “LISTX(BY(field1,field2,field3)” on page 415 for the list of fields.

---

**CPA0528E    Only one field can be requested per LIMIT operand**

**Explanation:** Only one LIMIT operand (for example, RESPONSE or FCAMCT) can be specified with the LISTX operand. If you want two reports, specify the LIMIT operand separately with each LISTX operand.

**System action:** The LISTX report is ignored and command processing continues. Processing is terminated after all commands are validated.

**User response:** See “LISTX(LIMIT” on page 416 for the LIMIT operand and its usage. Correct the command input and resubmit the job.

---

**CPA0529E LISTX(BY sort sequence is not ASCEND or DESCEND**

**Explanation:** The sorting sequence specified in the BY operand is invalid. If specified, it must be ASCEND or DESCEND. If not specified, the default is ASCEND.

**System action:** The field is ignored and command processing continues. Processing is terminated after all commands are validated.

**User response:** See "LISTX - Performance List Extended report" on page 414 for the format of the LISTX operand. Correct the command input and resubmit the job.

---

**CPA0530E SELECT operand has too many field values specified**

**Explanation:** The SELECT operand specified too many field values. The restrictions are:

1. Maximum of 14 START/STOP/ACTIVE time ranges.
2. Maximum of 28 time/count values or ranges.
3. Maximum of 56 four (4) character values. For example, Transaction IDs.
4. Maximum of 28 eight (8) character values. For example, User IDs.

**System action:** Field values specified after the maximum number is reached are ignored and not used in selection processing.

**User response:** See "Using SELECT statements" on page 525. Correct the command input and resubmit the job.

---

**CPA0531E SELECT given without correct Selection Criteria**

**Explanation:** Selection criteria were not specified, or were incorrectly specified for the selected field name.

**System action:** The SELECT statement is ignored and command processing continues. Processing is terminated after all commands are validated.

**User response:** See "Using SELECT statements" on page 525 for the SELECT operand and its usage. Correct the command input and resubmit the job.

---

---

**CPA0532E TITLE is too long - field truncated after 12 characters**

**Explanation:** The DISTRIBUTION TITLE is more than 12 characters long.

**System action:** Only the first 12 characters of the title are used and command processing continues.

---

---

**CPA0537E Date field has invalid format, digit, or value**

**Explanation:** CICS PA was unable to recognize a date field because of an invalid format, digit, or value.

**System action:** Processing is terminated.

**User response:** See "Suboperands for Time Stamp fields" on page 393 for the correct date formats. Correct the command input and resubmit the job.

---

**CPA0539E A maximum of two chain names are allowed, this one ignored**

**Explanation:** This is an internal logic error.

**System action:** Processing is terminated.

**User response:** Contact your IBM representative for help.

---

**CPA0540E Value previously used in another sublist**

**Explanation:** This is an internal logic error.

**System action:** Processing is terminated.

**User response:** Contact your IBM representative for help.

---

**CPA0542E \*\*\* Routines specified exceed maximum of 511**

**Explanation:** Internal capacity exceeded. The cumulative number of routines specified for execution exceeds capacity. This might occur if an unusually large amount of command input is specified in one CICS PA batch job.

**System action:** Processing is terminated.

**User response:** Split the command input into two or more batch jobs.

---

**CPA0543E cannot be found as chained DISPLIST**

**Explanation:** This is an internal logic error.

**System action:** Processing is terminated.

**User response:** Contact your IBM representative for help.

---

**CPA0544E No input DDnames found from names on EXECUTE commands**

**Explanation:** This is an internal logic error.

**System action:** Processing is terminated.

**User response:** Contact your IBM representative for help.

---

---

**CPA0545E    Error on BLDL**

**Explanation:** A BLDL SVC completed unsuccessfully. This can be caused by a load module that is in error, or not enough virtual storage was available to complete the request.

**System action:** Processing is terminated.

**User response:** Ensure that the load module library does not have a problem. If necessary, contact your IBM representative for help.

---

**CPA0546E    BLDL failed for Exit Routine module**

**Explanation:** A BLDL SVC completed unsuccessfully for an Exit Routine module. This can be caused by a load module that is in error, or not enough virtual storage was available to complete the request.

**System action:** Processing is terminated.

**User response:** Ensure that the load module library does not have a problem. If necessary, contact your IBM representative for help.

---

**CPA0547E    Header name invalid or not specified**

**Explanation:** This is an internal logic error.

**System action:** Processing is terminated.

**User response:** Contact your IBM representative for help.

---

**CPA0548E    TO-time prior to FROM-time**

**Explanation:** The TO date/time specification is before the FROM date/time specification.

**System action:** No records are selected for processing.

**User response:** Correct the command input and resubmit the job.

---

**CPA0549E    Parms should not be enclosed in parentheses**

**Explanation:** Parameters specified under the PARM command should not be enclosed in parentheses.

**System action:** Processing is terminated.

**User response:** Remove the parentheses from the PARM command input and resubmit the job.

---

**CPA0553E    STAE request ignored. Once STAE is turned off, it will not be reinstated**

**Explanation:** PARM NOSTAE was specified in the command input cancelling the effective environment. After NOSTAE is specified, the affected environment cannot be restored. The subsequent PARM command specifying STAE is ignored, and processing continues.

**System action:** Processing continues without a STAE environment.

**User response:** Delete the PARM NOSTAE command from the command input and resubmit the job.

---

**CPA0554E    End of command stream encountered when not expected**

**Explanation:** The CICS PA scan routine reached the end of the command stream in the middle of processing a command.

**System action:** Processing is terminated.

**User response:** Verify that all necessary parts of the last command (for example, closing parentheses and commas) are present and that the format is correct. Correct the command input and resubmit the job.

---

**CPA0555E    DCB has already been processed – will ABEND to prevent loop**

**Explanation:** Internal logic error.

**System action:** Processing is terminated.

**User response:** Contact your IBM representative for help.

---

**CPA0556E    Invalid syntax – cannot find command**

**Explanation:** The CICS PA scan routine was unable to process the command input.

**System action:** Processing is terminated.

**User response:** Correct the command input and resubmit the job.

---

**CPA0557E    Unmatched quotes detected in data string**

**Explanation:** The CICS PA scan routine found that a quotation mark was missing in a data string.

**System action:** The string is ignored and command processing continues. Processing is terminated after all commands are validated.

**User response:** Check the command input to ensure that all quotation marks are matched. Correct the command input and resubmit the job.

---

**CPA0558E    Too much data to process – Work Buffer full**

**Explanation:** CICS PA had too much command input data to process. The CICS PA scan routine can handle only 8192 bytes of input per command.

**System action:** Processing is terminated.

**User response:** Reduce the command input size. You might have to break the command stream into two separate commands.

---

**CPA0559E Input ends in a range indicator – dummy field generated**

**Explanation:** The CICS PA scan routine found that the command input ended in the middle of a range indicator. For example, in ID(90-., the upper range value and closing parenthesis are missing.

**System action:** The range is treated as a single value and command processing continues.

**User response:** Correct the command input and resubmit the job.

---

**CPA0560E Invalid character after quote string – not “,” or “(” or “)”**

**Explanation:** The three listed characters are the only allowable characters that can follow a data string in quotes.

**System action:** Command processing continues at the next operand. Processing is terminated after all commands are validated.

**User response:** Correct the command input and resubmit the job.

---

**CPA0561E Syntax error or unrecognizable format in field**

**Explanation:** CICS PA was unable to recognize the input indicated in the error message.

**System action:** Processing is terminated.

**User response:** See “General command format” on page 383 for the command formats and check the syntax rules. Correct the command input and resubmit the job.

---

**CPA0562E Unpaired parentheses detected**

**Explanation:** CICS PA found an unpaired parenthesis. Either one parenthesis is missing or there is an extra parenthesis.

**System action:** CICS PA ignores the unpaired parenthesis and command processing continues. Processing is terminated after all commands are validated.

**User response:** Check the command input for unmatched parentheses. Correct the command input and resubmit the job.

---

**CPA0563E Exceeded maximum depth of parentheses nesting – 254**

**Explanation:** When specifying operands and sub-operands, the maximum number of parenthesis nesting levels is 254.

**System action:** Command processing continues at the

next operand. Processing is terminated after all commands are validated.

**User response:** Correct the command input to eliminate extra parenthesis nesting and resubmit the job.

---

**CPA0564E Data string processed – unpaired quote detected**

**Explanation:** CICS PA found a data string with unpaired quotation marks.

**System action:** Command processing continues at the next operand. Processing is terminated after all commands are validated.

**User response:** Check the command input for unmatched quotation marks. Insert the missing quotation mark or remove the extra one, and resubmit the job.

---

**CPA0566E Right parenthesis inserted at end of string**

**Explanation:** An ending right parenthesis is missing in the command input.

**System action:** CICS PA inserts the missing parenthesis and command processing continues.

**User response:** Correct the command input to avoid getting this message, then resubmit the job.

---

**CPA0567E Exceeded maximum number of fields – 1022**

**Explanation:** Only 1022 fields and operands are allowed in the command input.

**System action:** Extra fields are ignored and command processing continues.

**User response:** Correct the command input to eliminate the extra fields and resubmit the job.

---

**CPA0568E Command not found in command list – ignored**

**Explanation:** CICS PA did not recognize the command indicated in the error message.

**System action:** The command is ignored and command processing continues. Processing is terminated after all commands are validated.

**User response:** Correct the command input and resubmit the job.

---

**CPA0580E CMDLIB DD card is missing or DD DUMMY – unable to process command**

**Explanation:** A COPY or INCLUDE instruction is specified with one or more member names to be copied in the command input. These members must reside on

a PDS defined by the CMDLIB DD statement.

**System action:** Processing is terminated.

**User response:** Check the JCL for proper specification of the CMDLIB DD statement and resubmit the job.

**CPA0581E No member name specified – command ignored**

**Explanation:** A COPY or INCLUDE instruction was encountered with no operands specifying member names to be copied.

**System action:** Processing is terminated.

**User response:** Add the PDS or library member names, or delete the COPY/INCLUDE instruction from the command input and resubmit the job.

**CPA0582E Operand must be a single list of names**

**Explanation:** The COPY or INCLUDE instruction did not specify a list of valid member names.

**System action:** Processing is terminated.

**User response:** Correct the COPY or INCLUDE instruction to make the operand a member name or a list of member names and resubmit the job.

**CPA0583E is a member already copied – this entry skipped**

**Explanation:** A second copy request for the member named in this error message has been encountered. It was copied from a previous member or specified twice under the COPY or INCLUDE instruction. To prevent any possible loops, the second copy is ignored.

**System action:** Processing is terminated.

**User response:** Correct the command input and resubmit the job.

**CPA0584E not found in Command Library**

**Explanation:** A member name specified on the COPY or INCLUDE instruction does not reside in the library defined by the CMDLIB DD statement.

**System action:** Processing is terminated.

**User response:** Correct the command input and resubmit the job.

**CPA0587E PEAK percentile must be in the range 50% to 100%**

**Explanation:** The PEAK operand was outside the range of 50 to 100 percent.

**System action:** The operand is ignored and command processing continues.

**User response:** Correct the PEAK specification and resubmit the job.

**CPA0593E EXTERNAL operand is missing and External Work File not specified in JCL**

**Explanation:** The specified report did not specify an EXTERNAL operand and no External Work File is available in the JCL to satisfy the request. This report requires an External Work File to sort its records.

**System action:** The report is ignored and command processing continues.

**User response:** Specify an External Work File in the JCL with a DDname prefixed by CPAXW. Optionally specify this DDname in the EXTERNAL operand to associate the report with this file. If the EXTERNAL operand is not specified, CICS PA will assign the next available External Work File in the pool until they are exhausted. See “External sorting” on page 371 for information on the DD statements for External Work Files.

**CPA0594E GRAPH type not specified – default RESPONSE used**

**Explanation:** The GRAPH report operand did not specify a type. Valid GRAPH types are RESPONSE and TRANRATE.

**System action:** The default RESPONSE is used and processing continues.

**User response:** Correct the GRAPH operand and resubmit the job.

**CPA0595E SUBSTR specification invalid – must be SUBSTR(Start,Length)**

**Explanation:** Character User Field SUBSTR operand is not specified correctly.

- The first suboperand is the starting position and must have a value in the range 1 to 256.
- The second suboperand is the length.
- The length must be in the range 1 to 256 for the LIST report, or in the range 1 to 8 for the SUMMARY report.
- The length when added to the starting position should not exceed the length of the Character User Field.

**System action:** SUBSTR is ignored and command processing continues.

**User response:** Correct the SUBSTR specification and resubmit the job.



---

**CPA0596E    INTERVAL specification invalid – must be HH:MM:SS (00:00:01 to 24:00:00)**

**Explanation:** The Performance Summary report time interval is not specified correctly. INTERVAL must specify a time interval between 1 second and 24 hours in the format *hh:mm:ss* where hh is the number of hours, mm is the number of minutes and ss is the number of seconds.

INTERVAL represents the time interval when the Summary report or extract is sorted by transaction Start or Stop time.

**System action:** INTERVAL is ignored and command processing continues.

**User response:** Correct the INTERVAL specification and resubmit the job.

---

**CPA0597E    SYSID specification invalid – must be SYSID(applid,mvsid)**

**Explanation:** The Cross-System Extract SYSID operand is not specified correctly. The first suboperand is the APPLID that is set in the SMFMNPRN, SMFMNSPN and SMFMNJBK fields of the CMF records written to the Extract data set. The second suboperand is the MVS ID that is set in the SMFSID field of the CMF records written to the Extract data set.

**System action:** SYSID is ignored and command processing continues.

**User response:** Correct the SYSID specification and resubmit the job.

---

**CPA0598E    SSID operand requires a 4 character name**

**Explanation:** A valid DB2 Subsystem ID was not specified with the SSID operand.

**System action:** The operand is ignored and command processing continues.

**User response:** Correct the SSID specification and resubmit the job.

---

**CPA0599E    LOGGER INTERVAL must be in the range 1 to 60 minutes**

**Explanation:** The System Logger report INTERVAL operand was not in the range 1 to 60 minutes. The INTERVAL operand specifies the SMF Global Reporting Interval as defined in the SMFPRMnn PARMLIB member.

**System action:** The operand is ignored and command processing continues.

**User response:** Correct the INTERVAL specification and resubmit the job.

---

**CPA0601E    Field exceeds maximum, value set to nnnnnnnnn**

**Explanation:** A value was specified in the command input that exceeded the allowable maximum.

**System action:** Processing is terminated.

**User response:** The value is set as indicated in the error message. If this default value produces unsatisfactory results, correct the command and resubmit the job.

---

**CPA0604E    BLDL failed for Prescan module xxxxxxxx in Dispatch Set xxxxxxxx**

**Explanation:** The CICS PA Prescan module cannot be found in the load library. This message should not occur and indicates a problem with the CICS PA load library.

**System action:** Processing is terminated.

**User response:** Ensure that the CICS PA Prescan module name is CPAPRSMF and that it resides in the CICS PA load library. Otherwise, contact your IBM representative for help.

---

**CPA0605E    BLDL failed for program module xxxxxxxx**

**Explanation:** The specified CICS PA module cannot be found in the load library. This message should not occur and indicates a problem with the CICS PA load library.

**System action:** Processing is terminated.

**User response:** Ensure that the CICS PA module resides in the CICS PA load library. Otherwise, contact your IBM representative for help.

---

**CPA0606E    xxxxxxxx program in Dispatch Set xxxxxxxx has no record codes to process**

**Explanation:** The specified CICS PA record processing module does not have a list of record codes to process. This message should not occur and indicates a problem with CICS PA.

**System action:** Processing is terminated.

**User response:** Contact your IBM representative for help.

---

**CPA0607E    Dispatch Set xxxxxxxx has no routines to execute**

**Explanation:** The command input for the specified Dispatch Set (INPUT DDname) does not have any reports to process. This message should not occur and indicates a problem with CICS PA.

**System action:** Processing is terminated.

**User response:** Contact your IBM representative for help.

---

**CPA0608E First command module to signal an error was xxxxxxxx**

**Explanation:** This error message is issued at the completion of command processing when errors have been encountered. It identifies the CICS PA module that issued the first error message.

**System action:** Processing is terminated.

**User response:** Look for error messages before this message that might indicate a command error. Correct the command input and resubmit the job.

---

**CPA0609E Field is longer than maximum (nnnn chars) – possibly misplaced quote**

**Explanation:** A field in the command input, indicated in the error message, is longer than the maximum *nnnn* characters.

**System action:** Processing is terminated.

**User response:** Correct the command input so that the field is within the maximum, and resubmit the job.

---

**CPA0611E INPUT DDname xxxxxxxx is missing from JCL**

**Explanation:** The INPUT operand specified a DDname that is not defined in the JCL.

**System action:** The reports that use this input file cannot run. Command processing continues.

**User response:** See “INput” on page 398 for more information on this operand. Specify the Input File in the JCL and resubmit the job.

---

**CPA0612E EXTERNAL DDname xxxxxxxx can only be used by a single report**

**Explanation:** The EXTERNAL operand specified a DDname that is used by a previously requested report. An External Work File can only be used by a single report.

**System action:** The report is ignored and command processing continues.

**User response:** Ensure that each report requiring an External Work File has either a unique EXTERNAL specification, or enough External Work Files files are defined in the pool. The External Work File pool consists of all DD statements in the JCL prefixed by CPAXW. See “External sorting” on page 371 for information on the DD statements for External Work Files.

---

**CPA0613E EXTERNAL DDname xxxxxxxx is missing from JCL**

**Explanation:** The EXTERNAL operand specified a DDname that is not defined in the JCL.

**System action:** The report is ignored and command processing continues.

**User response:** Specify the missing External Work File in the JCL. See “External sorting” on page 371 for information on the DD statements for External Work Files.

---

**CPA0614E EXTERNAL DDname xxxxxxxx is not a DASD or Tape file**

**Explanation:** The EXTERNAL operand specified a DDname that does not have a device type of DASD or Tape.

**System action:** The report is ignored and command processing continues.

**User response:** Correct the External Work File DD statement to specify a DASD or Tape data set. See “External sorting” on page 371 for information on the DD statements for External Work Files.

---

**CPA0615E Extract DDname xxxxxxxx is missing from JCL**

**Explanation:** The DDNAME operand specified a DDname that is not defined in the JCL.

**System action:** The extract is ignored and command processing continues.

**User response:** Specify the missing Extract data set in the JCL. For more information on the command format and JCL for CICS PA extracts, see:

- “CROSSsystem - Cross-System Work report and extract” on page 471
- “EXTRACTPERFORMANCE - Performance data extract” on page 519

---

**CPA0620E HDB name is missing or invalid**

**Explanation:** The REPORT or LOAD operand does not specify a valid HDB name sub-operand.

**System action:** The report is request is ignored and command processing continues.

**User response:** Specify a valid HDB name with the REPORT or LOAD operand. For example: REPORT(MYHDB) or LOAD(MYHDB)

---

**CPA0621E BY Field name xxxxxxxx is invalid**

**Explanation:** The WAITANALYSIS BY operand specified an invalid CMF Field name. Only character and time stamp fields can be specified.

**System action:** The report request is ignored and

command processing continues.

**User response:** Specify correct field name(s) in the BY operand.

---

**CPA0622E Field name xxxxxxxx is invalid**

**Explanation:** The FIELDS operand for an HDB REPORT request specified an invalid field name.

**System action:** The REPORT request is terminated and command processing continues.

**User response:** Correct the FIELD names specification.

---

**CPA0623E First Field name xxxxxxxx is not a valid Sort Field**

**Explanation:** The FIELDS operand for an HDB REPORT request did not specify a valid Sort field as the first field. Only Character (for example, TRAN) and Time Stamp (for example, START) fields can be Sort fields.

**System action:** The report request is ignored and command processing continues.

**User response:** Specify a valid Sort Field as the first field in the FIELDS operand.

---

**CPA0624E Field xxxxxxxx specified an invalid Type or Function xxxxxxxx**

**Explanation:** The specified Field requested an invalid Field Type or Function. Allowed Field Types are: TIME, COUNT, TIMET, TIMEM, TIMES, DATE, DATEISO, DATEM, DATEYR. Allowed Field Functions are: AVE, TOTAL, DEV.

**System action:** The report request is ignored and command processing continues.

**User response:** Correct the FIELD Type or Function.

---

**CPA0625E Field xxxxxxxx is not a valid CMF Field name**

**Explanation:** The specified Field is not a known CMF Performance Class Field name.

**System action:** The report request is ignored and command processing continues.

**User response:** Correct or remove the Field name.

---

**CPA0626E Field ignored due to invalid Format. Valid Formats are K, KB, M, and MB**

**Explanation:** The specified COUNT field format is invalid.

**System action:** The field is ignored and command processing continues.

**User response:** Specify a valid COUNT field format.

---

**CPA0627W Field ignored due to invalid Format 12. Valid Formats are K, KB, M, and MB**

**Explanation:** The COUNT field format specified is invalid.

**System action:** The field is ignored and command processing continues.

**User response:** Specify a valid COUNT field format.

---

**CPA0628E Invalid combination of BASELINE and REPORT parameters for ID(nnnn).**

**Explanation:** Either both or neither BASELINE and REPORT operands have been specified on a PROFILING request.

**System action:** The report is ignored and command processing continues.

**User response:** Specify either BASELINE or REPORT on each PROFILING request.

---

**CPA0629E Duplicate BASELINE/REPORT have been specified for ID(nnnn)**

**Explanation:** Two commands for the same ID have been specified for a PROFILING report.

**System action:** The report is ignored and command processing continues.

**User response:** Specify only one BASELINE and one REPORT command for each ID.

---

**CPA0630E ID zero or too large. nnnnnnnnnnnnnnnnn**

**Explanation:** Value given for ID is zero or too large.

**System action:** The report is ignored and command processing continues.

**User response:** Specify correct ID.

---

**CPA0631W More than one Statistics report requested. Extra reports ignored.**

**Explanation:** The STATSALERT operand contained more than one report type. Only one report per STATSALERT operand is allowed.

**System action:** The second and subsequent reports are ignored and command processing continues.

**User response:** Create a separate STATSALERT operand for each required report, and then rerun.

---

**CPA0632E Suboperand STALTDEF missing or invalid.**

**Explanation:** The STATSALERT operand does not specify a valid STALTDEF suboperand.

**System action:** The request is terminated.



**User response:** Specify a STALTDEF suboperand.

---

**CPA0633E Statistics Alerts Definition name missing or invalid**

**Explanation:** The STATSALERT operand does not specify a valid Statistics Alert Definition MEMBER name.

**System action:** The request is terminated.

**User response:** Specify a valid Statistics Alerts Definition MEMBER name operand, for example: MEMBER(MYALERTS).

---

**CPA0634E Statistics ID not specified.**

**Explanation:** The command requires a Statistics ID.

**System action:** The request is terminated.

**User response:** Correct the command by specifying a valid Statistics ID.

---

**CPA0635E Command name ambiguous.**

**Explanation:** The specified command name is ambiguous and could not be uniquely identified.

**System action:** The request is terminated.

**User response:** Specify the full command name.

---

## 1000–1099 Dialog messages

These messages are issued by the CICS PA dialog during JCL generation, or when creating Report Sets, Report Forms, Object Lists, and so on. For other CICS PA dialog messages, refer to the Online Help.

---

**CPA1001E Parameter list error; Module=xxxxxxx**

**Explanation:** A CICS PA dialog module was passed an invalid parameter.

**System action:** Processing is terminated.

**User response:** Contact your IBM representative for help.

---

**CPA1002E File not allocated; DDname=xxxxxxx**

**Explanation:** A CICS PA dialog module has detected that the specified DDname was not allocated.

**System action:** Processing is terminated.

**User response:** Contact your IBM representative for help.

---

**CPA1003E DFHMNDUP has abended; Abend Code=xxxxxxx, Reason Code=xxxxxxx, APPLID=xxxxxxx**

**Explanation:** CICS PA could not create a new Report

---

**CPA0636E Log Stream requires SMFSTART.**

**Explanation:** Log Stream input must have an SMFSTART to reduce the number of Log Stream records that are processed.

**System action:** The request is terminated.

**User response:** Add the SMFSTART operand and run the request again.

---

**CPA0637E MVSID operand requires a 4 character name**

**Explanation:** A valid MVS ID was not specified with the MVSID operand.

**System action:** The report is ignored and command processing continues.

**User response:** Specify a valid MVS ID.

---

**CPA0638E Operand specified invalid value**

**Explanation:** An invalid value is specified in the named operand.

**System action:** The request is terminated.

**User response:** Correct the operand value and run the request again.

Form because the CICS Monitoring utility DFHMNDUP has abended.

**System action:** Processing is terminated.

**User response:** If the abend code is S806-04, then verify that either the SDFHAUTH and SDFHLINK data sets contain the DFHMNDUP module and the Monitoring Control Table (MCT) module, if the MCT suffix was specified. The SDFHAUTH and SDFHLINK data sets and the MCT suffix are specified in the CICS system definition. Otherwise, contact your IBM representative for help.

---

**CPA1004E DFHMNDUP failed to generate CMF Performance Dictionary record; Reason=EOD**

**Explanation:** CICS PA could not create a new Report Form because the CICS Monitoring utility DFHMNDUP failed to create a CMF Dictionary record.

**System action:** Processing is terminated.

**User response:** Contact your IBM representative for help.

---

**CPA1005E ATTACH macro error; Ret=xx**

**Explanation:** CICS PA could not create a new Report Form because the ATTACH macro failed.

**System action:** Processing is terminated.

**User response:** Contact your IBM representative for help.

---

**CPA1006E DFHMNDUP has failed; RC=xx**

**Explanation:** CICS PA could not create a new Report Form because the CICS Monitoring utility DFHMNDUP completed with a non-zero return code.

**System action:** Processing is terminated.

**User response:** Contact your IBM representative for help.

---

**CPA1020E Table Library not available;  
DDname=xxxxxxx**

**Explanation:** A CICS PA dialog module has detected that the specified DDname for the Table library was not allocated.

**System action:** Processing is terminated.

**User response:** Contact your IBM representative for help.

---

**CPA1021E System Definition Table for CICS PA  
xxxx has a format error**

**Explanation:** CICS PA determined that the Table containing your CICS System and SMF File definitions is not in the correct format.

- If the CICS PA version is V1R1, then CICS PA was attempting to upgrade your CICS PA V1R1 definitions to V1R2 or later, but failed to do so.
- If the CICS PA version is V1R2 or later, then CICS PA failed to read your saved System Definitions.

The System Definitions Table is a member in your Permanent ISPF Table Library, which is specified in your CICS PA Settings.

- For CICS PA V1R1, the member name is CPASMF1N.
- For CICS PA V1R2 or later, the member name is CPASMF12.

**System action:** Processing is terminated.

**User response:** Try one of the following:

- If the problem occurred during an upgrade from CICS PA V1R1 to V1R2 or later, then you can retry your request. When prompted to upgrade your CICS PA V1R1 System Definitions, reply Exit or Cancel.

- For CICS PA V1R2 or later, delete member CPASMF12 from your Permanent ISPF Table Library, then retry your request.

**Note:** In both cases, you will lose your saved System Definitions and you will not be able to recover them. If this problem is occurring regularly, or you do not want to delete your saved System Definitions, then contact your IBM representative for help.

---

**CPA1022E Member xxxxxxxx is not a Report Form**

**Explanation:** CICS PA determined that the specified member is not in the correct format for a Report Form.

**System action:** Processing is terminated.

**User response:** Verify that the specified member in the Report Form library is a Report Form. Otherwise, contact your IBM representative for help.

---

**CPA1023E Report Form data set not available;  
DDname=xxxxxxx**

**Explanation:** A CICS PA dialog module has detected that the specified DDname for the Report Form library was not allocated.

**System action:** Processing is terminated.

**User response:** Contact your IBM representative for help.

---

**CPA1024E Member xxxxxxxx is not a Report Set**

**Explanation:** CICS PA determined that the specified member is not in the correct format for a Report Set.

**System action:** Processing is terminated.

**User response:** Verify that the specified member in the Report Set library is a Report Set. Otherwise, contact your IBM representative for help.

---

**CPA1025E Report Set data set not available;  
DDname=xxxxxxx**

**Explanation:** A CICS PA dialog module has detected that the specified DDname for the Report Set library was not allocated.

**System action:** Processing is terminated.

**User response:** Contact your IBM representative for help.

---

**CPA1026E No systems are defined**

**Explanation:** No systems have been defined in System Definitions.

**System action:** Processing is terminated.

**User response:** From **System Definitions**, define the CICS systems, DB2 subsystems and System Loggers

that you want to report against.

---

**CPA1027E Report Set JCL generation failed.  
System or Group is not defined**

**Explanation:** CICS PA has detected that your System Definitions do not contain the System or Group of systems that were requested for report processing. Message CPA1030E is issued in conjunction with this message to identify the offending System or Group, as well as the report that is causing the failure.

**System action:** Processing is terminated.

**User response:** Either from **System Definitions**, define the System or Group that you want to report against, or alter the report to specify a System or Group that is eligible for report processing.

---

**CPA1028E Report Set JCL generation failed.  
System or Group not specified**

**Explanation:** You have not specified the System or Group of systems to be reported. System or Group can be specified at the following System Definition points:

1. In the individual reports or extracts of the Report Set
2. At submission time in the Run Report Set panel
3. In the Global Options of the Report Set

The order of this list also reflects the precedence of selecting systems for reporting.

**System action:** Processing is terminated.

**User response:** Specify the System or Group that you want to report against.

---

**CPA1029E Report Set JCL generation failed.  
System or Group has no SMF files**

**Explanation:** CICS PA has detected that the System or Group requested for report processing has no SMF Files specified. Message CPA1030E is issued in conjunction with this message to identify the offending System or Group, as well as the report that is causing the failure.

**System action:** Processing is terminated.

**User response:** From **System Definitions**, define SMF Files for the offending System or Group.

---

**CPA1030E aaaaaa=system, Report=report,  
Output=output**

**Explanation:** This message details failure information and is issued in conjunction with a previous error message (1027-1029).

- *aaaaaa=system* is the offending System or Group name.
- *report* is the Report that specified the offending System or Group name.

- *output* is the Report Output DDname or Extract Data Set name that further identifies the report or extract.

**System action:** Action is determined by the previously issued error message.

**User response:** Response is determined from the previously issued error message. Use this message to determine which report or extract is causing the failure.

---

**CPA1031E Report Set JCL generation failed. No reports are active**

**Explanation:** CICS PA has detected that no reports are active in the Report Set.

**System action:** Processing is terminated.

**User response:** Activate the required reports in the Report Set.

---

**CPA1032E Report Set JCL generation failed. Report Form is not defined**

**Explanation:** CICS PA has detected that a Report Form specified in a report is not in the Report Form library. Message CPA1034E is issued in conjunction with this message to identify the offending Report Form, as well as the report that is causing the failure.

**System action:** Processing is terminated.

**User response:** From **Report Forms**, define the required Report Form, or alter the report to specify a Report Form that is defined.

---

**CPA1033E Report Set JCL generation failed. Report Form not in correct format**

**Explanation:** CICS PA determined that the specified member is not in the correct format for a Report Form. Message CPA1034E is issued in conjunction with this message to identify the offending Report Form, as well as the report that is causing the failure.

**System action:** Processing is terminated.

**User response:** Verify that the specified member in the Report Form library is a Report Form. Otherwise, contact your IBM representative for help.

---

**CPA1034E Form=formname Report=report,  
Output=output**

**Explanation:** This message details failure information, and is issued in conjunction with a previous error message.

- *formname* is the offending Report Form.
- *report* is the Report that specified the offending Report Form.
- *output* is the Report Output DDname that further identifies the report.

**System action:** Action is determined by the previously issued error message.

**User response:** Response is determined from the previously issued error message. Use this message to determine which report is causing the failure.

---

**CPA1035E    Object List data set not available;  
DDname=xxxxxxx**

**Explanation:** A CICS PA dialog module has detected that the specified DDname for the Object List library was not allocated.

**System action:** Processing is terminated.

**User response:** Contact your IBM representative for help.

---

**CPA1036E    Report Set JCL generation failed. Object List is not defined**

**Explanation:** CICS PA has detected that an Object List specified in a report is not in the Object List library. Message CPA1038E is issued in conjunction with this message to identify the offending Object List, as well as the report that is causing the failure.

**System action:** Processing is terminated.

**User response:** Either:

- From the CICS PA Primary Option Menu, select **Object Lists** a define the required Object List or
- Alter the report to specify an Object List that is defined.

---

**CPA1037E    Report Set JCL generation failed. Object List not in correct format**

**Explanation:** CICS PA determined that the specified member is not in the correct format for an Object List. Message CPA1038E is issued in conjunction with this message to identify the offending Object List, as well as the report that is causing the failure.

**System action:** Processing is terminated.

**User response:** Verify that the specified member in the Object List library is an Object List. Otherwise, contact your IBM representative for help.

---

**CPA1038E    Object List=*objlist*, Report=*report*,  
Output=*output***

**Explanation:** This message details failure information, and is issued in conjunction with a previous error message.

- *objlist* is the offending Object List.
- *report* is the report or extract that specified the offending Object List.
- *output* is the Report Output DDname or Extract Data Set name that further identifies the report or extract.

**System action:** Action is determined for the previously issued error message.

**User response:** Response is determined from the previously issued error message. Use this message to determine which report or extract is causing the failure.

---

**CPA1039E    System Definitions are corrupted**

**Explanation:** CICS PA has detected that your System Definitions are corrupted. The System Definitions are stored in your CICS PA Table Library, member CPASMF1 for V1R1 and CPASMF2 for V1R2 or later.

**System action:** System validation processing is terminated.

**User response:** Contact your IBM representative for help.

---

**CPA1040E    Report Set JCL generation failed.  
Systems to be reported have no SMF  
Files specified**

**Explanation:** CICS PA has detected that all Systems and Groups to be reported do not have any SMF Files specified.

**System action:** Processing is terminated.

**User response:** From **System Definitions**, define SMF Files for the Systems or Groups that you want to report against. Alternatively, change the Missing SMF File option on the Run Report Set panel from 3 (Disregard offending reports) to either:

1. Issue error message. CICS PA will inform you which System or Group does not have SMF Files specified, or
2. Leave DSN unresolved in JCL. CICS PA will generate the report JCL, but leave the SMF File data set name(s) unresolved in the JCL.

---

**CPA1041E    Reason=*reason* Member=*membername*  
DSN=*datasetname***

**Explanation:** CICS PA could not SAVE your currently active EDIT session. The reasons why your SAVE request might have failed are:

- **ABEND** - Save request has abended
- **PDS Directory Full** - The PDS directory is full
- **BLDL or STOW error** - Unsupported return code from BLDL/STOW SVC

**System action:** The SAVE request is aborted.

**User response:** For ABENDSx37 conditions, compress the data set or re-allocate the data set with a larger primary/secondary space allocation.

For Directory Full or ABENDSB14-0000000C conditions, re-allocate the data set with a larger directory block allocation.

For all other conditions, contact your IBM representative for help.



---

**CPA1042E Dictionary data set is not RECFM=V**

**Explanation:** The specified data set cannot be used as a Dictionary data set because the record format is not Variable (RECFM=V).

**System action:** Processing is terminated.

**User response:** Ensure that the Dictionary data set is allocated with a variable record format. Alternatively, specify a new Dictionary data set name. CICS PA will allocate it with the correct attributes.

---

**CPA1043E Dictionary data set is a PDS but member name is not specified**

**Explanation:** The specified Dictionary data set is Partitioned (PDS) but a member name is not specified.

**System action:** Processing is terminated.

**User response:** Specify a member name and retry your request.

---

**CPA1044E Report Set JCL generation failed. HDB has no data within specified time range.**

**Explanation:** CICS PA has detected that the HDB is empty or has no container data sets in the specified time range. Message CPA1045E, issued after this message, identifies the HDB and report that are causing the failure.

**System action:** Processing is terminated.

**User response:** See the message CPA1045E following this message to identify the HDB and report. Either specify a different HDB or a different time range, and then retry your request.

---

**CPA1045E HDB=*hdb-name*, Report=*report-name*, Output=*ddname*, From=*yyyy/mm/dd hh:mm:ss*, To=*yyyy/mm/dd***

**Explanation:** This message provides additional details for the previous message. The From value only contains *hh:mm:ss* if the From and To dates are the same. The Output value identifies the ddname of the report output or extract data set.

**System action:** See the action for the previous message.

**User response:** Use this message to identify the report that caused the failure described by the previous message. For more information, see the response for the previous message.

---

**CPA1046E Report Set JCL generation failed. *condition* Report=*report-name*, Output=*ddname***

**Explanation:** CICS PA has detected one of the following conditions:

**HDB not specified.**

The required HDB was not specified in the indicated report.

**Unable to access Repository.**

The required repository could not be accessed either because it was not specified or it was not allocated.

This message identifies the report that caused the failure and the output ddname.

**System action:** Processing is terminated.

**User response:** Specify the required HDB in the failing report or ensure that the repository is specified in the Historical Database function and has been allocated.

---

**CPA1047E Report Set JCL generation failed. Form=*form-type* type is invalid for Report=*report-name***

**Explanation:** CICS PA has detected that the Report Form specified in a report is not the correct type of form for this report.

**System action:** Processing is terminated.

**User response:** Specify a compatible form type:

- For the Transaction Tracking List Report: specify a List Form.
- For Transaction Tracking Summary Report: specify a Summary Form.

---

**CPA1048E Report Set JCL generation failed. No Statistics reports selected for Statistics Extracts.**

**Explanation:** CICS PA has detected that no Statistics reports have been selected for processing.

**System action:** Processing is terminated.

**User response:** Specify one or more Statistics reports for processing.

---

**CPA1049E Transaction Profiling JCL generation failed. Log Stream is not valid for Baseline reporting.**

**Explanation:** The data source corresponding to the specified APPLIDs includes a log stream. Baseline data for transaction profiling can only be sourced from SMF files or performance HDBs, not log streams.

**System action:** Processing is terminated.

**User response:** Ensure that a log stream is not selected for Baseline processing by making one of the following updates:

- Change the report interval.
- Remove the log stream from the selected system definition.
- Select a different system.

- Clear the **Use Log Streams when available** setting in the File Selection profile options.

---

**CPA1050E Report Set JCL generation failed. Group contains more than one Log Stream for the same System type.**

**Explanation:** The group requested for report processing has more than one log stream for the same type of system. Message CPA1030E is issued with this message to identify the group and the report that caused the failure.

**System action:** Processing is terminated.

**User response:** In the system definition, ensure the group contains systems with no more than one distinct log stream for each type.

---

**CPA1051E Report Set JCL generation failed. No Image in the System for DASD-only Log Stream.**

**Explanation:** The system requested for report processing has no image specified. The DASDONLY Log stream option is selected in your profile options, indicating that all log streams will be treated as DASD-only and require an image name to execute.

Message CPA1030E is issued with this message to identify the system and the report that caused the failure.

**System action:** Processing is terminated.

**User response:** In the system definition, define an image for this system.

---

**CPA1052E Report Set JCL generation failed. Report Interval must be specified when using a Log Stream.**

**Explanation:** A log stream was selected for report processing but no report interval or an incomplete report interval was specified. The log stream retention period (RETPD) specified in the system definition is used to indicate the period of data it covers. You must provide a complete report interval so that CICS PA can both determine whether the log stream has all the data required for reporting and limit the amount of data that needs to be processed.

**System action:** Processing is terminated.

**User response:** Define a complete report interval with From and To dates and times.

---

**CPA1053E Report Set JCL generation failed. More than one Log stream found in report request using DASDONLY.**

**Explanation:** The group requested for report processing has more than one log stream for the same type of system. Message CPA1030E is issued with this message to identify the group and the report that caused the failure.

**System action:** Processing is terminated.

**User response:** In the system definition, ensure the group contains systems with no more than one distinct log stream for each type.

---

## 2000–2099 Data Take-up messages

These messages are issued during take-up processing. See “Personal Take-Up from SMF File” on page 104.

---

**CPA2000I Take-up processing has completed, RC=*nn***

**Explanation:** Take-up processing completed with the specified return code. If the return code is not zero, then Take-up processing encountered a problem.

**System action:** Take-up terminates.

**User response:** None required.

---

**CPA2001E SYSPRINT IS MISSING FROM THE JCL - RUN ABORTED**

**Explanation:** The required SYSPRINT DD card is missing from the JCL.

**System action:** Processing is terminated, RC=16.

**User response:** Correct the JCL and resubmit.

---

**CPA2002E Take-up aborted due to an unrecoverable error - RSN=*nnnn* INFO=*xxxxxxx***

**Explanation:** CICS PA could not complete take-up due to an unrecoverable error. RSN is the reason code. For some reason codes, INFO provides additional information.

**System action:** Processing is terminated.

**User response:** Contact your IBM representative for help.

---

**CPA2003E Dialog table DD CPATABL is missing from the JCL**

**Explanation:** No CPATABL DD card is present in the JCL but it is required.

**System action:** Processing is terminated.

**User response:** Correct the JCL and resubmit.

---

**CPA2004E    Dialog table data set (CPATABL) is unavailable**

**Explanation:** The data set associated with the CPATABL DD was unavailable when Take-up attempted to save. This is likely to be due to a conflict with a CICS PA Dialog user, or another Take-up job running concurrently.

**System action:** Processing is terminated.

**User response:** Resubmit the job.

---

**CPA2005W    Dialog Take-up member is invalid and will be replaced**

**Explanation:** The existing dialog Take-up member (CPASMTU) was found to be in error and is replaced, correcting the member.

**System action:** Processing continues.

**User response:** None required.

---

**CPA2006E    Concatenated data sets are not supported, ignored DD SMFINxxx**

**Explanation:** An SMFIN DD was found to contain concatenated data sets, which are not supported by Take-up. The Dialog associates Systems with SMF Files. Take-up must be able to identify the Systems present within each SMF data set.

**System action:** Processing continues, however the SMFIN DD(s) with concatenated data sets is ignored.

**User response:** If the ignored SMFIN DD's data sets are required, then modify the JCL for the given SMF files so that each of the concatenated data sets is assigned a unique SMF file name (SMFIN) and resubmit.

---

**CPA2007E    SMF input files (SMFIN) missing from the JCL**

**Explanation:** No SMF input files were found in the JCL. SMF input files have a DDname prefix of SMFIN.

**System action:** Processing is terminated.

**User response:** Correct the JCL and resubmit.

---

**CPA2008W    Unable to determine Unit Name for SMF file SMFINxxx**

**Explanation:** Take-up processing is unable to determine the Unit Name associated with the given SMF file's data set.

**System action:** Processing continues but the SMF file will not be assigned a Unit Name.

**User response:** After Take-up has been applied,

manually specify the Unit Name for this SMF file in **System Definitions**.

---

**CPA2009E    Unsupported device type for SMF file SMFINxxx**

**Explanation:** The given SMF file's data set has a device type that is not supported. Only DASD or Tape devices are supported by CICS PA.

**System action:** Processing is terminated.

**User response:** Ensure that the SMF file resides on a DASD or Tape volume then resubmit the job.

---

**CPA2010E    Unable to obtain information for SMF file SMFINxxx - RC=nn RSN=nnn INFO=xxxxxxxx**

**Explanation:** Take-up processing is unable to obtain some required information for the given SMF file. RC is the return code, RSN is the reason code, and INFO is either UNIT or DSN indicating the type of information that could not be obtained.

**System action:** Processing is terminated.

**User response:** Contact your IBM representative for help.

---

**CPA2011E    Dialog limit of 16 VOLSERs exceeded for SMF file SMFINxxx**

**Explanation:** The given SMF file has specified an uncataloged data set of more than 16 volumes, which is the Dialog limit. The CICS PA Dialog only supports data sets with more than 16 volumes if they are cataloged.

**System action:** Processing is terminated.

**User response:** Specify cataloged data sets, or uncataloged data sets with no more than 16 volumes.

---

**CPA2012I    Processing started for SMF file SMFINxxx**

**Explanation:** Take-up processing has begun for the specified SMF file.

**System action:** Processing continues.

**User response:** None required.

---

**CPA2013I    Processing ended for SMF file SMFINxxx - nnn system(s) found**

**Explanation:** Take-up processing has ended for the specified SMF file, and the number of systems identified by Take-up is given.

**System action:** Processing continues.

**User response:** None required.

---

**CPA2014I**    **CMF record for CICS system found,**  
**APPLID=xxxxxxx Release=v.r.m**

**Explanation:** Take-up processing has encountered a new CICS system, or a higher release level for a CICS system already listed.

**System action:** Processing continues.

**User response:** None required.

---

**CPA2015I**    **DB2 Accounting record found, DB2**  
**SSID=xxxx Release=v.r**

**Explanation:** Take-up processing has encountered a new DB2 subsystem or a higher release level for a DB2 subsystem already listed.

**System action:** Processing continues.

**User response:** None required.

---

**CPA2016I**    **MVS System Logger record found,**  
**System=xxxxLOGR**

**Explanation:** Take-up processing has encountered a new MVS System Logger system.

**System action:** Processing continues.

**User response:** None required.

---

**CPA2017I**    **SMF records for System xxxx start at**  
**mm/dd/yyyy hh:mm:ss.th**

**Explanation:** Take-up processing found SMF records for the given system, starting at the nominated date-time.

**System action:** Processing continues.

**User response:** None required.

---

**CPA2018I**    **DB2 subsystem ignored as Accounting**  
**Tokens not set, SSID=xxxx**

**Explanation:** Take-up processing has encountered records for a DB2 subsystem with CICS Attach activity, however the Accounting Token field is not set in any of these records, that is, ACCOUNTREC(TASK) or ACCOUNTREC(UOW) was not in use. As such the records are not suitable for CICS PA reporting and the DB2 subsystem name will not be included in Take-up.

**System action:** Processing continues.

**User response:** None required.

---



---

**CPA2019W**    **CMF record with unsupported release**  
**encountered - records ignored**  
**APPLID=xxxxxxx Release=v.r.m**

**Explanation:** A CMF record for a CICS release that is not supported by CICS PA has been encountered. All records for this CICS release are ignored.

**System action:** Processing continues.

**User response:** None required.

---

**CPA2020W**    **DB2 accounting record with**  
**unsupported release encountered -**  
**records ignored SSID=xxxx Release=v.r**

**Explanation:** A DB2 accounting record for a DB2 release that is not supported by CICS PA has been encountered. All records for this DB2 release are ignored.

**System action:** Processing continues.

**User response:** None required.

---

**CPA2022I**    **OMEGAMON record for CICS system**  
**found, APPLID=xxxxxxx**

**Explanation:** Take-up processing has encountered a new CICS system in the OMEGAMON for CICS (SMF 112) record.

OMEGAMON records do not specify the release level of the CICS system. If take-up processing does not find this CICS system in other types of record, then the CICS system defined in CICS PA will not specify a release level (VRM).

**System action:** Processing continues.

**User response:** None required.

---

**CPA2023I**    **CICS TG record for CICS system found,**  
**APPLID=xxxxxxx**

**Explanation:** Take-up processing has encountered a new CICS system in the CICS Transaction Gateway (SMF 111) record. If take-up processing does not find this CICS system in other types of record, then the CICS system defined in CICS PA will not specify a release level (VRM); this field is for a CICS Transaction Server VRM, not a CICS Transaction Gateway VRM.

**System action:** Processing continues.

**User response:** None required.

---

## 3000–3099 HDB messages

These messages are issued during HDB processing. See Chapter 22, "Using the HDB dialog," on page 627.



---

**CPA3000E    Repository VSAM Error,**  
**DDname=ddddddd, Func=ffffff/ss,**  
**RC=rc/cc, Req=rrrrrrr,**  
**Key=kkkkkkkkkkkkkkkkkkkkkkkkkkkkkk**

**Explanation:** A VSAM error occurred while accessing the Repository VSAM file. The message contains the following information:

**DDname**

DDname of the affected data set

**Func** VSAM call that resulted in the error

**RC** VSAM return code

**Req** Caller who initiated the request

**Key** VSAM key in error

**System action:** CICS PA terminates the function.

**User response:** Contact your system administrator.

---

**CPA3001E    Repository is corrupted, Reason=xx. Run Housekeeping to diagnose and repair**

**Explanation:** Your Repository is corrupted, or an update action cannot be performed against it. The reason codes are:

- 01**    Repository is empty on a non-Initialization call. CICS PA automatically initializes the Repository when you first use it.
- 02**    Repository does not contain a Control record.
- 11**    Selection Criteria record missing.
- 21**    PC Segment Code not set.
- 22**    PS/PI Segment Code not set.
- 23**    PI Segment Code has invalid Date/Time.
- 24**    PS Object List is missing.
- 25**    Unsupported PS Field Type.
- 31**    Template contains too many fields.

**System action:** CICS PA immediately stops processing.

**User response:** Contact your IBM representative for help.

---

**CPA3002W    HDB Object in use, try later,**  
**Name=xxxxxxx**

**Explanation:** Your request to edit a Repository object cannot be honored because another user is already editing it. The object can be an HDB Definition, a Template, or a Resource List.

**System action:** CICS PA immediately stops processing.

**User response:** Retry your request when the object becomes available.

---

**CPA3003W    object not found, Name=name**

**Explanation:** The specified object could not be found in the repository. The object can be an HDB definition, a Template, a Data Set Container, or a Resource List.

**System action:** CICS PA immediately stops processing.

**User response:** Refresh the list of objects by exiting

the current panel, and then retry your request. If the object still appears in the list but cannot be selected, then contact IBM.

---

**CPA3004W    Repository not available, try later**

**Explanation:** Your request to update the Repository could not be honored because another user is already updating it.

**System action:** CICS PA immediately stops processing.

**User response:** Updates should complete very quickly, so retry your save request.

---

**CPA3005E    ENQ macro failed, RC=xx**

**Explanation:** The ENQ macro has failed with an unsupported Return Code.

**System action:** CICS PA immediately stops processing.

**User response:** Exit ISPF to free the ENQ and then retry your request. If the problem reoccurs, contact IBM.

---

**CPA3007W    object already exists, Name=name**

**Explanation:** The specified object already exists in the Repository. You cannot create a new object with the same name. The object can be an HDB Definition, a Template, or a Resource List.

**System action:** CICS PA immediately stops processing.

**User response:** Select another name for the object and retry your request.

---

**CPA3008W    object is required, Name=name**

**Explanation:** The specified object cannot be deleted from the Repository because another object references it.

**System action:** CICS PA immediately stops processing.

**User response:** None required. The object cannot be deleted at present. In some cases, running a Housekeeping job will resolve this issue because Housekeeping deletes objects from the Repository that are no longer needed.

---

**CPA3009C    HDB - failing component and action**

**Explanation:** CICS PA has suffered a catastrophic failure in the specified component.

**System action:** CICS PA immediately stops processing.

**User response:** If the problem reoccurs, contact your IBM representative.

---

**CPA3010W HDB Definition is using an undefined Template, HDB=xxxxxxx, Template=xxxxxxx**

**Explanation:** There was an attempt to save an HDB definition that references an undefined Template Name.

**System action:** The request is rejected.

**User response:** Create the Template and retry the request, or change the name of the Template to one that exists in the Repository and retry the request.

---

**CPA3011E HDB Template/System/Group not found, Name/Token=xxxxxxx**

**Explanation:** The required template, system definition, or group could not be found, possible due to an integrity problem in the repository.

**System action:** CICS PA immediately stops processing.

**User response:** Contact your IBM representative for help.

---

**CPA3012E HDB has already been loaded for the current SMF input, Name=xxxxxxx**

**Explanation:** The HDB load failed due to the same SMF file being used to load the HDB for the same time interval. This restriction is applied to prevent duplicate data being loaded into the same HDB by multiple loads.

**System action:** CICS PA immediately stops processing.

**User response:** Rerun the HDB load either with a different SMF input file or specify a time interval that does not overlap previous loads.

---

**CPA3013E Repository is not allocated in JCL, missing DDname=xxxxxxx**

**Explanation:** The Repository DD was not specified in the JCL.

**System action:** CICS PA immediately stops processing.

**User response:** Add the Repository DD card for the associated HDB in the JCL and then rerun.

---

**CPA3014E HDB Template Name=xxxxxxx is reserved.**

**Explanation:** The specified HDB Template name is a CICS PA internal Template name that cannot be specified by the user.

**System action:** CICS PA immediately stops processing.

**User response:** Select another template name and retry your request.

---

**CPA3015E HDB Template Name=xxxxxxx is restricted. This change is not permitted.**

**Explanation:** The specified HDB Template is a CICS PA internal template. The only fields that can be updated are the Interval and Selection Criteria.

**System action:** The template cannot be saved with the changes you have made.

**User response:** Cancel the changes to any fields other than Interval and Selection Criteria, or create a new template under another name that has the attributes you want.

## 4000–4099 HDB SMF Statistics messages

These messages are issued during HDB SMF Statistics processing. See Chapter 19, “Using the Statistics reporting dialog,” on page 551.

---

**CPA4001E PDS Member does not exist;**  
**Name=xxxxxxx, BLDL RC=xxxx-xxxx**

**Explanation:** The SMF input file is a PDS but the specified member name does not exist. The BLDL return and reason codes indicate the failure reason.

**System action:** SMF file processing stops.

**User response:** Verify that the member exists in the SMF file PDS:

- If it does not exist, then specify a member name that exists and retry your request.
- If it does exist, then check the BLDL return and reason codes to determine the failure reason.

---

**CPA4002E CICS Statistics not found in SMF File**  
*filename*

**Explanation:** CICS PA did not find any CICS Statistics records in the SMF File.

**System action:** CICS PA stops processing the specified SMF File.

**User response:** If CICS Statistics records were expected for this file, review your CICS Statistics settings and SMF Dump options.

---

**CPA4003E CICS Version xxx is not supported**

**Explanation:** CICS PA cannot process the CICS statistics because they were generated by an unsupported version of CICS Transaction Server. CICS PA supports CICS TS V3R1 (640) and later versions.

**System action:** CICS PA stops processing the specified SMF File.

**User response:** You cannot use CICS PA to report Statistics for this version of CICS Transaction Server.

---

**CPA4004W Attention Interrupt has stopped SMF File processing**

**Explanation:** CICS PA has stopped reading the SMF Input file because an Attention Interrupt was received.

**System action:** CICS PA stops reading the SMF file and displays only data read to this point.

**User response:** Press Enter to resume SMF Input file processing.

---

**CPA4005E SMF input file is not available.**  
**DDname ddname allocation error;**  
**RDJFCB RC=rc**

**Explanation:** The RDJFCB system service determined

that the SMF input file is not allocated to the specified DDname.

**System action:** SMF file processing stops.

**User response:** Verify that the SMF file data set name is specified correctly. The data set must reside on an online DASD volume. If the data set is cataloged, it must reside on the cataloged VOLSER. If the data set is not cataloged, it must reside on the specified VOLSER.

---

**CPA4006E SMF input file does not reside on the specified volume; VOLSER=volser,**  
**OBTAIN RC=rc**

**Explanation:** The DADSM OBTAIN system service determined that the SMF input file does not reside on the required volume, as indicated in the Catalog or the specified VOLSER.

**System action:** SMF file processing stops.

**User response:** Verify that the SMF file data set name is specified correctly. The data set must reside on an online DASD volume. If the data set is cataloged, it must reside on the cataloged VOLSER. If the data set is not cataloged, it must reside on the specified VOLSER.

---

**CPA4007E CICS Statistics ID is not supported;**  
**STID=stid, Domain=xx, VRM=yyy,**  
**BlkID=zz**

**Explanation:** The specified CICS Statistics ID (STID as defined in macro DFHSTIDS) is not supported by CICS PA. CICS PA supports all types of CICS statistics records and this error should not occur.

**System action:** The CICS Statistics record is ignored by CICS PA and SMF file processing continues.

**User response:** If the specified Stats ID is a valid ID defined in DFHSTIDS, then contact IBM. Support for this ID might need to be added via the service process.

If the specified ID is not a valid Stats ID, then contact IBM. CICS PA might have incorrectly interpreted the statistics record.

---

**CPA4008E SMF File Open request failed;**  
**ABEND=xxxxxxx-yyyzyyyy**

**Explanation:** The requested SMF File could not be opened. The OPEN request failed with the specified ABEND Code. The most common reason is ABENDS913 because access was denied due to an authorization failure.

**System action:** CICS PA processing stops.

**User response:** Check the OPEN SVC messages for

the failure reason. Correct the problem and retry your request.

---

**CPA4009E SMF input file is not DSORG=PS;  
DS1DSORG=xxxx**

**Explanation:** The SMF input file does not have a Data Set Organization (DSORG) of PS. CICS PA only supports SMF files with DSORG=PS. DS1DSORG is the unsupported DSORG from the DSCB.

**System action:** SMF file processing stops.

**User response:** Ensure that the specified SMF input file is a valid SMF data set with DSORG=PS.

---

**CPA4010E CICS Statistics for the selected interval are no longer available**

**Explanation:** The CICS statistics interval that you selected is no longer available in the SMF File. The SMF File must have been updated after CICS PA first identified all the statistics intervals.

**System action:** SMF file processing stops.

**User response:** Refresh the statistics intervals. Exit from processing this data set then reprocess it to rebuild the statistics intervals.

---

**CPA4011E CICS Domain is not supported;  
Domain=xx, VRM=yyy**

**Explanation:** The specified Statistics Domain ID (SMFSTDID in macro DFHSMFDS) is not supported by CICS PA. CICS PA supports all types of CICS statistics records and this error should not occur.

**System action:** The CICS Statistics record is ignored by CICS PA. SMF file processing continues.

**User response:** If the Domain ID is a valid Domain for the specified release of CICS Transaction Server, then contact IBM. Support for this Domain ID might need to be added via the service process.

If the specified Domain ID is not a valid Domain, then contact IBM. CICS PA might have incorrectly interpreted the statistics record.

---

**CPA4012E CICS Statistics record processing failed;  
Domain=xx, VRM=yyy**

**Explanation:** CICS PA could not interpret a Statistics record because its format is not supported.

**System action:** The CICS Statistics record is ignored by CICS PA. SMF file processing continues.

**User response:** Verify that the record can be reported by the CICS Statistics utility program (DFHSTUP). If DFHSTUP processes the record successfully, then contact IBM. CICS PA might have incorrectly interpreted the statistics record.

---

**CPA4013E SMF input file is not RECFM=VB or  
VBS; DS1RECFM=xx**

**Explanation:** The SMF input file format is not valid.

**System action:** SMF file processing stops.

**User response:** Ensure that the specified SMF input file is a valid SMF data set.

---

**CPA4014W CICS xx Version yyy is not supported**

**Explanation:** CICS PA cannot process the CICS statistics because they were generated by an unsupported version of CICS Transaction Server or CICS Transaction Gateway.

**System action:** CICS PA continues processing the specified SMF File.

**User response:** You cannot use CICS PA to report Statistics for this version of CICS Transaction Server or CICS Transaction Gateway.

---

## Chapter 27. Problem determination

This chapter contains information about CICS PA problem determination.

- “Eliminating user errors”

This section gives you a general idea of how to do CICS PA problem determination. It describes the preliminary steps you can take to be sure that the problem you are experiencing is a CICS PA problem and discusses some common user errors that you might be able to resolve without IBM assistance.

- “Diagnosis” on page 755

This section describes the steps you need to follow to gather the information needed to work with IBM support.

For the list and explanation of CICS PA messages, see Chapter 26, “Messages,” on page 709.

---

### Eliminating user errors

This section explains how to diagnose problems or failures quickly by identifying the failing program component – a CICS PA error, an error in other components of the system on which CICS PA is running, or a user error. The following information is discussed:

- How to collect diagnostic information
- How to identify types of CICS PA problems
- Common causes of CICS PA problems.

### Collecting helpful diagnostic information

Perform the following steps to determine the source of a problem:

1. Describe the symptoms.
2. List the following items:
  - Error message data
  - Program termination message data.
3. Analyze the failure as described in the following section.

### Identifying types of problems

After collecting the information described in the preceding paragraph, determine the type of problem you have found. Problems might be caused by:

- The way you are using CICS PA
  - CICS PA command language or Job Control language (JCL) errors
  - Data-related errors
  - Improper installation.
- Failure with other software components, such as CICS or DFSORT
- CICS PA program errors.

The first step toward solving your problem might be to ask yourself and others in your area if this is the first time that this function or request has been made, or if this function or request worked in the past and has started failing recently. If the function worked before, find out as much as possible about what has changed in your system. There is a good chance that the change has directly or indirectly

caused your problem. If this is the first time the function has been attempted, the problem is most likely the way you are using the function, or that the function is in error.

With CICS PA, problems might be caused either by the way you are using the product, by another component of your operating system, or by a combination of these factors. The next section tells you how to identify common causes of these types of problems.

For information on program errors that are caused by the CICS PA licensed product, see “Diagnosis” on page 755.

## Common causes of CICS PA problems

### JCL and batch command errors

When CICS PA detects a JCL error or batch command coding error, it issues messages to help you determine the cause. Many of these messages contain all the information you need to find and fix the problem. See Chapter 26, “Messages,” on page 709 for a complete listing of CICS PA messages. The text of each entry explains the message and tells you the following:

- What action CICS PA takes when it issues the message, and
- What action you should take to eliminate the error condition.

### Data-related problems

Before assuming that an error is caused by a defect in CICS PA, ensure that the input data CICS PA is trying to process is valid. Three types of data problems might occur that prevent CICS PA from accurately processing data collected by the CICS Monitoring Facility (CMF). These data problems are:

1. Absence of data dictionaries
2. Absence of data within a particular record type
3. Invalid data values

#### Absence of data dictionaries

Two symptoms occur when data dictionaries are absent.

The first, and most common, symptom is a message indicating that data records were encountered before dictionary records. This might be due either to an error in the CMF data or a user-related error. You can cause this error when copying CMF records from one data set to another. When copying CMF records, make sure that the dictionary records are copied along with the data records and appear *before* their associated data records. If the data set was not copied, the missing or misplaced dictionaries might be caused by an error in CMF.

**Note:** When CICS writes to an MVS SMF data set, CICS does not get notified that a data set switch has occurred and cannot write the dictionaries at the beginning of the new data set. It is necessary that SMF data sets be processed in the same order in which they were created.

The second symptom is the occurrence of numerous error messages. These messages tell you that CICS PA was unable to find the indicated data field. This happens when the dictionaries are lost and is due to improper link edit of the dictionary processor, ECPDICMF.



## Missing fields

The second problem, absence of data within a particular record type, might be a CMF data error or a user interpretation error. Because many of the fields collected by CMF are optional, you can exclude the data from a particular record. CICS PA issues a message indicating that the field is **Missing** from the record. Although this is not a severe error, the report might not provide an accurate account of the data. This is especially true on Summary reports. If a data field in the summation is missing for any part of the summarization interval, then the field is marked Missing.

## Invalid data values

The final data-related problem concerns invalid data values. If CICS PA is having trouble processing some of the CMF data fields, check for errors by validating the data in the following way:

- Run the CICS batch program DFH\$MOLS. For information on using DFH\$MOLS, see the *CICS Operation and Utilities Guide*. DFH\$MOLS can print every field in each of the CMF record types and if it cannot process the data correctly, then the problem is with the data.

**Note:** DFH\$MOLS generates a page or more of output for each CMF record that you select for processing. Be very careful when specifying how much data you want printed.

## Absence of data records

A good way to determine whether you are processing proper data is to examine the Dispatcher Tables Summary (see Figure 418) and End of File Record Counts (see Figure 419 on page 754).

These two summaries are automatically produced at the end of report and extract processing. They provide a good starting point for problem determination when it is expected that some or all of the input data is missing.

V5R2M0 08:48:05 10/22/2012		CICS Performance Analyzer Dispatcher Tables Summary					
SMF DD or Log Stream name	Off	PreScan	Routine	Output	EOF	ParmName	Codes
SMFIN001+	4	CPAPRSMF	CPALSTMF	LIST0001	Y	LIST0001	31
			CPALXMF	LSTX0001	Y	LSTX0001	31
			CPASUMMF	SUMM0001	Y	SUMM0001	31
			CPAFNLMF	TOTL0001	Y	TOTL0001	31
			CPATRUMF	RESU0001	Y	RESU0001	31,35
SMFIN002	4	CPAPRSMF*	CPALOGMF*	LOGR0002	Y	LOGR0002	58
SMFIN003	4	CPAPRSMF	CPADB2MF	DB2R0003	Y	DB2R0001	31,65
SMFIN004+	4	CPAPRSMF*	CPAMROMF*	CROS0001*	Y	CROS0003	31
			CPAMROMF*	CROS000M*	Y	CROS0004	31
			CPAMROMF*	CROS0001*	Y	CROS0005	31
			CPAMROMF*	CROS000M*	Y	CROS0006	31
			CPAMROMF*	CROS0001*	Y	CROS0007	31
			CPAMROMF*	CROS000M*	Y	CROS0008	31

Figure 418. Example of the Dispatcher Tables Summary report

DD or Log Stream name	RecID	Record Type	Count	Pct of Total
SMFIN001+	X'30'	Performance Dictionary	18	0.06%
	X'31'	Performance Class	1,277	4.29%
	X'35'	Resource Usage	306	1.02%
	X'51'	CICS Statistics	26,829	90.13%
	X'58'	MVS System Logger	733	2.46%
	X'65'	DB2 Accounting	304	1.02%
	X'74'	MQ Accounting	305	1.02%
SMFIN001+	Total		29,772	100.00%
	Total	SMF Records	2,092	
SMFIN002	X'30'	Performance Dictionary	3	0.04%
	X'31'	Performance Class	250	3.18%
	X'51'	CICS Statistics	7,596	96.73%
	X'54'	CICS Server Statistics	4	0.05%
SMFIN002	Total		7,853	100.00%
	Total	SMF Records	3,419	
SMFIN003	X'30'	Performance Dictionary	3	0.01%
	X'31'	Performance Class	126	0.22%
	X'41'	Exception Class	8	0.01%
	X'51'	CICS Statistics	57,294	99.76%
SMFIN003	Total		57,431	100.00%
	Total	SMF Records	2,462	

Figure 419. Example of the End of File Record Counts report

## Batch Abends U1000, U1001, U1002

When the batch report processor encounters a severe error condition in STAE environments, it issues user abends 1000, 1001, or 1002. Analyzing the problem with the following factors in mind might help you identify the cause of the problem and its solution.

- User 1000 abend indicates that CICS PA encountered an error after command processing and before reading any data.
- User 1001 abend indicates that CICS PA encountered an error after reading in all the data and reaching end-of-file on the input file.
- User 1002 abend indicates that CICS PA encountered an error while reading and processing data.

CICS PA also issues a message indicating that a STAE exit was invoked.

**Note:** The STAE environment allows you to signal a logical end-of-file to record processors when an unexpected error occurs. The data accumulated up to the point of the error is then available for reports. Without logical end-of-file, the data would be lost.

User abends issued by the STAE exit processing frequently mask the real problem. When CICS PA encounters an error condition, such as a protection exception, it tries to recover and produce as many reports as possible, without reading any more data. It then abnormally terminates with one of these user abends.

Logic errors are generally easier to diagnose if processing stops immediately. When a STAE exit runs, memory and register values change, making the cause of the abend harder to identify. If you need a dump for analysis by IBM support, be sure to specify **PARM=NOSTAE** on the EXEC statement of your JCL.

If you specify NOSTAE and still get user abends, check the error messages. Some severe CICS PA messages cause user abends 1000, 1001, or 1002 after they are issued. NOSTAE does not affect these user abends. If you need to call IBM support, make sure you know which message causes you to stop processing.



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## Diagnosis

If you are experiencing difficulty using CICS PA, your first step should be to make sure the problem is not due to the way you are using the product. Before going through the procedures described here, you should eliminate user error as a cause of your problem. If you have turned to this section without reviewing “Eliminating user errors” on page 751, you might save yourself some time and trouble by making sure that your problem is not discussed there.

If you have determined that CICS PA is the cause of your problem, you need to gather information to help isolate the problem and find a solution. The information required is:

- Type of failure
- Function that failed
- Release level
- Maintenance level

Some of the information (for example, program number or service level), is independent of the particular problem and does not require you to make a judgement. For other information, you must choose one of several possibilities. Your choice depends on the specific symptoms of the problem.

For reporting the problem to IBM, you need to be prepared to provide supporting materials and evidence such as sample inputs and outputs, and a description of the circumstances in which the problem occurred.

### Types of failure

The following descriptions should help you determine which condition best describes the type of failure that has occurred. If you do not know which condition to select, choose one that best describes the failure. You should consult the *CICS Problem Determination Guide* for additional information on abends, waits, loops, and incorrect output.

#### Abend

This type of failure occurs when a program terminates prematurely. This condition almost always produces a dump. When an abend occurs, collect the following information before calling IBM:

- The abend code of the dump
- A brief description of what was entered to cause the abend to occur
- If the abend was a program interrupt,
  - The program that abended
  - The displacement within the program where the abend occurred
  - The data which was being referenced when the abend occurred.

#### Documentation

This problem involves online and hardcopy documentation. Report a documentation problem if it falls into one of the following categories:

- Documented descriptions of the CICS PA organization or operation do not match the actual organization or operation.
- Information that is essential to the installation, operation, or service of CICS PA is missing from or incorrect in the documentation.
- Information in the documentation is unclear and prevents the effective use of CICS PA.

**Note:** If you have suggestions, comments, or questions concerning a CICS PA book, use the appropriate Reader's Comment Form at the back of the book.

IBM requires the following information to resolve a documentation problem:

- The complete document number, including the revision number, or the message number or function in error, if the error is in the online help text
- The section and page number of the error
- The sentence or sentences in error
- A brief description of what you think is correct.

#### **Error**

An error condition is normally detected by the presence of an error message. Information required to resolve this type of problem is:

- The message number
- The program that issued the message, if known
- The data that caused the message to appear.

#### **Incorrect output**

This type of problem involves missing, extra and unnecessary, or incorrect data. CICS PA is not likely to recognize that a problem exists; therefore, an error message might not appear. IBM needs the following information to resolve this type of problem:

- The report in error
- The field or fields in error
- Some indication of why you feel the information is incorrect, unnecessary, or needed.

#### **Loop**

A loop condition generally causes an abend to occur. MVS has specific abend codes to indicate loop conditions. These codes can be found in the appropriate books. When a loop occurs, the following information is required:

- The program causing the loop
- As many instructions as can be reasonably determined within the loop
- A brief description of what caused the loop to occur.

#### **Message**

A message error occurs when a message:

- Contains incorrect data
- Is not documented, or is not documented correctly
- Is generated when it shouldn't be
- Is not generated when it should be
- Is not the message which should occur.

The information required to resolve this type of error is:

- The message number
- A brief description of what is wrong with the message
- A brief description of what the message should be.

#### **Performance**

A performance problem is generally one of the hardest problems to resolve. Typically, it does not occur in a batch job. If you feel you are having a performance problem with CICS PA, supply IBM with the following information:

- Your operating environment, that is, the processor, the operating system, and any other factor which you feel might be contributing to the problem.
- The CICS PA function.
- The CICS PA modules, if they can be reasonably determined.
- Whether the problem always occurs, or only occurs at certain times.

- If the problem occurs occasionally, a description of what else was running in the system when the problem occurred.

#### **Wait**

This type of error normally occurs under the following conditions:

- CICS PA is waiting for some condition to be satisfied.
- CICS PA appears to be waiting for some event that is unlikely to occur.
- CICS PA has not recognized the occurrence of an event for which it has suspended processing.

Sometimes a wait error condition generates a dump. You should refer to the appropriate operating system reference books to determine the abend code associated with this type of error condition. The information necessary to resolve this type of problem is:

- The online function or report involved
- A dump, if one was generated.

### **Release level (VRM)**

The release level (Version, Release, Modification) of CICS PA should be stated in all communications with IBM. In addition, you should know the release level of any of the following products that are relevant to the problem:

- z/OS
- CICS (this should be at least CICS Transaction Server for z/OS Version 3.1)
- DFSORT

### **Maintenance level**

The maintenance level of CICS PA corresponds to the latest PTF tape installed on CICS PA, plus any Authorized Program Analysis Reports (APARs) installed on top of the Program Temporary Fix (PTF) tape. If no maintenance has been installed on CICS PA, tell the IBM support representative the date when CICS PA was installed on your system. It is also necessary to know the maintenance level of the products described in the previous section “Release level (VRM).”

### **Problem materials and evidence**

If a problem occurs while using CICS PA, the following information is required:

1. A copy of the input file used for the job
2. A copy of the job stream used for the job, including the Job Control Language (JCL) and commands
3. A listing of the output generated, including:
  - The report listing
  - The messages issued.
4. A written scenario describing what information the user was trying to achieve from the CICS PA report at the time of the error (also state whether the sample jobs were run at the time CICS PA was installed).



## Chapter 28. CMF Field IDs by CICS version

The following cross-reference table relates the CICS monitoring facility (CMF) field IDs for performance class and transaction resource class data with the CICS versions to which they apply.

Some columns in the table require explanation:

### CICS PA field name

The name used in report forms, HDB templates, and selection criteria (and the corresponding batch command operands `FIELDS` and `SELECT`):

- A blank value in this column indicates that the CICS PA field name is the same as the CMF field name.
- “N/A” indicates that the field is not available, typically because it is a very long field, or it is an unprintable field such as a unit-of-work or a flag.

### Column heading

The heading used to identify the field in CICS PA reports and extract data sets.

### CICS version

The CICS versions to which a field applies:

- Yes, the field applies to this CICS version
- No, the field does not apply to this CICS version

The table is sorted by CMF group and CMF field ID.

### Note:

1. DBCTL fields can only be specified if the MCT contains the DBCTL EMP defined in SDFHSAMP member DFH\$MCTD.
2. Some special fields, such as `APPLID` and `RESPONSE`, are not defined in the CMF Dictionary and are given a group name of “CICSPA”. These fields are either derived from the fixed section of the CMF record (for example, `APPLID`), or calculated from two or more other CMF fields (for example, `RESPONSE`).
3. The `FILENAME`, `TSQNAME`, and `DPLNAME` fields are only available when CMF transaction resource class data is being collected.
4. The `DFHAPPL` fields are only available when application programs invoke the application naming event monitoring points. See the `APPLNAME` parameter on the `DFHMCT TYPE=INITIAL` macro in the *CICS Resource Definition Guide*.

Table 17. Cross-reference: CMF field ID × CICS version

CMF field						CICS version						Description
Group	Type	ID	Name	CICS PA field name	Column heading	6	6	6	6	6	6	
						4	5	6	7	8	9	
						0	0	0	0	0	0	
CICSPA	A	001	TOTRECS		TotlRecs	•	•	•	•	•	•	Cross-System Total record count
CICSPA	I	001	ALRTSEQ#		ALRTSEQ#	•	•	•	•	•	•	Alert Sequence Number
CICSPA	A	002	APPLRECS		APPLRecs	•	•	•	•	•	•	Cross-System Application records
CICSPA	I	002	ALRTSEV		ALRTSEV	•	•	•	•	•	•	Alert Severity
CICSPA	A	003	TRANROUT		TranRout	•	•	•	•	•	•	Cross-System Transaction Routing records
CICSPA	I	003	ALRTFLD		ALRTFLD	•	•	•	•	•	•	Alert field Name
CICSPA	I	003	ALRTFLDT		ALRTFLDT	•	•	•	•	•	•	Alert field type

Table 17. Cross-reference: CMF field ID × CICS version (continued)

CMF field						CICS version						Description
Group	Type	ID	Name	CICS PA field name	Column heading	6	6	6	6	6	6	
						4	5	6	7	8	9	
						0	0	0	0	0	0	
CICSPA	A	004	FUNCSHIP		FuncShip	•	•	•	•	•	•	Cross-System Function Shipping records
CICSPA	A	005	DPLRECS		DPL Recs	•	•	•	•	•	•	Cross-System DPL records
CICSPA	I	005	ALRTACTV		ALRTACTV	•	•	•	•	•	•	Alert actual field value
CICSPA	I	006	THRSHOPR		THRSHOPR	•	•	•	•	•	•	Threshold operator
CICSPA	I	007	THRSHVAL		THRSHVAL	•	•	•	•	•	•	Threshold value
CICSPA	I	008	RESFLDNM		RESFLDNM	•	•	•	•	•	•	Resource field name
CICSPA	I	009	RESFLDVA		RESFLDVA	•	•	•	•	•	•	Resource field value
CICSPA	I	010	ALERTDEF		ALERTDEF	•	•	•	•	•	•	Alert Definition name
CICSPA	D	901	RESP	RESPONSE	Response	•	•	•	•	•	•	Transaction response time
CICSPA	X	902	TASKCNT		#Tasks	•	•	•	•	•	•	Total Task count
CICSPA	C	903	APPLID		APPLID	•	•	•	•	•	•	CICS Generic APPLID
CICSPA	C	904	MVSID		MVS ID	•	•	•	•	•	•	MVS SMF ID
CICSPA	C	905	JOBNAME		Jobname	•	•	•	•	•	•	Job Name
CICSPA	D	906	COMMWAIT		CommWait	•	•	•	•	•	•	Communications wait time
CICSPA	D	907	IOWAIT		I/O Wait	•	•	•	•	•	•	Total IO wait time
CICSPA	D	908	IRESP		Int Resp	•	•	•	•	•	•	Transaction internal response time
CICSPA	C	909	RELEASE		Rlse	•	•	•	•	•	•	CICS release
CICSPA	D	910	JVMTIME		JVM Meth	•	•	•	•	•	•	JVM Method time
CICSPA	D	911	RMIOTIME		RMIOTime	•	•	•	•	•	•	Resource Manager Interface (RMI) other time
CICSPA	C	912	UOWID		UOW ID	•	•	•	•	•	•	Network UOW ID
CICSPA	C	913	UOWSEQ		UOW Seq	•	•	•	•	•	•	Network UOW Sequence Number
CICSPA	X	914	TASKTCNT		#TTasks	•	•	•	•	•	•	Total Task Termination count
CICSPA	A	915	ALERT		ALERT	•	•	•	•	•	•	Total Alert count or percentage
CICSPA	C	916	FILENAME		FileName	•	•	•	•	•	•	File name
CICSPA	C	917	TSQNAME		TSQ Name	•	•	•	•	•	•	Temporary Storage Queue Name
CICSPA	D	918	TOTCPU		Tot CPU	•	•	•	•	•	•	Total Task CPU Time
CICSPA	C	919	DPLNAME		DPL Name	•	•	•	•	•	•	Distributed program link name
CICSPA	D	920	OSLATNCY		OSLatncy	–	•	•	•	•	•	Task start latency since Origin task start
CICSPA	D	921	PHLATNCY		PHLatncy	–	–	–	•	•	•	Previous Hop latency time
CICSPA	D	922	LOCKWAIT		LockWait	–	–	–	–	•	•	Total Lock wait time
CICSPA	D	923	LOCKSDLY		LocksDly	–	–	–	–	•	•	Total Lock wait time and Enqueue delay time
CICSPA	D	924	ENQSDLY		ENQsDlay	•	•	•	•	•	•	Total ENQ wait time
CICSPA	D	925	QRDSPROTO		QRDspRto	•	•	•	•	•	•	QR TCB Dispatch to CPU ratio
CICSPA	D	926	RATEMIN		RateMin	•	•	•	•	•	•	Transaction rate per minute
CICSPA	D	927	RATESEC		RateSec	•	•	•	•	•	•	Transaction rate per second
CICSPA	D	928	OMODDLY		OtModDly	–	–	–	–	•	•	Other CICS TCB Mode redispach wait time
CICSPA	D	929	CPUISPE		CPUisSPe	–	–	–	–	•	•	CPU time that is offload eligible
CICSPA	D	930	CPUONSP		CPUonSP	–	–	–	–	•	•	CPU time on Specialty Processor
CICSPA	D	931	CPUONCPN		CPUonCPn	–	–	–	–	•	•	CPU time on standard CP not offload eligible
CICSPA	C	932	CECMTYPE		CECMType	–	–	–	–	•	•	CEC machine type and model number
CICSPA	C	933	ACAPPLVR		ACAppIVr	–	–	–	–	•	•	Application context application version
CICSPA	D	934	SPEPCT		SpePct	–	–	–	–	•	•	% specialty processor CPU time
CICSPA	D	935	STCPPCT		StCPPct	–	–	–	–	•	•	% standard CP CPU time not offload eligible
CICSPA	D	936	OFLDPCT		OfldPct	–	–	–	–	•	•	% offload eligible CPU time
CICSPA	D	937	CPUIPCT		CPUIPct	–	–	–	–	•	•	% CPU time based on interval
CICSPA	D	938	SPEIPCT		SpeIPct	–	–	–	–	•	•	% specialty processor CPU based on interval
CICSPA	D	939	STCPIPCT		StCPIPct	–	–	–	–	•	•	% std CP not ofld eligible based on interval
CICSPA	D	940	OFLDIPCT		OfldIPct	–	–	–	–	•	•	% offload eligible CPU time based on interval
CICSPA	D	941	OFFLPCT		OfflPct	–	–	–	–	•	•	% offload eligible CPU time on standard CP
CICSPA	D	942	OFFLIPCT		OfflIPct	–	–	–	–	•	•	% ofld elig CPU time on std CP based on intrvl
CICSPA	D	943	CPUSU		SrvcUnit	•	•	•	•	•	•	CPU Service Units
DBCTL	C	001	PSBNAME		PSB Name	•	•	•	•	•	•	PSB Name
DBCTL	S	002	POOLWAIT		PoolWait	•	•	•	•	•	•	Elapsed wait time for Pool Space
DBCTL	S	003	INTCWAIT		IntCWait	•	•	•	•	•	•	Elapsed wait time for Intent Conflict
DBCTL	S	004	SCHTELAP		SchTElap	•	•	•	•	•	•	Elapsed time for Schedule Process

Table 17. Cross-reference: CMF field ID × CICS version (continued)

CMF field						CICS version						Description
Group	Type	ID	Name	CICS PA field name	Column heading	6	6	6	6	6	6	
						4	5	6	7	8	9	
						0	0	0	0	0	0	
DBCTL	S	005	DBIOELAP		DBIOElap	•	•	•	•	•	•	Elapsed time for Database I/O
DBCTL	S	006	PILOCKEL		PILockEl	•	•	•	•	•	•	Elapsed time for PI Locking
DBCTL	A	007	DBIOCALL		DBIOCall	•	•	•	•	•	•	Number of Database I/Os
DBCTL	A	008	GUCALL		GUcall	•	•	•	•	•	•	Number of Database GU calls issued
DBCTL	A	009	GNCALL		GNcall	•	•	•	•	•	•	Number of Database GN calls issued
DBCTL	A	010	GNPCALL		GNPcall	•	•	•	•	•	•	Number of Database GNP calls issued
DBCTL	A	011	GHUCALL		GHUcall	•	•	•	•	•	•	Number of Database GHU calls issued
DBCTL	A	012	GHNCALL		GHNcall	•	•	•	•	•	•	Number of Database GHN calls issued
DBCTL	A	013	GHNPCALL		GHNPcall	•	•	•	•	•	•	Number of Database GHNP calls issued
DBCTL	A	014	ISRTCALL		ISRTcall	•	•	•	•	•	•	Number of Database ISRT calls issued
DBCTL	A	015	DLETCALL		DLETcall	•	•	•	•	•	•	Number of Database DLET calls issued
DBCTL	A	016	REPLCALL		REPLcall	•	•	•	•	•	•	Number of Database REPL calls issued
DBCTL	A	017	DLICALLS		DLIcalls	•	•	•	•	•	•	Total DL/I Database calls
DBCTL	A	018	TESTENQS		TestENQs	•	•	•	•	•	•	Number of Test Enqueues
DBCTL	A	019	TESTENQW		TestENQW	•	•	•	•	•	•	Number of waits on Test Enqueues
DBCTL	A	020	TESTDEQS		TestDEQs	•	•	•	•	•	•	Number of Test Dequeues
DBCTL	A	021	UPDTENQS		UpdtENQs	•	•	•	•	•	•	Number of Update Enqueues
DBCTL	A	022	UPDTENQW		UpdtENQW	•	•	•	•	•	•	Number of waits on Update Enqueues
DBCTL	A	023	UPDTDEQS		UpdtDEQs	•	•	•	•	•	•	Number of Update Dequeues
DBCTL	A	024	EXCLENQS		ExclENQs	•	•	•	•	•	•	Number of Exclusive Enqueues
DBCTL	A	025	EXCLENQW		ExclENQW	•	•	•	•	•	•	Number of waits on Exclusive Enqueues
DBCTL	A	026	EXCLDEQS		ExclDEQs	•	•	•	•	•	•	Number of Exclusive Dequeues
DBCTL	A	027	DEDBCALL		DEDBcall	•	•	•	•	•	•	Number of DEDB calls
DBCTL	A	028	DEDBRDOP		DEDBRdOp	•	•	•	•	•	•	Number of DEDB read operations
DBCTL	A	029	OVFLBFRU		OvflBfrU	•	•	•	•	•	•	Number of Overflow Buffers used
DBCTL	A	030	UOWCONTS		UOWConts	•	•	•	•	•	•	Number of UOW Contentions
DBCTL	A	031	DEDBBFRW		DEDBBfrW	•	•	•	•	•	•	Number of waits for DEDB buffers
DBCTL	S	032	THREDCPU		ThredCPU	•	•	•	•	•	•	Thread TCB CPU time
DBCTL	T	033	SCHEDSTA		SchedSta	•	•	•	•	•	•	IMS Schedule start time
DBCTL	T	034	SCHEDEND		SchedEnd	•	•	•	•	•	•	IMS Schedule end time
DBCTL	A	035	DBGETS		DBget	•	•	•	•	•	•	Number of Database Get calls issued
DBCTL	A	036	DBUPDATE		DBupdate	•	•	•	•	•	•	Number of Database Update calls issued
DBCTL	A	037	DBWAITS		DBwait	•	•	•	•	•	•	Number of Database waits
DFHAPPL	C	001	APPLNAME	APPLPROG	Program	•	•	•	•	•	•	Application naming Program
DFHAPPL	C	001	APPLNAME	APPLTRAN	Tran	•	•	•	•	•	•	Application naming Tran ID
DFHCBTS	C	200	PRCSNAME		BTS Proc	•	•	•	•	•	•	BTS Process name
DFHCBTS	C	201	PRCSTYPE		BTS PTyp	•	•	•	•	•	•	BTS Process type
DFHCBTS	C	202	PRCSID	N/A	BTS Root	•	•	•	•	•	•	BTS Root Activity identifier
DFHCBTS	C	203	ACTVTYID	N/A	BTSActID	•	•	•	•	•	•	BTS Activity identifier
DFHCBTS	C	204	ACTVTYNM		BTSActNm	•	•	•	•	•	•	BTS Activity name
DFHCBTS	A	205	BARSYNCT		BTS Sync	•	•	•	•	•	•	BTS synchronous Process/Activity count
DFHCBTS	A	206	BARASYCT		BTS Asyn	•	•	•	•	•	•	BTS asynchronous Process/Activity count
DFHCBTS	A	207	BALKPACT		BTS Link	•	•	•	•	•	•	BTS Link Process/Activity count
DFHCBTS	A	208	BADPROCT		BTS DefP	•	•	•	•	•	•	BTS Define Process requests
DFHCBTS	A	209	BADACTCT		BTS DefA	•	•	•	•	•	•	BTS Define Activity requests
DFHCBTS	A	210	BARSPACT		BTSReset	•	•	•	•	•	•	BTS Reset Process/Activity requests
DFHCBTS	A	211	BASUPACT		BTS Susp	•	•	•	•	•	•	BTS Suspend Process/Activity requests
DFHCBTS	A	212	BARMPACT		BTSResum	•	•	•	•	•	•	BTS Resume Process/Activity requests
DFHCBTS	A	213	BADCPACT		BTSCancl	•	•	•	•	•	•	BTS Cancel Process/Activity requests
DFHCBTS	A	214	BAACQPCT		BTSAcqui	•	•	•	•	•	•	BTS Acquire Process/Activity requests
DFHCBTS	A	215	BATOTPCT		BSTTotal	•	•	•	•	•	•	BTS Total Process/Activity requests
DFHCBTS	A	216	BAPRDCCT		BTSPDCRq	•	•	•	•	•	•	BTS Process Data Containers requests
DFHCBTS	A	217	BAACDCCT		BTSADCRq	•	•	•	•	•	•	BTS Activity Data Containers requests
DFHCBTS	A	218	BATOTCCT		BTSIDCRq	•	•	•	•	•	•	BTS Process/Activity Data Container requests
DFHCBTS	A	219	BARATECT		BTSRtvEv	•	•	•	•	•	•	BTS Retrieve-Reattach Event requests
DFHCBTS	A	220	BADFIECT		BTSDefEv	•	•	•	•	•	•	BTS Define-Input Event requests

Table 17. Cross-reference: CMF field ID × CICS version (continued)

CMF field						CICS version						Description
Group	Type	ID	Name	CICS PA field name	Column heading	6	6	6	6	6	6	
						4	5	6	7	8	9	
						0	0	0	0	0	0	
DFHCBTS	A	221	BATIAECT		BSTimEv	•	•	•	•	•	•	BTS TIMER Event requests
DFHCBTS	A	222	BATOTECT		BSTotEv	•	•	•	•	•	•	BTS Event-related requests
DFHCHNL	A	321	PGTOTCCT		PGTOTCCT	•	•	•	•	•	•	Total number of CHANNEL CONTAINER requests
DFHCHNL	A	322	PGBRWCCT		PGBRWCCT	•	•	•	•	•	•	BROWSE CHANNEL CONTAINER requests
DFHCHNL	A	323	PGGETCCT		PGGETCCT	•	•	•	•	•	•	GET CHANNEL CONTAINER requests
DFHCHNL	A	324	PGPUTCCT		PGPUTCCT	•	•	•	•	•	•	PUT CHANNEL CONTAINER requests
DFHCHNL	A	325	PGMOVCCT		PGMOVCCT	•	•	•	•	•	•	MOVE CHANNEL CONTAINER requests
DFHCHNL	A	326	PGGETCDL		PGGETCDL	•	•	•	•	•	•	GET CHANNEL CONTAINER data length
DFHCHNL	A	327	PGPUTCDL		PGPUTCDL	•	•	•	•	•	•	PUT CHANNEL CONTAINER data length
DFHCHNL	A	328	PGCRECCT		PGCRECCT	•	•	•	•	•	•	Number of Containers created
DFHCHNL	A	329	PGCSTHWM		PGCSTHWM	–	•	•	•	•	•	Maximum Container Storage allocated to task
DFHCICS	T	005	START		Start	•	•	•	•	•	•	Task start time
DFHCICS	T	006	STOP		Stop	•	•	•	•	•	•	Task stop time
DFHCICS	A	025	CFCAPICT		CFClsAPI	•	•	•	•	•	•	OO Foundation Class requests
DFHCICS	C	089	USERID		Userid	•	•	•	•	•	•	User ID
DFHCICS	S	103	EXWTTIME	EXWAIT	Exc Wait	•	•	•	•	•	•	Exception Conditions wait time
DFHCICS	C	112	RTYPE		RTyp	•	•	•	•	•	•	Performance record type
DFHCICS	C	130	RSYSID		RSID	•	•	•	•	•	•	Remote System ID
DFHCICS	A	131	PERRECNT	RECCOUNT	RecCount	•	•	•	•	•	•	Task Performance record count
DFHCICS	C	167	SRVCLASS		SrvClass	•	•	•	•	•	•	WLM Service Class
DFHCICS	C	168	RPTCLASS		RptClass	•	•	•	•	•	•	WLM Report Class
DFHCICS	C	351	OADID		OADID	–	–	–	•	•	•	Originating Adapter Identifier
DFHCICS	C	352	OADATA1		OADData1	–	–	–	•	•	•	Originating Adapter data 1
DFHCICS	C	353	OADATA2		OADData2	–	–	–	•	•	•	Originating Adapter data 2
DFHCICS	C	354	OADATA3		OADData3	–	–	–	•	•	•	Originating Adapter data 3
DFHCICS	C	359	ONETWKID		ONETWKID	–	•	•	•	•	•	Originating Network ID
DFHCICS	C	360	OAPPLID		OAPPLID	–	•	•	•	•	•	Originating CICS APPLID
DFHCICS	T	361	OSTART		OStart	–	•	•	•	•	•	Originating Task start time
DFHCICS	P	362	OTRANNUM	OTASKNO	OTaskNo	–	•	•	•	•	•	Originating Transaction number
DFHCICS	C	363	OTRAN		OTran	–	•	•	•	•	•	Originating Transaction identifier
DFHCICS	C	364	OUSERID		OUserid	–	•	•	•	•	•	Originating User ID
DFHCICS	C	365	OUSERCOR		OUserCor	–	•	•	•	•	•	Originating User Correlator
DFHCICS	C	366	OTCPSVCE	OTCPSRVC	OTCPIPSr	–	•	•	•	•	•	Originating TCP/IP Service Name
DFHCICS	A	367	OPORTNUM	OPORT	OPORT	–	•	•	•	•	•	Originating TCP/IP Port Number
DFHCICS	C	368	OCLIPADR	OCLINTIP	OClintIP	–	•	–	–	–	–	Originating Client or Telnet IP address
DFHCICS	A	369	OCLIPORT		OCLIPORT	–	•	•	•	•	•	Originating Client IP Port Number
DFHCICS	A	370	OTRANFLG		OTranFlg	–	•	•	•	•	•	Originating Transaction flags
DFHCICS	C	370	OTRANFLG	OFCTYTY	OFctyTyp	–	•	•	•	•	•	Originating Transaction Facility Type
DFHCICS	C	370	OTRANFLG	OORIGIN	OOrigin	–	•	•	•	•	•	Originating Transaction Origin type
DFHCICS	C	370	OTRANFLG	OTRANTYP	OTranTyp	–	•	•	•	•	•	Originating Transaction type
DFHCICS	C	371	OFCTYNME	OFCTY	OFcty	–	•	•	•	•	•	Originating Transaction Facility name
DFHCICS	C	372	OCLIPADR	OCLI6ADR	OCLi6Adr	–	–	•	•	•	•	Originating Client or Telnet IP address
DFHCICS	C	373	PHNTWKID		PHNTWKID	–	–	–	•	•	•	Previous Hop Data Network ID
DFHCICS	C	374	PHAPPLID		PHAPPLID	–	–	–	•	•	•	Previous Hop Data APPLID
DFHCICS	T	375	PHSTART		PHStart	–	–	–	•	•	•	Previous Hop Data Task Start
DFHCICS	P	376	PHTRANNO	PHTASKNO	PHTaskNo	–	–	–	•	•	•	Previous Hop Data Transaction Number
DFHCICS	C	377	PHTRAN		PHTran	–	–	–	•	•	•	Previous Hop Data Transaction ID
DFHCICS	A	378	PHCOUNT		PHCount	–	–	–	•	•	•	Previous Hop Data Count
DFHCICS	A	402	EICTOTCT		EICTotCt	–	–	•	•	•	•	EXEC CICS requests
DFHCICS	A	405	TIASKTCT		ASKTimCt	–	–	•	•	•	•	ASKTIME requests
DFHCICS	A	406	TIOTCT		TIOTcT	–	–	•	•	•	•	ASKTIME
DFHCICS	A	408	BFDGSTCT		BFDGSTcT	–	–	•	•	•	•	Built-in function BIF DIGEST requests
DFHCICS	A	409	BFTOTCT		BFTotCt	–	–	•	•	•	•	Total Built-in (BIF) function requests
DFHCICS	A	415	ECSIGECT		ECSIGECT	–	–	•	•	•	•	SIGNAL EVENT requests
DFHCICS	A	416	ECEFOPCT		ECEFOPCT	–	–	•	•	•	•	Event Filter operations



Table 17. Cross-reference: CMF field ID × CICS version (continued)

CMF field						CICS version						Description
Group	Type	ID	Name	CICS PA field name	Column heading	6	6	6	6	6	6	
						4	5	6	7	8	9	
						0	0	0	0	0	0	
DFHCICS	A	417	ECEVNTCT		ECEVNTCT	–	–	•	•	•	•	Events captured
DFHCICS	A	418	ECSEVCCT		ECSEVCCT	–	–	–	•	•	•	Synchronous Emission Events captured
DFHCICS	A	449	MPPRTXCD		PolRuIXc	–	–	–	–	•	•	Number of policy rule thresholds exceeded
DFHDATA	A	179	IMSREQCT		IMS Reqs	•	•	•	•	•	•	IMS (DBCTL) requests
DFHDATA	A	180	DB2REQCT		DB2 Reqs	•	•	•	•	•	•	DB2 requests
DFHDATA	S	186	IMSWAIT		IMS Wait	•	•	•	•	•	•	IMS (DBCTL) wait time
DFHDATA	S	187	DB2RDYQW		DB2ThdWt	•	•	•	•	•	•	DB2 Thread wait time
DFHDATA	S	188	DB2CONWT		DB2ConWt	•	•	•	•	•	•	DB2 Connection wait time
DFHDATA	S	189	DB2WAIT		DB2SQLWt	•	•	•	•	–	–	DB2 SQL/IFI wait time
DFHDATA	A	395	WMQREQCT		WMQ Reqs	–	•	•	•	•	•	Number of WebSphere MQ requests
DFHDATA	S	396	WMQGETWT		WMQGetWt	–	•	•	•	•	•	WebSphere MQ GETWAIT wait time
DFHDATA	S	397	WMQASRBT		WMQSRBtm	–	–	•	•	•	•	WebSphere MQ API SRB CPU time
DFHDEST	A	041	TDGETCT	TDGET	TDGET	•	•	•	•	•	•	Transient data GET requests
DFHDEST	A	042	TDPUTCT	TDPUT	TDPUT	•	•	•	•	•	•	Transient data PUT requests
DFHDEST	A	043	TDPURCT	TDPURGE	TDPURGE	•	•	•	•	•	•	Transient data PURGE requests
DFHDEST	A	091	TDTOTCT	TDTOTAL	TD Total	•	•	•	•	•	•	Transient data Total requests
DFHDEST	S	101	TDIOWTT	TDWAIT	TD Wait	•	•	•	•	•	•	VSAM transient data I/O wait time
DFHDEST	S	403	TDILWTT		TDILWait	–	–	–	–	•	•	Intrapartition transient data lock wait time
DFHDEST	S	404	TDELWTT		TDELWait	–	–	–	–	•	•	Extrapartition transient data lock wait time
DFHDOCH	A	223	DHDELCT	DHDELETE	DHDELETE	–	•	•	•	•	•	Document Handler DELETE requests
DFHDOCH	A	226	DHCRECT	DHCREATE	DHCREATE	•	•	•	•	•	•	Document Handler CREATE requests
DFHDOCH	A	227	DHINSCT	DHINSERT	DHINSERT	•	•	•	•	•	•	Document Handler INSERT requests
DFHDOCH	A	228	DHSETCT	DHSET	DHSET	•	•	•	•	•	•	Document Handler SET requests
DFHDOCH	A	229	DHRETCT	DHRETRVE	DHRETRVE	•	•	•	•	•	•	Document Handler RETRIEVE requests
DFHDOCH	A	230	DHTOTCT	DHTOTAL	DH Total	•	•	•	•	•	•	Document Handler Total requests
DFHDOCH	A	240	DHTOTDCL		DHDdocLen	•	•	•	•	•	•	Total length of all documents created
DFHEJBS	C	311	CBSRVNRM		Corb	•	•	•	•	–	–	CorbaServer name
DFHEJBS	A	312	EJBSACCT	EJBACTIV	EJBActiv	•	•	•	•	–	–	Number of Bean State Activation requests
DFHEJBS	A	313	EJBSPACT	EJBPASIV	EJBPasiv	•	•	•	•	–	–	Number of Bean State Passivation requests
DFHEJBS	A	314	EJBCRECT	EJBCREAT	EJBCreat	•	•	•	•	–	–	Number of Bean Creation requests
DFHEJBS	A	315	EJBREMCT	EJBREMOV	EJBRemov	•	•	•	•	–	–	Number of Bean Removal requests
DFHEJBS	A	316	EJBMTHCT	EJBMETHD	EJBMethd	•	•	•	•	–	–	Number of EJB Method Calls
DFHEJBS	A	317	EJBTOTCT	EJBTOTAL	EJBTotal	•	•	•	•	–	–	Total Number of EJB requests
DFHFPEI	A	150	SZALLOCT	SZALLOC	SZALLOC	•	•	•	•	•	•	Conversations allocated count
DFHFPEI	A	151	SZRCVCT	SZRCV	SZRCV	•	•	•	•	•	•	FEPI RECEIVE requests
DFHFPEI	A	152	SZSENDCT	SZSEND	SZSEND	•	•	•	•	•	•	FEPI SEND requests
DFHFPEI	A	153	SZSTRCT	SZSTART	SZSTART	•	•	•	•	•	•	FEPI START requests
DFHFPEI	A	154	SZCHROUT		SZChrOut	•	•	•	•	•	•	FEPI characters sent count
DFHFPEI	A	155	SZCHRIN		SZChrIn	•	•	•	•	•	•	FEPI characters received count
DFHFPEI	S	156	SZWAIT		SZ Wait	•	•	•	•	•	•	FEPI services wait time
DFHFPEI	A	157	SZALLCTO		SZAllocTO	•	•	•	•	•	•	Allocate conversation time-out count
DFHFPEI	A	158	SZRCVTO		SZRecvTO	•	•	•	•	•	•	Receive Data time-out count
DFHFPEI	A	159	SZTOTCT	SZTOTAL	SZ Total	•	•	•	•	•	•	FEPI API and SPI requests
DFHFILE	A	036	FCGETCT	FCGET	FCGET	•	•	•	•	•	•	File GET requests
DFHFILE	A	037	FCPUTCT	FCPUT	FCPUT	•	•	•	•	•	•	File PUT requests
DFHFILE	A	038	FCBRWCT	FCBROWSE	FCBROWSE	•	•	•	•	•	•	File Browse requests
DFHFILE	A	039	FCADDCT	FCADD	FCADD	•	•	•	•	•	•	File ADD requests
DFHFILE	A	040	FCDELCT	FCDELETE	FCDELETE	•	•	•	•	•	•	File DELETE requests
DFHFILE	S	063	FCIOWTT	FCWAIT	FC Wait	•	•	•	•	•	•	File I/O wait time
DFHFILE	A	070	FCAMCT		FCAMRq	•	•	•	•	•	•	File access-method requests
DFHFILE	A	093	FCTOTCT	FCTOTAL	FC Total	•	•	•	•	•	•	File Control requests
DFHFILE	S	174	RLSWAIT		RLS Wait	•	•	•	•	•	•	RLS File I/O wait time
DFHFILE	S	175	RLSCPUT	RLSCPU	RLS CPU	•	•	•	•	•	•	RLS File Request CPU (SRB) time
DFHFILE	S	176	CFDTPWAIT		CFDTPWait	•	•	•	•	•	•	CF Data Table access requests wait time
DFHFILE	S	426	FCXCWTT		FCVXWait	–	–	–	–	•	•	VSAM exclusive control wait time
DFHFILE	S	427	FCVSWTT		FCVSWait	–	–	–	–	•	•	VSAM string wait time

Table 17. Cross-reference: CMF field ID × CICS version (continued)

CMF field						CICS version						Description
Group	Type	ID	Name	CICS PA field name	Column heading	6	6	6	6	6	6	
						4	5	6	7	8	9	
						0	0	0	0	0	0	
DFHJOUR	S	010	JCIOWTT	JCWAIT	JC Wait	•	•	•	•	•	•	Journal I/O wait time
DFHJOUR	A	058	JNLWRTCT	JNLPUT	JnlWrite	•	•	•	•	•	•	Journal write requests
DFHJOUR	A	172	LOGWRTCT	LOGWRITE	LogWrite	•	•	•	•	•	•	Log Stream write requests
DFHMAPP	A	050	BMSMAPCT	BMSMAP	BMSMAP	•	•	•	•	•	•	BMS MAP requests
DFHMAPP	A	051	BMSINCT	BMSIN	BMSIN	•	•	•	•	•	•	BMS IN requests
DFHMAPP	A	052	BMSOUTCT	BMSOUT	BMSOUT	•	•	•	•	•	•	BMS OUT requests
DFHMAPP	A	090	BMSTOTCT	BMSTOTAL	BMSTotal	•	•	•	•	•	•	BMS Total requests
DFHPROG	A	055	PCLINKCT	PCLINK	PCLINK	•	•	•	•	•	•	Program LINK requests
DFHPROG	A	056	PCXCTLCT	PCXCTL	PCXCTL	•	•	•	•	•	•	Program XCTL requests
DFHPROG	A	057	PCLOADCT	PCLOAD	PCLOAD	•	•	•	•	•	•	Program LOAD requests
DFHPROG	C	071	PGMNAME	PROGRAM	Program	•	•	•	•	•	•	Program name
DFHPROG	A	072	PCLURMCT	PCLURM	PCLNKURM	•	•	•	•	•	•	Program LINK URM requests
DFHPROG	A	073	PCDPLCT	PCDPL	PCDPLINK	•	•	•	•	•	•	Distributed Program Link (DPL) requests
DFHPROG	C	113	ABCODEO		ABor	•	•	•	•	•	•	Original ABEND Code
DFHPROG	C	114	ABCODEC		ABcu	•	•	•	•	•	•	Current ABEND code
DFHPROG	S	115	PCLOADTM		PCLOADWt	•	•	•	•	•	•	Program Library wait time
DFHPROG	A	286	PCDLCSDL		PCDLCSDL	•	•	•	•	•	•	Container data length for DPL reqs with CHANNEL
DFHPROG	A	287	PCDLCRDL		PCDLCRDL	•	•	•	•	•	•	Container data length for DPL RETURN w/ CHANNEL
DFHPROG	A	306	PCLNKCCT		PCLNKCCT	•	•	•	•	•	•	LINK requests with CHANNEL option
DFHPROG	A	307	PCXCLCCT		PCXCLCCT	•	•	•	•	•	•	XCTL requests with CHANNEL option
DFHPROG	A	308	PCDPLCCT		PCDPLCCT	•	•	•	•	•	•	DPL requests with CHANNEL option
DFHPROG	A	309	PCRTNCCT		PCRTNCCT	•	•	•	•	•	•	Program RETURN requests with CHANNEL option
DFHPROG	A	310	PCRTNCDL		PCRTNCDL	•	•	•	•	•	•	Container data length for RETURN with CHANNEL
DFHRMI	S	001	RMITOTAL		RMITotal	•	•	•	•	•	•	RMI total elapsed time
DFHRMI	S	002	RMIOOTHER		RMI Othr	•	•	•	•	•	•	RMI other elapsed time
DFHRMI	S	003	RMIDB2		RMI DB2	•	•	•	•	•	•	RMI elapsed time for DB2 requests
DFHRMI	S	004	RMIDBCTL		RMIDBCTL	•	•	•	•	•	•	RMI elapsed time for DBCTL requests
DFHRMI	S	005	RMIEXDLI		RMIEXDLI	•	•	•	•	•	•	RMI elapsed time for EXEC DLI requests
DFHRMI	S	006	RMIMQM		RMI MQ	•	•	•	•	•	•	RMI elapsed time for WebSphere MQ requests
DFHRMI	S	007	RMICPSM		RMI CPSM	•	•	•	•	•	•	RMI elapsed time for CICSplex SM requests
DFHRMI	S	008	RMITCPIP		RMITCPIP	•	•	•	•	•	•	RMI elapsed time for TCP/IP socket requests
DFHSOCK	S	241	SOIOWTT	SOWAIT	SockWait	•	•	•	•	•	•	Inbound Socket I/O wait time
DFHSOCK	A	242	SOBYENCT		SockEcry	•	•	•	•	•	•	Secure Socket bytes encrypted count
DFHSOCK	A	243	SOBYDECT		SockDcry	•	•	•	•	•	•	Secure Socket bytes decrypted count
DFHSOCK	C	244	CLIPADDR	CLIENTIP	ClientIP	•	•	–	–	–	–	Client or Telnet IP address
DFHSOCK	C	245	TCPSRVCE		TCPIPSrv	•	•	•	•	•	•	TCP/IP Service Name
DFHSOCK	A	246	PORTNUM	PORT	PORT	•	•	•	•	•	•	TCP/IP Port Number
DFHSOCK	A	288	ISALLOCT	ISALLOC	ISALLOC	–	•	•	•	•	•	Allocate Session requests for sessions on IP
DFHSOCK	A	289	SOEXTRCT		SOEXTRAC	•	•	•	•	•	•	EXTRACT TCP/IP and CERTIFICATE requests
DFHSOCK	A	290	SOCNPSTCT		SOCNPSTReq	•	•	•	•	•	•	Create Non-Persistent Outbound Socket reqs
DFHSOCK	A	291	SOCPSCT		SOCPSReq	•	•	•	•	•	•	Create Persistent Outbound Socket requests
DFHSOCK	A	292	SONPSHWM		SONPSHWM	•	•	•	•	•	•	Non-Persistent Outbound Socket HWM
DFHSOCK	A	293	SOPSHWM		SOPSHWM	•	•	•	•	•	•	Persistent Outbound Socket HWM
DFHSOCK	A	294	SORCVCT	SORCV	SO Recv	•	•	•	•	•	•	Outbound Sockets RECEIVE requests
DFHSOCK	A	295	SOCHRIN		SOChrIn	•	•	•	•	•	•	Outbound Sockets characters received count
DFHSOCK	A	296	SOSENDCT	SOSEND	SO SEND	•	•	•	•	•	•	Outbound Sockets SEND requests
DFHSOCK	A	297	SOCHROUT		SOChrOut	•	•	•	•	•	•	Outbound Sockets characters sent count
DFHSOCK	A	298	SOTOTCT	SOTOTAL	SOTotal	•	•	•	•	•	•	Socket Total requests
DFHSOCK	S	299	SOOIOWTT	OSOWAIT	OSO Wait	•	•	•	•	•	•	Outbound Socket I/O Wait Time
DFHSOCK	S	300	ISOIOWTT	ISWAIT	IS Wait	–	•	•	•	•	•	IPCONN link wait time
DFHSOCK	A	301	SOMSGIN1		SOMsgIn1	•	•	•	•	•	•	Inbound Sockets RECEIVE requests
DFHSOCK	A	302	SOCHRIN1		SOChrIn1	•	•	•	•	•	•	Inbound Sockets characters received count
DFHSOCK	A	303	SOMSGOU1		SOMsgOu1	•	•	•	•	•	•	Inbound Sockets SEND requests

Table 17. Cross-reference: CMF field ID × CICS version (continued)

CMF field						CICS version						Description
Group	Type	ID	Name	CICS PA field name	Column heading	6	6	6	6	6	6	
						4	5	6	7	8	9	
						0	0	0	0	0	0	
DFH SOCK	A	304	SOCHROU1		SOChrOu1	•	•	•	•	•	•	Inbound Sockets characters sent count
DFH SOCK	C	305	ISPCNNM	ISIPICNM	ISIPICNM	–	•	•	•	•	•	Name of IPCONN definition that attached the task
DFH SOCK	C	318	CLIPADDR	CLIP6ADR	Clip6Adr	–	–	•	•	•	•	Client or Telnet IP address
DFH SOCK	S	319	ISALWTT		ISAIWait	–	–	–	–	•	•	IPIC allocate session wait time
DFH SOCK	C	320	SOCIPHER		SOCipher	–	–	–	–	•	•	Inbound SSL connection Cipher suite code
DFH SOCK	A	330	CLIPPORT		CLIPPORT	–	•	•	•	•	•	Client IP Port Number
DFH STOR	A	033	SCUSRHWM	SC24UHW	SC24UHW	•	•	•	•	•	•	UDSA HWM below 16MB
DFH STOR	A	054	SCUGETCT	SC24UGET	SC24UGet	•	•	•	•	•	•	UDSA GETMAINS below 16MB
DFH STOR	A	087	PCSTGHWM		PCStgHWM	•	•	•	•	•	•	Program Storage HWM above and below 16MB
DFH STOR	A	095	SCUSRSTG	SC24UOCC	SC24UOcc	•	•	•	•	•	•	UDSA Storage Occupancy below 16MB
DFH STOR	A	105	SCUGETCT	SC31UGET	SC31UGet	•	•	•	•	•	•	EUDSA GETMAINS above 16MB
DFH STOR	A	106	SCUSRHWM	SC31UHW	SC31UHW	•	•	•	•	•	•	EUDSA HWM above 16MB
DFH STOR	A	107	SCUCRSTG	SC31UOCC	SC31UOcc	•	•	•	•	•	•	EUDSA Storage Occupancy above 16MB
DFH STOR	A	108	PC24BHWM		PC24bHWM	•	•	•	•	•	•	Program Storage HWM below 16MB
DFH STOR	A	116	SC24CHWM		SC24CHWM	•	•	•	•	•	•	CDSA HWM below 16MB
DFH STOR	A	117	SCCGETCT	SC24CGET	SC24CGet	•	•	•	•	•	•	CDSA GETMAINS below 16MB
DFH STOR	A	118	SC24COCC		SC24COcc	•	•	•	•	•	•	CDSA Storage Occupancy below 16MB
DFH STOR	A	119	SC31CHWM		SC31CHWM	•	•	•	•	•	•	ECDSA HWM above 16MB
DFH STOR	A	120	SCCGETCT	SC31CGET	SC31CGet	•	•	•	•	•	•	ECDSA GETMAINS above 16MB
DFH STOR	A	121	SC31COCC		SC31COcc	•	•	•	•	•	•	ECDSA Storage Occupancy above 16MB
DFH STOR	A	122	PC31RHWM		PC31RHWM	•	•	•	•	•	•	Program Storage (ERDSA) HWM above 16MB
DFH STOR	A	139	PC31AHWM		PC31aHWM	•	•	•	•	•	•	Program Storage HWM above 16MB
DFH STOR	A	142	PC31CHWM		PC31CHWM	•	•	•	•	•	•	Program Storage (ECDSA) HWM above 16MB
DFH STOR	A	143	PC24CHWM		PC24CHWM	•	•	•	•	•	•	Program Storage (CDSA) HWM below 16MB
DFH STOR	A	144	SC24SGCT	SC24SGET	SC24SGet	•	•	•	•	•	•	CDSA/SDSA GETMAINS below 16MB
DFH STOR	A	145	SC24GSHR		SC24GShr	•	•	•	•	•	•	CDSA/SDSA storage GETMAINED below 16MB
DFH STOR	A	146	SC24FSHR		SC24FShr	•	•	•	•	•	•	CDSA/SDSA storage FREEMAINED below 16MB
DFH STOR	A	147	SC31SGCT	SC31SGET	SC31SGet	•	•	•	•	•	•	ECDSA/ESDSA GETMAINS above 16MB
DFH STOR	A	148	SC31GSHR		SC31GShr	•	•	•	•	•	•	ECDSA/ESDSA storage GETMAINED above 16MB
DFH STOR	A	149	SC31FSHR		SC31FShr	•	•	•	•	•	•	ECDSA/ESDSA storage FREEMAINED above 16MB
DFH STOR	A	160	PC24SHWM		PC24SHWM	•	•	•	•	•	•	Program Storage (SDSA) HWM below 16MB
DFH STOR	A	161	PC31SHWM		PC31SHWM	•	•	•	•	•	•	Program Storage (ESDSA) HWM above 16MB
DFH STOR	A	162	PC24RHWM		PC24RHWM	•	•	•	•	•	•	Program Storage (RDSA) HWM below 16MB
DFH STOR	A	441	SC64CGCT	SC64CGET	SC64CGet	–	–	–	–	•	•	GCDSA GETMAINS above the bar
DFH STOR	A	442	SC64CHWM		SC64CHWM	–	–	–	–	•	•	GCDSA HWM above the bar
DFH STOR	A	443	SC64UGCT	SC64UGET	SC64UGet	–	–	–	–	•	•	GUDSA GETMAINS above the bar
DFH STOR	A	444	SC64UHW		SC64UHW	–	–	–	–	•	•	GUDSA HWM above the bar
DFH STOR	A	445	SC64SGCT	SC64SGET	SC64SGet	–	–	–	–	•	•	GCDSA/GSDSA GETMAINS above the bar
DFH STOR	A	446	SC64GSHR		SC64GShr	–	–	–	–	•	•	GCDSA/GSDSA storage GETMAINED above the bar
DFH STOR	A	447	SC64FSHR		SC64FShr	–	–	–	–	•	•	GCDSA/GSDSA storage FREEMAINED above the bar
DFH SYNC	A	060	SPSYNCCT	SYNCPT	SYNCPT	•	•	•	•	•	•	SYNCPPOINT requests
DFH SYNC	S	173	SYNCTIME		SYNCPProc	•	•	•	•	•	•	SYNCPPOINT processing time
DFH SYNC	S	177	SRVSYWTT	CFDTSYNC	CFDTSync	•	•	•	•	•	•	CF Data Table syncpoint wait time
DFH SYNC	S	196	SYNCDLY		SYNC Dly	•	•	•	•	•	•	SYNCPPOINT parent request wait time
DFH SYNC	S	199	OTSINDWT		OTSIndWt	•	•	•	•	•	•	OTS Indoubt Wait time
DFH TASK	C	001	TRAN		Tran	•	•	•	•	•	•	Transaction identifier
DFH TASK	C	004	TTYTYPE	STYPER	SC	•	•	•	•	•	•	Transaction start type
DFH TASK	S	007	USRDISPT	DISPATCH	Dispatch	•	•	•	•	•	•	Dispatch time
DFH TASK	S	008	USRCPUT	CPU	User CPU	•	•	•	•	•	•	CPU time
DFH TASK	S	014	SUSPTIME	SUSPEND	Suspend	•	•	•	•	•	•	Suspend time

Table 17. Cross-reference: CMF field ID × CICS version (continued)

CMF field						CICS version						Description
Group	Type	ID	Name	CICS PA field name	Column heading	6	6	6	6	6	6	
						4	5	6	7	8	9	
						0	0	0	0	0	0	
DFHTASK	P	031	TRANNUM	TASKNO	TaskNo	•	•	•	•	•	•	Transaction identification number
DFHTASK	A	059	ICPUINCT	ICPUT	ICSTART	•	•	•	•	•	•	Interval Control START or INITIATE requests
DFHTASK	A	064	TASKFLAG	ERRFLAGS	Err Flag	•	•	•	•	•	•	Task error flags
DFHTASK	C	064	TASKFLAG	N/A	Err Flag	•	•	•	•	•	•	Task error flags
DFHTASK	A	065	ICSTACCT		ICSTACCT	•	•	•	•	•	•	Local IC START requests with CHANNEL option
DFHTASK	A	066	ICTOTCT	ICTOTAL	IC Total	•	•	•	•	•	•	Interval Control requests
DFHTASK	C	082	TRNGRPID		Group ID	•	•	•	•	•	•	Transaction Group ID
DFHTASK	C	097	NETUOWPX	NETNAME	NETName	•	•	•	•	•	•	Originating System VTAM network name
DFHTASK	C	098	NETUOWSX		NETUOWID	•	•	•	•	•	•	Network UOW ID
DFHTASK	S	102	DISPWTT	DISPWAIT	DispWait	•	•	•	•	•	•	Redispach wait time
DFHTASK	A	109	TRANPRI	TRANPRTY	Prty	•	•	•	•	•	•	Transaction priority
DFHTASK	S	123	GNQDELAY		GNQDelay	•	•	•	•	•	•	Global Enqueue wait time
DFHTASK	C	124	BRDGTRAN		Brdg	•	•	•	•	•	•	Bridge Listener Transaction ID
DFHTASK	S	125	DSPDELAY		Disp1Dly	•	•	•	•	•	•	First dispatch wait time
DFHTASK	S	126	TCLDELAY		TCLDelay	•	•	•	•	•	•	First dispatch TCLSNAME wait time
DFHTASK	S	127	MXTDELAY		MXTDelay	•	•	•	•	•	•	First dispatch MXT wait time
DFHTASK	S	128	LMDELAY	LOCKDLAY	LM Delay	•	•	•	•	•	•	Lock Manager (LM) wait time
DFHTASK	S	129	ENQDELAY		ENQDelay	•	•	•	•	•	•	Local Enqueue wait time
DFHTASK	C	132	RMUOWID		RMUOWID	•	•	•	•	•	•	Recovery UOW ID
DFHTASK	C	163	FCTYNAME	FCTY	Fcty	•	•	•	•	•	•	Transaction Facility name
DFHTASK	A	164	TRANFLAG		TranFlag	•	•	•	•	•	•	Transaction flags
DFHTASK	C	164	TRANFLAG	FCTYTYPE	FctyType	•	•	•	•	•	•	Transaction facility type
DFHTASK	C	164	TRANFLAG	ORIGIN	Origin	•	•	•	•	•	•	Transaction origin type
DFHTASK	C	164	TRANFLAG	TRANSTYPE	TranType	•	•	•	•	•	•	Transaction type
DFHTASK	C	164	TRANFLAG	TRANSTAT	TranStat	•	•	•	•	•	•	Transaction Status
DFHTASK	C	166	TCLSNAME	TCLASSNM	TCLSName	•	•	•	•	•	•	Transaction Class name
DFHTASK	S	170	RMITIME		RMI Elap	•	•	•	•	•	•	Resource Manager Interface (RMI) elapsed time
DFHTASK	S	171	RMISUSP		RMI Susp	•	•	•	•	•	•	Resource Manager Interface (RMI) suspend time
DFHTASK	S	181	WTEXWAIT	WAITEXT	Ext Wait	•	•	•	•	•	•	External ECB wait time
DFHTASK	S	182	WTCEWAIT	WAITCICS	CICSWait	•	•	•	•	•	•	CICS ECB wait time
DFHTASK	S	183	ICDELAY		IC Delay	•	•	•	•	•	•	Interval Control (IC) wait time
DFHTASK	S	184	GVUPWAIT	GIVEUPWT	GiveUpWt	•	•	•	•	•	•	Give up control wait time
DFHTASK	C	190	RRMSURID	N/A	RRMSURID	•	•	•	•	•	•	RRMS/MVS unit-of-recovery ID (URID)
DFHTASK	S	191	RRMSWAIT		RRMSWait	•	•	•	•	•	•	Resource Recovery Services indoubt wait time
DFHTASK	S	192	RQRWAIT		RQR Wait	•	•	•	•	•	•	Request Receiver Wait Time
DFHTASK	S	193	RQPWAIT		RQP Wait	•	•	•	•	•	•	Request Processor Wait Time
DFHTASK	C	194	OTSTID	OTSID	OTS ID	•	•	•	•	•	•	OTS Transaction ID
DFHTASK	S	195	RUNTRWTT		BTSRunWt	•	•	•	•	•	•	BTS run Process/Activity wait time
DFHTASK	S	247	DSCHMDLY		DSCHMDLY	•	•	•	•	•	•	Redispach wait time caused by change-TCB mode
DFHTASK	S	249	QRMODDLY		QRModDly	•	•	•	•	•	•	CICS QR TCB redispach wait time
DFHTASK	S	250	MXTOTDLY	MAXOTDLY	MaxOTDly	•	•	•	•	•	•	Maximum Open TCB delay time
DFHTASK	A	251	TCBATTCT		TCBAatch	•	•	•	•	•	•	TCBs attached count
DFHTASK	A	252	DSTCBHWM		DSTCBHWM	•	•	•	•	•	•	CICS Dispatcher TCB HWM
DFHTASK	S	253	JVMTIME		JVM Elap	•	•	•	•	•	•	JVM elapsed time
DFHTASK	S	254	JVMSUSP		JVM Susp	•	•	•	•	•	•	JVM suspend time
DFHTASK	S	255	QRDISPT		QR Disp	•	•	•	•	•	•	CICS QR TCB dispatch time
DFHTASK	S	256	QRCPUT	QRCPU	QR CPU	•	•	•	•	•	•	CICS QR TCB CPU time
DFHTASK	S	257	MSDISPT		MS Disp	•	•	•	•	•	•	CICS TCBs dispatch time
DFHTASK	S	258	MSCPUT	MSCPU	MS CPU	•	•	•	•	•	•	CICS TCBs CPU time
DFHTASK	S	259	L8CPUT	L8CPU	L8 CPU	•	•	•	•	•	•	CICS L8 TCB CPU time
DFHTASK	S	260	J8CPUT	J8CPU	J8 CPU	•	•	•	•	–	–	CICS J8 TCB CPU time
DFHTASK	S	261	S8CPUT	S8CPU	S8 CPU	•	•	•	•	•	•	CICS S8 TCB CPU time
DFHTASK	S	262	KY8DISPT		KY8 Disp	•	•	•	•	•	•	CICS Key 8 TCB dispatch time

Table 17. Cross-reference: CMF field ID × CICS version (continued)

CMF field						CICS version						Description
Group	Type	ID	Name	CICS PA field name	Column heading	6	6	6	6	6	6	
						4	5	6	7	8	9	
						0	0	0	0	0	0	
DFHTASK	S	263	KY8CPUT	KY8CPU	KY8 CPU	•	•	•	•	•	•	CICS Key 8 TCB CPU time
DFHTASK	S	264	KY9DISPT		KY9 Disp	•	•	•	•	•	•	User task Key 9 Mode Dispatch time
DFHTASK	S	265	KY9CPUT	KY9CPU	KY9 CPU	•	•	•	•	•	•	User task Key 9 Mode CPU time
DFHTASK	S	266	L9CPUT	L9CPU	L9 CPU	•	•	•	•	•	•	User task L9 CPU time
DFHTASK	S	267	J9CPUT	J9CPU	J9 CPU	•	•	•	•	–	–	User task J9 Mode CPU time
DFHTASK	S	268	DSTCBMWT		DSTCBMWT	•	•	•	•	•	•	Dispatcher TCB Mismatch wait time
DFHTASK	S	269	RODISPT		RO Disp	•	•	•	•	•	•	CICS RO TCB dispatch time
DFHTASK	S	270	ROCPUT	ROCPU	RO CPU	•	•	•	•	•	•	CICS RO TCB CPU time
DFHTASK	S	271	X8CPUT	X8CPU	X8 CPU	•	•	•	•	•	•	CICS X8 TCB CPU time
DFHTASK	S	272	X9CPUT	X9CPU	X9 CPU	•	•	•	•	•	•	User task X9 Mode CPU time
DFHTASK	S	273	JVMITIME		JVMITime	•	•	•	•	•	•	JVM initialize elapsed time
DFHTASK	S	275	JVMRTIME		JVMRTIME	•	•	•	•	•	•	JVM reset elapsed time
DFHTASK	S	277	MAXJTDLY		MaxJTDly	•	•	•	•	–	–	Maximum JVM TCB delay time
DFHTASK	S	278	MAXHTDLY		MaxHTDly	–	–	–	–	–	–	Maximum Hot-Pooling TCB delay time
DFHTASK	S	279	DSMMSWCT		DS Wait	•	•	•	•	•	•	DS storage constraint wait time
DFHTASK	S	281	MAXSTDLY		MAXSTDLY	•	•	•	•	•	•	Maximum SSL TCB delay time
DFHTASK	S	282	MAXXTDLY		MAXXTDLY	•	•	•	•	•	•	Maximum XPLink TCB delay time
DFHTASK	S	283	MAXTTDLY		MAXTTDLY	–	–	•	•	•	•	Maximum JVM server thread TCB delay time
DFHTASK	S	285	PTPWAIT		PTP Wait	•	•	•	•	•	•	3270 Bridge Partner wait time
DFHTASK	A	345	ICSTACDL		ICSTACDL	•	•	•	•	•	•	Container data len for Local IC START w/ CHANNEL
DFHTASK	A	346	ICSTRCCT		ICSTRCCT	•	•	•	•	•	•	Remote IC START requests with CHANNEL option
DFHTASK	A	347	ICSTRCDL		ICSTRCDL	•	•	•	•	•	•	Container data len for Remot IC START w/ CHANNEL
DFHTASK	S	348	ROMODDLY		ROModDly	–	–	–	–	•	•	Other CICS TCB Mode redispach wait time
DFHTASK	S	349	SOMODDLY		SOModDly	–	–	–	–	•	•	CICS SO TCB redispach wait time
DFHTASK	S	400	T8CPUT	T8CPU	T8 CPU	–	–	•	•	•	•	CICS T8 TCB CPU time
DFHTASK	S	401	JVMTHDWT		JVMThdWt	–	–	•	•	•	•	JVM server thread wait time
DFHTASK	C	430	CECMCHTP		CECMchTp	–	–	–	–	•	•	CEC machine type
DFHTASK	C	431	CECMDLID		CECMdId	–	–	–	–	•	•	CEC model number
DFHTASK	C	433	MAXTASKS		MaxTasks	–	–	–	–	•	•	Current MAXTASKS (MXT) value at task start
DFHTASK	C	434	CURTASKS		CurTasks	–	–	–	–	•	•	Current tasks value at task start
DFHTASK	S	436	CPUTONCP	CPUONCP	CPUonCP	–	–	–	–	•	•	CPU time on standard CP
DFHTASK	S	437	OFFLPCTT	CPUONCPE	CPUonCPE	–	–	–	–	•	•	Offload eligible CPU time on standard CP
DFHTASK	C	451	ACAPPLNM		ACApplNm	–	–	–	–	•	•	Application context application name
DFHTASK	C	452	ACPLATNM		ACPlatNm	–	–	–	–	•	•	Application context platform name
DFHTASK	C	453	ACMAJVER		ACMajVer	–	–	–	–	•	•	Application context application major version
DFHTASK	C	454	ACMINVER		ACMinVer	–	–	–	–	•	•	Application context application minor version
DFHTASK	C	455	ACMICVER		ACMicVer	–	–	–	–	•	•	Application context application micro version
DFHTASK	C	456	ACOPERNM		ACOperNm	–	–	–	–	•	•	Application context operation name
DFHTEMP	S	011	TSIOWTT	TSWAIT	TS Wait	•	•	•	•	•	•	VSAM TS I/O wait time
DFHTEMP	A	044	TSGETCT	TSGET	TSGET	•	•	•	•	•	•	Temporary Storage GET requests
DFHTEMP	A	046	TSPUTACT	TSPUTAX	TSPUTAux	•	•	•	•	•	•	Auxiliary TS PUT requests
DFHTEMP	A	047	TSPUTMCT		TSPUTMai	•	•	•	•	•	•	Main TS PUT requests
DFHTEMP	A	092	TSTOTCT	TSTOTAL	TS Total	•	•	•	•	•	•	TS Total requests
DFHTEMP	S	178	TSSHWAIT		TSSHWait	•	•	•	•	•	•	Asynchronous Shared TS wait time
DFHTERM	C	002	TERM		Term	•	•	•	•	•	•	Terminal ID
DFHTERM	S	009	TCIOWTT	TCWAIT	TC Wait	•	•	•	•	•	•	Terminal wait for input time
DFHTERM	A	034	TCMSGIN1	MSGIN1	MsgIn1	•	•	•	•	•	•	Messages received count
DFHTERM	A	035	TCMSGOU1	MSGOUT1	MsgOut1	•	•	•	•	•	•	Messages sent count
DFHTERM	A	067	TCMSGIN2	MSGIN2	MsgIn2	•	•	•	•	•	•	Messages received from LU6.1
DFHTERM	A	068	TCMSGOU2	MSGOUT2	MsgOut2	•	•	•	•	•	•	Messages sent to LU6.1
DFHTERM	A	069	TCCALLOCT	TCCALLOCT	TCCALLOCT	•	•	•	•	•	•	TCTTE ALLOCATE requests
DFHTERM	A	083	TCCHRN1	CHARIN1	CharIn1	•	•	•	•	•	•	Terminal characters received count
DFHTERM	A	084	TCCHROU1	CHAROUT1	CharOut1	•	•	•	•	•	•	Terminal characters sent count

Table 17. Cross-reference: CMF field ID × CICS version (continued)

CMF field						CICS version						Description
Group	Type	ID	Name	CICS PA field name	Column heading	6	6	6	6	6	6	
						4	5	6	7	8	9	
						0	0	0	0	0	0	
DFHTERM	A	085	TCCHRIN2	CHARIN2	CharIn2	•	•	•	•	•	•	LU6.1 characters received count
DFHTERM	A	086	TCCHROU2	CHAROUT2	CharOut2	•	•	•	•	•	•	LU6.1 characters sent count
DFHTERM	S	100	IRIOWTT	IRWAIT	IR Wait	•	•	•	•	•	•	MRO link wait time
DFHTERM	C	111	LUNAME		LUName	•	•	•	•	•	•	VTAM logical unit name
DFHTERM	S	133	LU61WTT	LU61WAIT	LU61Wait	•	•	•	•	•	•	LU6.1 wait time
DFHTERM	S	134	LU62WTT	LU62WAIT	LU62Wait	•	•	•	•	•	•	LU6.2 wait time
DFHTERM	A	135	TCM62IN2		TCM62In2	•	•	•	•	•	•	LU6.2 messages received count
DFHTERM	A	136	TCM62OU2		TCM62Ou2	•	•	•	•	•	•	LU6.2 messages sent count
DFHTERM	A	137	TCC62IN2		TCC62In2	•	•	•	•	•	•	LU6.2 characters received count
DFHTERM	A	138	TCC62OU2		TCC62Ou2	•	•	•	•	•	•	LU6.2 characters sent count
DFHTERM	A	165	TERMINFO		TermInfo	•	•	•	•	•	•	Terminal information
DFHTERM	A	165	TERMINFO	ACCMETH	Acc Meth	•	•	•	•	•	•	Terminal Access Method
DFHTERM	A	165	TERMINFO	TERMCODE	Dev Type	•	•	•	•	•	•	Terminal Device Type
DFHTERM	A	165	TERMINFO	NATURE	Nature	•	•	•	•	•	•	Transaction
DFHTERM	A	165	TERMINFO	SESSTYPE	SessType	•	•	•	•	•	•	Terminal session type
DFHTERM	C	169	TERMCNNM		ConnName	•	•	•	•	•	•	Terminal session Connection name
DFHTERM	C	197	NETID		NET ID	•	•	•	•	•	•	VTAM LUALIAS Network ID
DFHTERM	C	198	RLUNAME		RLUNAME	•	•	•	•	•	•	VTAM LUALIAS Logical Unit name
DFHTERM	S	343	TCALWTT		TCAlWait	–	–	–	–	•	•	MRO allocate session wait time
DFHWEBB	A	224	WBREADCT	WBREAD	WB READ	•	•	•	•	•	•	Web READ requests
DFHWEBB	A	225	WBWRITCT	WBWRITE	WB WRITE	•	•	•	•	•	•	Web WRITE requests
DFHWEBB	A	231	WBRCVCT	WBRCV	WBRCV	•	•	•	•	•	•	Web RECEIVE requests
DFHWEBB	A	232	WBCHRIN		WBChrIn	•	•	•	•	•	•	Web characters received count
DFHWEBB	A	233	WBSENDCT	WBSEND	WBSEND	•	•	•	•	•	•	Web SEND requests
DFHWEBB	A	234	WBCHROUT		WBChrOut	•	•	•	•	•	•	Web characters sent count
DFHWEBB	A	235	WBTOTWCT	WBTOTAL	WB Total	•	•	•	•	•	•	Web Total requests
DFHWEBB	A	236	WBREPCT		WBRepoRd	•	•	•	•	•	•	Web Temporary Storage Repository read requests
DFHWEBB	A	237	WBREPWCT		WBRepoWr	•	•	•	•	•	•	Web Temporary Storage Repository write requests
DFHWEBB	A	238	WBEXTRCT		WBEXTRAC	•	•	•	•	•	•	Web EXTRACT requests
DFHWEBB	A	239	WBBRWCT	WBBROWSE	WBBROWSE	•	•	•	•	•	•	Web Browse requests
DFHWEBB	A	331	WBREDOCT		WBREDOCT	•	•	•	•	•	•	CICS Web Support READ HTTPHEADER requests
DFHWEBB	A	332	WBWRTOCT		WBWRTOCT	•	•	•	•	•	•	CICS Web Support WRITE HTTPHEADER requests
DFHWEBB	A	333	WBRCVIN1		WBRCVIN1	•	•	•	•	•	•	CICS Web Support RECEIVE and CONVERSE requests
DFHWEBB	A	334	WBCHRIN1		WBCHRIN1	•	•	•	•	•	•	CICS Web Support RECEIVE and CONVERSE chars
DFHWEBB	A	335	WBSNDOU1		WBSNDOU1	•	•	•	•	•	•	CICS Web Support SEND and CONVERSE requests
DFHWEBB	A	336	WBCHROU1		WBCHROU1	•	•	•	•	•	•	CICS Web Support SEND and CONVERSE chars
DFHWEBB	A	337	WBPARSCT		WBPARSCT	•	•	•	•	•	•	CICS Web Support PARSE URL requests
DFHWEBB	A	338	WBBRWCT		WBBRWCT	•	•	•	•	•	•	CICS Web Support BROWSE HTTPHEADER requests
DFHWEBB	A	340	WBIWBSCT		WBIWBSCT	•	•	•	•	•	•	INVOKE SERVICE and INVOKE WEBSERVICE requests
DFHWEBB	A	341	WBREPRDL		WBREPRDL	•	•	•	•	•	•	Repository Read data length
DFHWEBB	A	342	WBREPWDL		WBREPWDL	•	•	•	•	•	•	Repository Write data length
DFHWEBB	C	380	WBURIMNM		URI Map	–	–	•	•	•	•	URIMAP resource definition name
DFHWEBB	C	381	WBPIPLNM		Pipeline	–	–	•	•	•	•	PIPELINE resource definition name
DFHWEBB	C	382	WBATMSNM		ATOMSrvc	–	–	•	•	•	•	ATOMSERVICE resource definition name
DFHWEBB	C	383	WBSVCENM		WebSrvc	–	–	•	•	•	•	WEBSERVICE resource definition name
DFHWEBB	C	384	WBSVOPNM		WebSrvOp	–	–	•	•	•	•	WEBSERVICE operation name
DFHWEBB	C	385	WBPROGNM		Web Prog	–	–	•	•	•	•	Program name in URIMAP resource definition
DFHWEBB	A	386	WBSFCRCT		SOAPFtCr	–	–	•	•	•	•	SOAPFAULT CREATE requests



Table 17. Cross-reference: CMF field ID × CICS version (continued)

CMF field						CICS version						Description
Group	Type	ID	Name	CICS PA field name	Column heading	6	6	6	6	6	6	
						4	5	6	7	8	9	
						0	0	0	0	0	0	
DFHWEBB	A	387	WBSFTOCT		SOAPFalt	–	–	•	•	•	•	SOAPFAULT ADD
DFHWEBB	A	388	WBISSFCT		ISSOAPFt	–	–	•	•	•	•	INVOKE SERVICE request SOAP faults received
DFHWEBB	A	390	WBSREQBL		SOAPRqBL	–	–	•	•	•	•	SOAP request SOAP body length
DFHWEBB	A	392	WBSRSPBL		SOAPRsBL	–	–	•	•	•	•	SOAP response SOAP body length
DFHWEBB	S	411	MLXSSTCM		XMLSSCPU	–	–	•	•	–	–	z/OS XML System Services CPU time
DFHWEBB	A	412	MLXSSTDl		XMLDocLn	–	–	•	•	•	•	Document length parsed - z/OS System Services
DFHWEBB	A	413	MLXMLTCT		XMLTrans	–	–	•	•	•	•	Application data TRANSFORM requests
DFHWEBB	A	420	WSACBLCT		WSACBld	–	–	•	•	•	•	WSACONTEXT BUILD requests
DFHWEBB	A	421	WSACGTCT		WSACGet	–	–	•	•	•	•	WSACONTEXT GET requests
DFHWEBB	A	422	WSAEPCCCT		WSAEPCre	–	–	•	•	•	•	WSAEPR CREATE requests
DFHWEBB	A	423	WSATOTCT		WSAddr	–	–	•	•	•	•	Total Web Services Addressing requests
OMCICS	C	001	DB2WARN		DB2WARN	•	•	•	•	•	•	OMEGAMON DB2 Limit Warning
OMCICS	C	002	DLIWARN		DLIWARN	•	•	•	•	•	•	OMEGAMON DLI Limit Warning
OMCICS	C	003	VSAMWARN		VSAMWARN	•	•	•	•	•	•	OMEGAMON VSAM Limit warning
OMCICS	C	004	MQWARN		MQWARN	•	•	•	•	•	•	OMEGAMON MQ Limit Warning
OMCICS	C	005	ADABWARN		ADABWARN	•	•	•	•	•	•	OMEGAMON Adabas Limit Warning
OMCICS	C	006	IDMSWARN		IDMSWARN	•	•	•	•	•	•	OMEGAMON CA-IDMS Limit Warning
OMCICS	C	007	SUPRWARN		SUPRWARN	•	•	•	•	•	•	OMEGAMON Supra Limit Warning
OMCICS	C	008	DCOMWARN		DCOMWARN	•	•	•	•	•	•	OMEGAMON CA-Datcom Limit Warning
OMCICS	C	009	CPUWARN		CPUWARN	•	•	•	•	•	•	OMEGAMON CPU Limit Warning
OMCICS	C	010	ELAPWARN		ELAPWARN	•	•	•	•	•	•	OMEGAMON Elapsed Time Limit Warning
OMCICS	C	011	DSAWARN		DSAWARN	•	•	•	•	•	•	OMEGAMON DSA Limit Warning
OMCICS	C	012	EDSAWARN		EDSAWARN	•	•	•	•	•	•	OMEGAMON EDSA Limit Warning
OMCICS	C	013	CALLWARN		CALLWARN	•	•	•	•	•	•	OMEGAMON EXEC Calls Limit Warning
OMCICS	C	014	UE1WARN		UE1WARN	•	•	•	•	•	•	OMEGAMON User Event Limit Warning
OMCICS	C	015	OMEGWORK		OMEGWORK	•	•	•	•	•	•	OMEGAMON User work area
OMCICS	S	016	IDMSREQ		IDMSREQ	•	•	•	•	•	•	OMEGAMON monitored CA-IDMS requests
OMCICS	S	017	ADABREQ		ADABREQ	•	•	•	•	•	•	OMEGAMON monitored Adabas requests
OMCICS	S	018	SUPRREQ		SUPRREQ	•	•	•	•	•	•	OMEGAMON monitored Supra requests
OMCICS	S	019	DCOMREQ		DCOMREQ	•	•	•	•	•	•	OMEGAMON monitored CA-Datcom requests
OMCICS	S	020	USREVNT		USREVNT	•	•	•	•	•	•	OMEGAMON User defined events





## Chapter 29. CICS PA field names by CICS version

The following cross-reference table relates the CICS PA names for CICS monitoring facility (CMF) performance class and transaction resource class data fields to the corresponding CMF field IDs and the CICS versions to which they apply.

Some columns in the table require explanation:

### CICS PA field name

The name used in report forms, HDB templates, and selection criteria (and their corresponding batch command operands **FIELDS** and **SELECT**).

A blank indicates that the field is not available, typically because it is a very long field, or it is an unprintable field such as a unit-of-work or a flag.

### Column heading

The heading used to identify the field in CICS PA reports and extract data sets.

### CICS version

The CICS versions to which a field applies:

- Yes, the field applies to this CICS version
- No, the field does not apply to this CICS version

The table is sorted by CICS PA field name.

### Note:

1. Some special fields, such as **APPLID** and **RESPONSE**, are not defined in the CMF Dictionary and are given a group name of "CICSPA". These fields are either derived from the fixed section of the CMF record (for example, **APPLID**), or calculated from two or more other CMF fields (for example, **RESPONSE**).
2. The **FILENAME**, **TSQNAME**, and **DPLNAME** fields are only available when CMF transaction resource class data is being collected.
3. The **APPLTRAN** and **APPLPROG** fields are only available when application programs invoke the application naming event monitoring points. See the **APPLNAME** parameter on the **DFHMCT TYPE=INITIAL** macro in the *CICS Resource Definition Guide*.

Table 18. Cross-reference: CICS PA field name × CICS version

		CMF field				CICS version						
CICS PA field name	Column heading	Group	Type	ID	Name	6	6	6	6	6	6	Description
						4	5	6	7	8	9	
						0	0	0	0	0	0	
	BTS Root	DFHCBTS	C	202	PRCSID	•	•	•	•	•	•	BTS Root Activity identifier
	BTSActID	DFHCBTS	C	203	ACTVTYID	•	•	•	•	•	•	BTS Activity identifier
	Err Flag	DFHTASK	C	064	TASKFLAG	•	•	•	•	•	•	Task error flags
	RRMSURID	DFHTASK	C	190	RRMSURID	•	•	•	•	•	•	RRMS/MVS unit-of-recovery ID (URID)
ABCODEC	ABcu	DFHPROG	C	114	ABCODEC	•	•	•	•	•	•	Current ABEND code
ABCODEO	ABor	DFHPROG	C	113	ABCODEO	•	•	•	•	•	•	Original ABEND Code
ACAPPLNM	ACApplNm	DFHTASK	C	451	ACAPPLNM	–	–	–	–	•	•	Application context application name
ACAPPLVR	ACApplVr	CICSPA	C	933	ACAPPLVR	–	–	–	–	•	•	Application context application version
ACCMETH	Acc Meth	DFHTERM	A	165	TERMINFO	•	•	•	•	•	•	Terminal Access Method
ACMAJVER	ACMajVer	DFHTASK	C	453	ACMAJVER	–	–	–	–	•	•	Application context application major version
ACMICVER	ACMicVer	DFHTASK	C	455	ACMICVER	–	–	–	–	•	•	Application context application micro version

Table 18. Cross-reference: CICS PA field name × CICS version (continued)

CICS PA field name	Column heading	CMF field				CICS version						Description
		Group	Type	ID	Name	6	6	6	6	6	6	
						4	5	6	7	8	9	
						0	0	0	0	0	0	
ACMINVER	ACMinVer	DFHTASK	C	454	ACMINVER	–	–	–	–	•	•	Application context application minor version
ACOPERNM	ACOperNm	DFHTASK	C	456	ACOPERNM	–	–	–	–	•	•	Application context operation name
ACPLATNM	ACPlatNm	DFHTASK	C	452	ACPLATNM	–	–	–	–	•	•	Application context platform name
ACTVTYNM	BTSActNm	DFHCBTS	C	204	ACTVTYNM	•	•	•	•	•	•	BTS Activity name
ADABREQ	ADABREQ	OMCICS	S	017	ADABREQ	•	•	•	•	•	•	OMEGAMON monitored Adabas requests
ADABWARN	ADABWARN	OMCICS	C	005	ADABWARN	•	•	•	•	•	•	OMEGAMON Adabas Limit Warning
ALERT	ALERT	CICSPA	A	915	ALERT	•	•	•	•	•	•	Total Alert count or percentage
ALERTDEF	ALERTDEF	CICSPA	I	010	ALERTDEF	•	•	•	•	•	•	Alert Definition name
ALRTACTV	ALRTACTV	CICSPA	I	005	ALRTACTV	•	•	•	•	•	•	Alert actual field value
ALRTFLD	ALRTFLD	CICSPA	I	003	ALRTFLD	•	•	•	•	•	•	Alert field Name
ALRTFLDT	ALRTFLDT	CICSPA	I	003	ALRTFLDT	•	•	•	•	•	•	Alert field type
ALRTSEQ#	ALRTSEQ#	CICSPA	I	001	ALRTSEQ#	•	•	•	•	•	•	Alert Sequence Number
ALRTSEV	ALRTSEV	CICSPA	I	002	ALRTSEV	•	•	•	•	•	•	Alert Severity
APPLID	APPLID	CICSPA	C	903	APPLID	•	•	•	•	•	•	CICS Generic APPLID
APPLPROG	Program	DFHAPPL	C	001	APPLNAME	•	•	•	•	•	•	Application naming Program
APPLRECS	APPLRecs	CICSPA	A	002	APPLRECS	•	•	•	•	•	•	Cross-System Application records
APPLTRAN	Tran	DFHAPPL	C	001	APPLNAME	•	•	•	•	•	•	Application naming Tran ID
BAACDCCT	BTSADCRq	DFHCBTS	A	217	BAACDCCT	•	•	•	•	•	•	BTS Activity Data Containers requests
BAACQPCT	BTSAcqui	DFHCBTS	A	214	BAACQPCT	•	•	•	•	•	•	BTS Acquire Process/Activity requests
BADACTCT	BTS DefA	DFHCBTS	A	209	BADACTCT	•	•	•	•	•	•	BTS Define Activity requests
BADCPACT	BTSCandl	DFHCBTS	A	213	BADCPACT	•	•	•	•	•	•	BTS Cancel Process/Activity requests
BADFIECT	BTSDefEv	DFHCBTS	A	220	BADFIECT	•	•	•	•	•	•	BTS Define-Input Event requests
BADPROCT	BTS DefP	DFHCBTS	A	208	BADPROCT	•	•	•	•	•	•	BTS Define Process requests
BALKPACT	BTS Link	DFHCBTS	A	207	BALKPACT	•	•	•	•	•	•	BTS Link Process/Activity count
BAPRDCCT	BTSPDCRq	DFHCBTS	A	216	BAPRDCCT	•	•	•	•	•	•	BTS Process Data Containers requests
BARASYCT	BTS Asyn	DFHCBTS	A	206	BARASYCT	•	•	•	•	•	•	BTS asynchronous Process/Activity count
BARATECT	BTSRtvEv	DFHCBTS	A	219	BARATECT	•	•	•	•	•	•	BTS Retrieve-Reattach Event requests
BARMPACT	BTSResum	DFHCBTS	A	212	BARMPACT	•	•	•	•	•	•	BTS Resume Process/Activity requests
BARSPACT	BTSReset	DFHCBTS	A	210	BARSPACT	•	•	•	•	•	•	BTS Reset Process/Activity requests
BARSYNCT	BTS Sync	DFHCBTS	A	205	BARSYNCT	•	•	•	•	•	•	BTS synchronous Process/Activity count
BASUPACT	BTS Susp	DFHCBTS	A	211	BASUPACT	•	•	•	•	•	•	BTS Suspend Process/Activity requests
BATIAECT	BTSTimEv	DFHCBTS	A	221	BATIAECT	•	•	•	•	•	•	BTS TIMER Event requests
BATOTCCT	BTSTDCRq	DFHCBTS	A	218	BATOTCCT	•	•	•	•	•	•	BTS Process/Activity Data Container requests
BATOTECT	BTSTotEv	DFHCBTS	A	222	BATOTECT	•	•	•	•	•	•	BTS Event-related requests
BATOTPCT	BTSTotal	DFHCBTS	A	215	BATOTPCT	•	•	•	•	•	•	BTS Total Process/Activity requests
BFDGSTCT	BFDGSTcT	DFHCICS	A	408	BFDGSTCT	–	–	–	–	•	•	Built-in function BIF DIGEST requests
BFTOTCT	BFTotCt	DFHCICS	A	409	BFTOTCT	–	–	–	–	•	•	Total Built-in (BIF) function requests
BMSIN	BMSIN	DFHMAPP	A	051	BMSINCT	•	•	•	•	•	•	BMS IN requests
BMSMAP	BMSMAP	DFHMAPP	A	050	BMSMAPCT	•	•	•	•	•	•	BMS MAP requests
BMSOUT	BMSOUT	DFHMAPP	A	052	BMSOUTCT	•	•	•	•	•	•	BMS OUT requests
BMSTOTAL	BMSTotal	DFHMAPP	A	090	BMSTOTCT	•	•	•	•	•	•	BMS Total requests
BRDGTRAN	Brdg	DFHTASK	C	124	BRDGTRAN	•	•	•	•	•	•	Bridge Listener Transaction ID
CALLWARN	CALLWARN	OMCICS	C	013	CALLWARN	•	•	•	•	•	•	OMEGAMON EXEC Calls Limit Warning
CBSRVVRNM	Corb	DFHEJBS	C	311	CBSRVVRNM	•	•	•	•	–	–	CorbaServer name
CECMCHTP	CECMchTp	DFHTASK	C	430	CECMCHTP	–	–	–	–	•	•	CEC machine type
CECMDLID	CECModId	DFHTASK	C	431	CECMDLID	–	–	–	–	•	•	CEC model number
CECMTYPE	CECMType	CICSPA	C	932	CECMTYPE	–	–	–	–	•	•	CEC machine type and model number
CFCAPICT	CFCIsAPI	DFHCICS	A	025	CFCAPICT	•	•	•	•	•	•	OO Foundation Class requests
CFDTSYNC	CFDTSync	DFHSYNC	S	177	SRVSYWTT	•	•	•	•	•	•	CF Data Table syncpoint wait time
CFDTPWAIT	CFDTPWait	DFHFILE	S	176	CFDTPWAIT	•	•	•	•	•	•	CF Data Table access requests wait time
CHARIN1	CharIn1	DFHTERM	A	083	TCCHRN1	•	•	•	•	•	•	Terminal characters received count
CHARIN2	CharIn2	DFHTERM	A	085	TCCHRN2	•	•	•	•	•	•	LU6.1 characters received count
CHAROUT1	CharOut1	DFHTERM	A	084	TCCHROU1	•	•	•	•	•	•	Terminal characters sent count
CHAROUT2	CharOut2	DFHTERM	A	086	TCCHROU2	•	•	•	•	•	•	LU6.1 characters sent count
CLIENTIP	ClientIP	DFH SOCK	C	244	CLIPADDR	•	•	–	–	–	–	Client or Telnet IP address
CLIP6ADR	Clip6Adr	DFH SOCK	C	318	CLIPADDR	–	–	•	•	•	•	Client or Telnet IP address

Table 18. Cross-reference: CICS PA field name × CICS version (continued)

CICS PA field name	Column heading	CMF field		CICS version							Description
		Group	Type	ID	Name	6	6	6	6	6	
						4	5	6	7	8	
						0	0	0	0	0	
CLIPPORT	CLIPPORT	DFH SOCK	A	330	CLIPPORT	–	•	•	•	•	Client IP Port Number
COMMWAIT	CommWait	CICSPA	D	906	COMMWAIT	•	•	•	•	•	Communications wait time
CPU	User CPU	DFHTASK	S	008	USRCPUT	•	•	•	•	•	CPU time
CPUIPCT	CPUIPct	CICSPA	D	937	CPUIPCT	–	–	–	–	•	% CPU time based on interval
CPUISSPE	CPUIsSPe	CICSPA	D	929	CPUISSPE	–	–	–	–	•	CPU time that is offload eligible
CPUONCP	CPUonCP	DFHTASK	S	436	CPUTONCP	–	–	–	–	•	CPU time on standard CP
CPUONCPE	CPUonCPe	DFHTASK	S	437	OFFLPCTT	–	–	–	–	•	Offload eligible CPU time on standard CP
CPUONCPN	CPUonCPn	CICSPA	D	931	CPUONCPN	–	–	–	–	•	CPU time on standard CP not offload eligible
CPUONSP	CPUonSP	CICSPA	D	930	CPUONSP	–	–	–	–	•	CPU time on Specialty Processor
CPUSU	SrvcUnit	CICSPA	D	943	CPUSU	•	•	•	•	•	CPU Service Units
CPUWARN	CPUWARN	OMCICS	C	009	CPUWARN	•	•	•	•	•	OMEGAMON CPU Limit Warning
CURTASKS	CurTasks	DFHTASK	C	434	CURTASKS	–	–	–	–	•	Current tasks value at task start
DB2CONWT	DB2ConWt	DFHDATA	S	188	DB2CONWT	•	•	•	•	•	DB2 Connection wait time
DB2RDYQW	DB2ThdWt	DFHDATA	S	187	DB2RDYQW	•	•	•	•	•	DB2 Thread wait time
DB2REQCT	DB2 Reqs	DFHDATA	A	180	DB2REQCT	•	•	•	•	•	DB2 requests
DB2WAIT	DB2SQLWt	DFHDATA	S	189	DB2WAIT	•	•	•	•	–	DB2 SQL/IFI wait time
DB2WARN	DB2WARN	OMCICS	C	001	DB2WARN	•	•	•	•	•	OMEGAMON DB2 Limit Warning
DBGETS	DBget	DBCTL	A	035	DBGETS	•	•	•	•	•	Number of Database Get calls issued
DBIOCALL	DBIOCall	DBCTL	A	007	DBIOCALL	•	•	•	•	•	Number of Database I/Os
DBIOELAP	DBIOElap	DBCTL	S	005	DBIOELAP	•	•	•	•	•	Elapsed time for Database I/O
DBUPDATE	DBupdate	DBCTL	A	036	DBUPDATE	•	•	•	•	•	Number of Database Update calls issued
DBWAITS	DBwait	DBCTL	A	037	DBWAITS	•	•	•	•	•	Number of Database waits
DCOMREQ	DCOMREQ	OMCICS	S	019	DCOMREQ	•	•	•	•	•	OMEGAMON monitored CA-Datcom requests
DCOMWARN	DCOMWARN	OMCICS	C	008	DCOMWARN	•	•	•	•	•	OMEGAMON CA-Datcom Limit Warning
DEDBBFRW	DEDBBfrW	DBCTL	A	031	DEDBBFRW	•	•	•	•	•	Number of waits for DEDB buffers
DEDBCALL	DEDBcall	DBCTL	A	027	DEDBCALL	•	•	•	•	•	Number of DEDB calls
DEDBRDOP	DEDBRdOp	DBCTL	A	028	DEDBRDOP	•	•	•	•	•	Number of DEDB read operations
DHCREATE	DHCREATE	DFHDOCH	A	226	DHCRECT	•	•	•	•	•	Document Handler CREATE requests
DHDELETE	DHDELETE	DFHDOCH	A	223	DHDELCT	–	•	•	•	•	Document Handler DELETE requests
DHINSERT	DHINSERT	DFHDOCH	A	227	DHINSCT	•	•	•	•	•	Document Handler INSERT requests
DHRETRVE	DHRETRVE	DFHDOCH	A	229	DHRETCCT	•	•	•	•	•	Document Handler RETRIEVE requests
DHSET	DHSET	DFHDOCH	A	228	DHSETCT	•	•	•	•	•	Document Handler SET requests
DHTOTAL	DH Total	DFHDOCH	A	230	DHTOTCT	•	•	•	•	•	Document Handler Total requests
DHTOTDCL	DHDDocLen	DFHDOCH	A	240	DHTOTDCL	•	•	•	•	•	Total length of all documents created
DISPATCH	Dispatch	DFHTASK	S	007	USRDISPT	•	•	•	•	•	Dispatch time
DISPWAIT	DispWait	DFHTASK	S	102	DISPWTT	•	•	•	•	•	Redispatch wait time
DLETCALL	DLETCall	DBCTL	A	015	DLETCALL	•	•	•	•	•	Number of Database DLET calls issued
DLICALLS	DLIcalls	DBCTL	A	017	DLICALLS	•	•	•	•	•	Total DL/I Database calls
DLIWARN	DLIWARN	OMCICS	C	002	DLIWARN	•	•	•	•	•	OMEGAMON DLI Limit Warning
DPLNAME	DPL Name	CICSPA	C	919	DPLNAME	•	•	•	•	•	Distributed program link name
DPLRECS	DPL Recs	CICSPA	A	005	DPLRECS	•	•	•	•	•	Cross-System DPL records
DSAWARN	DSAWARN	OMCICS	C	011	DSAWARN	•	•	•	•	•	OMEGAMON DSA Limit Warning
DSCHMDLY	DSCHMDLY	DFHTASK	S	247	DSCHMDLY	•	•	•	•	•	Redispatch wait time caused by change-TCB mode
DSMMSCWT	DS Wait	DFHTASK	S	279	DSMMSCWT	•	•	•	•	•	DS storage constraint wait time
DSPDELAY	Disp1Dly	DFHTASK	S	125	DSPDELAY	•	•	•	•	•	First dispatch wait time
DSTCBHWM	DSTCBHWM	DFHTASK	A	252	DSTCBHWM	•	•	•	•	•	CICS Dispatcher TCB HWM
DSTCBMWT	DSTCBMWT	DFHTASK	S	268	DSTCBMWT	•	•	•	•	•	Dispatcher TCB Mismatch wait time
ECEFOPCT	ECEFOPCT	DFHCICS	A	416	ECEFOPCT	–	–	•	•	•	Event Filter operations
ECEVNTCT	ECEVNTCT	DFHCICS	A	417	ECEVNTCT	–	–	•	•	•	Events captured
ECSEVCCT	ECSEVCCT	DFHCICS	A	418	ECSEVCCT	–	–	–	•	•	Synchronous Emission Events captured
ECSIGECT	ECSIGECT	DFHCICS	A	415	ECSIGECT	–	–	•	•	•	SIGNAL EVENT requests
EDSAWARN	EDSAWARN	OMCICS	C	012	EDSAWARN	•	•	•	•	•	OMEGAMON EDSA Limit Warning
EICTOTCT	EICTotCt	DFHCICS	A	402	EICTOTCT	–	–	•	•	•	EXEC CICS requests
EJBACTIV	EJBActiv	DFHEJBS	A	312	EJBSACCT	•	•	•	•	–	Number of Bean State Activation requests

Table 18. Cross-reference: CICS PA field name × CICS version (continued)

CICS PA field name	Column heading	CMF field		CICS version							Description
		Group	Type	ID	Name	6	6	6	6	6	
						4	5	6	7	8	
						0	0	0	0	0	
EJBCREAT	EJBCreat	DFHEJBS	A	314	EJBCRECT	•	•	•	•	–	Number of Bean Creation requests
EJBMETHD	EJBMethd	DFHEJBS	A	316	EJBMTHCT	•	•	•	•	–	Number of EJB Method Calls
EJBPASIV	EJBPasiv	DFHEJBS	A	313	EJBSPACT	•	•	•	•	–	Number of Bean State Passivation requests
EJBREMOV	EJBRemov	DFHEJBS	A	315	EJBREMCT	•	•	•	•	–	Number of Bean Removal requests
EJBTOTAL	EJBTotal	DFHEJBS	A	317	EJBTOTCT	•	•	•	•	–	Total Number of EJB requests
ELAPWARN	ELAPWARN	OMCICS	C	010	ELAPWARN	•	•	•	•	•	OMEGAMON Elapsed Time Limit Warning
ENQDELAY	ENQDelay	DFHTASK	S	129	ENQDELAY	•	•	•	•	•	Local Enqueue wait time
ENQSDLY	ENQsDlay	CICSPA	D	924	ENQSDLY	•	•	•	•	•	Total ENQ wait time
ERRFLAGS	Err Flag	DFHTASK	A	064	TASKFLAG	•	•	•	•	•	Task error flags
EXCLDEQS	ExclDEQs	DBCTL	A	026	EXCLDEQS	•	•	•	•	•	Number of Exclusive Dequeues
EXCLENQS	ExclENQs	DBCTL	A	024	EXCLENQS	•	•	•	•	•	Number of Exclusive Enqueues
EXCLENQW	ExclENQW	DBCTL	A	025	EXCLENQW	•	•	•	•	•	Number of waits on Exclusive Enqueues
EXWAIT	Exc Wait	DFHCICS	S	103	EXWTTIME	•	•	•	•	•	Exception Conditions wait time
FCADD	FCADD	DFHFILE	A	039	FCADDCT	•	•	•	•	•	File ADD requests
FCAMCT	FCAMRq	DFHFILE	A	070	FCAMCT	•	•	•	•	•	File access-method requests
FCBROWSE	FCBROWSE	DFHFILE	A	038	FCBRWCT	•	•	•	•	•	File Browse requests
FCDELETE	FCDELETE	DFHFILE	A	040	FCDELCT	•	•	•	•	•	File DELETE requests
FCGET	FCGET	DFHFILE	A	036	FCGETCT	•	•	•	•	•	File GET requests
FCPUT	FCPUT	DFHFILE	A	037	FCPUTCT	•	•	•	•	•	File PUT requests
FCTOTAL	FC Total	DFHFILE	A	093	FCTOTCT	•	•	•	•	•	File Control requests
FCTY	Fcty	DFHTASK	C	163	FCTYNAME	•	•	•	•	•	Transaction Facility name
FCTYTYPE	FctyType	DFHTASK	C	164	TRANFLAG	•	•	•	•	•	Transaction facility type
FCVSWTT	FCVSWait	DFHFILE	S	427	FCVSWTT	–	–	–	–	•	VSAM string wait time
FCWAIT	FC Wait	DFHFILE	S	063	FCIOWTT	•	•	•	•	•	File I/O wait time
FCXCWTT	FCVXWait	DFHFILE	S	426	FCXCWTT	–	–	–	–	•	VSAM exclusive control wait time
FILENAME	FileName	CICSPA	C	916	FILENAME	•	•	•	•	•	File name
FUNCSHIP	FuncShip	CICSPA	A	004	FUNCSHIP	•	•	•	•	•	Cross-System Function Shipping records
GHNCALL	GHNcall	DBCTL	A	012	GHNCALL	•	•	•	•	•	Number of Database GHN calls issued
GHNPCALL	GHNPcall	DBCTL	A	013	GHNPCALL	•	•	•	•	•	Number of Database GHNP calls issued
GHUCALL	GHUcall	DBCTL	A	011	GHUCALL	•	•	•	•	•	Number of Database GHU calls issued
GIVEUPWT	GiveUpWt	DFHTASK	S	184	GVUPWAIT	•	•	•	•	•	Give up control wait time
GNCALL	GNcall	DBCTL	A	009	GNCALL	•	•	•	•	•	Number of Database GN calls issued
GNPCALL	GNPcall	DBCTL	A	010	GNPCALL	•	•	•	•	•	Number of Database GNP calls issued
GNQDELAY	GNQDelay	DFHTASK	S	123	GNQDELAY	•	•	•	•	•	Global Enqueue wait time
GUCALL	GUcall	DBCTL	A	008	GUCALL	•	•	•	•	•	Number of Database GU calls issued
ICDELAY	IC Delay	DFHTASK	S	183	ICDELAY	•	•	•	•	•	Interval Control (IC) wait time
ICPUT	ICSTART	DFHTASK	A	059	ICPUINCT	•	•	•	•	•	Interval Control START or INITIATE requests
ICSTACCT	ICSTACCT	DFHTASK	A	065	ICSTACCT	•	•	•	•	•	Local IC START requests with CHANNEL option
ICSTACDL	ICSTACDL	DFHTASK	A	345	ICSTACDL	•	•	•	•	•	Container data len for Local IC START w/ CHANNEL
ICSTRCCT	ICSTRCCT	DFHTASK	A	346	ICSTRCCT	•	•	•	•	•	Remote IC START requests with CHANNEL option
ICSTRCDL	ICSTRCDL	DFHTASK	A	347	ICSTRCDL	•	•	•	•	•	Container data len for Remot IC START w/ CHANNEL
ICTOTAL	IC Total	DFHTASK	A	066	ICTOTCT	•	•	•	•	•	Interval Control requests
IDMSREQ	IDMSREQ	OMCICS	S	016	IDMSREQ	•	•	•	•	•	OMEGAMON monitored CA-IDMS requests
IDMSWARN	IDMSWARN	OMCICS	C	006	IDMSWARN	•	•	•	•	•	OMEGAMON CA-IDMS Limit Warning
IMSREQCT	IMS Reqs	DFHDATA	A	179	IMSREQCT	•	•	•	•	•	IMS (DBCTL) requests
IMSWAIT	IMS Wait	DFHDATA	S	186	IMSWAIT	•	•	•	•	•	IMS (DBCTL) wait time
INTCWAIT	IntCWait	DBCTL	S	003	INTCWAIT	•	•	•	•	•	Elapsed wait time for Intent Conflict
IOWAIT	I/O Wait	CICSPA	D	907	IOWAIT	•	•	•	•	•	Total IO wait time
IRESP	Int Resp	CICSPA	D	908	IRESP	•	•	•	•	•	Transaction internal response time
IRWAIT	IR Wait	DFHTERM	S	100	IRIOWTT	•	•	•	•	•	MRO link wait time
ISALLOC	ISALLOC	DFH SOCK	A	288	ISALLOCT	–	•	•	•	•	Allocate Session requests for sessions on IP
ISALWTT	ISAIWait	DFH SOCK	S	319	ISALWTT	–	–	–	–	•	IPIC allocate session wait time

Table 18. Cross-reference: CICS PA field name × CICS version (continued)

CICS PA field name	Column heading	CMF field		CICS version							Description
		Group	Type	ID	Name	6	6	6	6	6	
						4	5	6	7	8	
						0	0	0	0	0	
ISIPICNM	ISIPICNM	DFH SOCK	C	305	ISIPCNM	–	•	•	•	•	Name of IPCONN definition that attached the task
ISRTCALL	ISRTcall	DBCTL	A	014	ISRTCALL	•	•	•	•	•	Number of Database ISRT calls issued
ISWAIT	IS Wait	DFH SOCK	S	300	ISOWTT	–	•	•	•	•	IPCONN link wait time
J8CPU	J8 CPU	DFHTASK	S	260	J8CPUT	•	•	•	•	–	CICS J8 TCB CPU time
J9CPU	J9 CPU	DFHTASK	S	267	J9CPUT	•	•	•	•	–	User task J9 Mode CPU time
JCWAIT	JC Wait	DFHJOUR	S	010	JCIOWTT	•	•	•	•	•	Journal I/O wait time
JNLPUT	JnlWrite	DFHJOUR	A	058	JNLWRTCT	•	•	•	•	•	Journal write requests
JOBNAME	Jobname	CICSPA	C	905	JOBNAME	•	•	•	•	•	Job Name
JVMITIME	JVMITime	DFHTASK	S	273	JVMITIME	•	•	•	•	•	JVM initialize elapsed time
JVMMTIME	JVM Meth	CICSPA	D	910	JVMMTIME	•	•	•	•	•	JVM Method time
JVMRTIME	JVMRTIME	DFHTASK	S	275	JVMRTIME	•	•	•	•	•	JVM reset elapsed time
JVMSUSP	JVM Susp	DFHTASK	S	254	JVMSUSP	•	•	•	•	•	JVM suspend time
JVMTHDWT	JVMThdWt	DFHTASK	S	401	JVMTHDWT	–	–	•	•	•	JVM server thread wait time
JVMTIME	JVM Elap	DFHTASK	S	253	JVMTIME	•	•	•	•	•	JVM elapsed time
KY8CPU	KY8 CPU	DFHTASK	S	263	KY8CPUT	•	•	•	•	•	CICS Key 8 TCB CPU time
KY8DISPT	KY8 Disp	DFHTASK	S	262	KY8DISPT	•	•	•	•	•	CICS Key 8 TCB dispatch time
KY9CPU	KY9 CPU	DFHTASK	S	265	KY9CPUT	•	•	•	•	•	User task Key 9 Mode CPU time
KY9DISPT	KY9 Disp	DFHTASK	S	264	KY9DISPT	•	•	•	•	•	User task Key 9 Mode Dispatch time
L8CPU	L8 CPU	DFHTASK	S	259	L8CPUT	•	•	•	•	•	CICS L8 TCB CPU time
L9CPU	L9 CPU	DFHTASK	S	266	L9CPUT	•	•	•	•	•	User task L9 CPU time
LOCKDLAY	LM Delay	DFHTASK	S	128	LMDELAY	•	•	•	•	•	Lock Manager (LM) wait time
LOCKSDLY	LocksDly	CICSPA	D	923	LOCKSDLY	–	–	–	–	•	Total Lock wait time and Enqueue delay time
LOCKWAIT	LockWait	CICSPA	D	922	LOCKWAIT	–	–	–	–	•	Total Lock wait time
LOGWRITE	LogWrite	DFHJOUR	A	172	LOGWRTCT	•	•	•	•	•	Log Stream write requests
LU61WAIT	LU61Wait	DFHTERM	S	133	LU61WTT	•	•	•	•	•	LU6.1 wait time
LU62WAIT	LU62Wait	DFHTERM	S	134	LU62WTT	•	•	•	•	•	LU6.2 wait time
LUNAME	LUName	DFHTERM	C	111	LUNAME	•	•	•	•	•	VTAM logical unit name
MAXHTDLY	MaxHTDly	DFHTASK	S	278	MAXHTDLY	–	–	–	–	–	Maximum Hot-Pooling TCB delay time
MAXJTDLY	MaxJTDly	DFHTASK	S	277	MAXJTDLY	•	•	•	•	–	Maximum JVM TCB delay time
MAXOTDLY	MaxOTDly	DFHTASK	S	250	MXTOTDLY	•	•	•	•	•	Maximum Open TCB delay time
MAXSTDLY	MAXSTDLY	DFHTASK	S	281	MAXSTDLY	•	•	•	•	•	Maximum SSL TCB delay time
MAXTASKS	MaxTasks	DFHTASK	C	433	MAXTASKS	–	–	–	–	•	Current MAXTASKS (MXT) value at task start
MAXTTDLY	MAXTTDLY	DFHTASK	S	283	MAXTTDLY	–	–	•	•	•	Maximum JVM server thread TCB delay time
MAXXTDLY	MAXXTDLY	DFHTASK	S	282	MAXXTDLY	•	•	•	•	•	Maximum XPLink TCB delay time
MLXMLTCT	XMLTrans	DFHWEBB	A	413	MLXMLTCT	–	–	•	•	•	Application data TRANSFORM requests
MLXSSCTM	XMLSSCPU	DFHWEBB	S	411	MLXSSCTM	–	–	•	•	–	z/OS XML System Services CPU time
MLXSSTDL	XMLDocLn	DFHWEBB	A	412	MLXSSTDL	–	–	•	•	•	Document length parsed - z/OS System Services
MPPRTXCD	PolRuXc	DFHCICS	A	449	MPPRTXCD	–	–	–	–	•	Number of policy rule thresholds exceeded
MQWARN	MQWARN	OMCICS	C	004	MQWARN	•	•	•	•	•	OMEGAMON MQ Limit Warning
MSCPU	MS CPU	DFHTASK	S	258	MSCPUT	•	•	•	•	•	CICS TCBs CPU time
MSDISPT	MS Disp	DFHTASK	S	257	MSDISPT	•	•	•	•	•	CICS TCBs dispatch time
MSGIN1	MsgIn1	DFHTERM	A	034	TCMSGIN1	•	•	•	•	•	Messages received count
MSGIN2	MsgIn2	DFHTERM	A	067	TCMSGIN2	•	•	•	•	•	Messages received from LU6.1
MSGOUT1	MsgOut1	DFHTERM	A	035	TCMSGOU1	•	•	•	•	•	Messages sent count
MSGOUT2	MsgOut2	DFHTERM	A	068	TCMSGOU2	•	•	•	•	•	Messages sent to LU6.1
MVSID	MVS ID	CICSPA	C	904	MVSID	•	•	•	•	•	MVS SMF ID
MXTDELAY	MXTDelay	DFHTASK	S	127	MXTDELAY	•	•	•	•	•	First dispatch MXT wait time
NATURE	Nature	DFHTERM	A	165	TERMINFO	•	•	•	•	•	Transaction
NETID	NET ID	DFHTERM	C	197	NETID	•	•	•	•	•	VTAM LUALIAS Network ID
NETNAME	NETName	DFHTASK	C	097	NETUOWPX	•	•	•	•	•	Originating System VTAM network name
NETUOWSX	NETUOWID	DFHTASK	C	098	NETUOWSX	•	•	•	•	•	Network UOW ID
OADATA1	OADData1	DFHCICS	C	352	OADATA1	–	–	–	•	•	Originating Adapter data 1
OADATA2	OADData2	DFHCICS	C	353	OADATA2	–	–	–	•	•	Originating Adapter data 2
OADATA3	OADData3	DFHCICS	C	354	OADATA3	–	–	–	•	•	Originating Adapter data 3

Table 18. Cross-reference: CICS PA field name × CICS version (continued)

		CMF field				CICS version						
CICS PA field name	Column heading	Group	Type	ID	Name	6	6	6	6	6	6	Description
						4	5	6	7	8	9	
						0	0	0	0	0	0	
OADID	OADID	DFHCICS	C	351	OADID	–	–	–	•	•	•	Originating Adapter Identifier
OAPPLID	OAPPLID	DFHCICS	C	360	OAPPLID	–	•	•	•	•	•	Originating CICS APPLID
OCLi6ADR	OCLi6Adr	DFHCICS	C	372	OCLIPADR	–	–	•	•	•	•	Originating Client or Telnet IP address
OCLINTIP	OCLintIP	DFHCICS	C	368	OCLIPADR	–	•	–	–	–	–	Originating Client or Telnet IP address
OCLIPORT	OCLIPORT	DFHCICS	A	369	OCLIPORT	–	•	•	•	•	•	Originating Client IP Port Number
OFCTY	OFcty	DFHCICS	C	371	OFCTYNME	–	•	•	•	•	•	Originating Transaction Facility name
OFCTYTYP	OFctyTyp	DFHCICS	C	370	OTRANFLG	–	•	•	•	•	•	Originating Transaction Facility Type
OFFLIPCT	OfflIPct	CICSPA	D	942	OFFLIPCT	–	–	–	–	•	•	% offld elig CPU time on std CP based on intrvl
OFFLPCT	OfflPct	CICSPA	D	941	OFFLPCT	–	–	–	–	•	•	% offload eligible CPU time on standard CP
OFLDIPCT	OfldIPct	CICSPA	D	940	OFLDIPCT	–	–	–	–	•	•	% offload eligible CPU time based on interval
OFLDPCT	OfldPct	CICSPA	D	936	OFLDPCT	–	–	–	–	•	•	% offload eligible CPU time
OMEGWORK	OMEGWORK	OMCICS	C	015	OMEGWORK	•	•	•	•	•	•	OMEGAMON User work area
OMODDLY	OtModDly	CICSPA	D	928	OMODDLY	–	–	–	–	•	•	Other CICS TCB Mode redispach wait time
ONETWKID	ONETWKID	DFHCICS	C	359	ONETWKID	–	•	•	•	•	•	Originating Network ID
OORIGIN	OOrigin	DFHCICS	C	370	OTRANFLG	–	•	•	•	•	•	Originating Transaction Origin type
OPORT	OPORT	DFHCICS	A	367	OPORTNUM	–	•	•	•	•	•	Originating TCP/IP Port Number
ORIGIN	Origin	DFHTASK	C	164	TRANFLAG	•	•	•	•	•	•	Transaction origin type
OSLATNCY	OSLatncy	CICSPA	D	920	OSLATNCY	–	•	•	•	•	•	Task start latency since Origin task start
OSOWAIT	OSO Wait	DFHSOCK	S	299	SOOIOWTT	•	•	•	•	•	•	Outbound Socket I/O Wait Time
OSTART	OStart	DFHCICS	T	361	OSTART	–	•	•	•	•	•	Originating Task start time
OTASKNO	OTaskNo	DFHCICS	P	362	OTRANNUM	–	•	•	•	•	•	Originating Transaction number
OTCPSRVC	OTCPIPSr	DFHCICS	C	366	OTCPSVCE	–	•	•	•	•	•	Originating TCP/IP Service Name
OTRAN	OTran	DFHCICS	C	363	OTRAN	–	•	•	•	•	•	Originating Transaction identifier
OTRANFLG	OTranFlg	DFHCICS	A	370	OTRANFLG	–	•	•	•	•	•	Originating Transaction flags
OTRANTYP	OTranTyp	DFHCICS	C	370	OTRANFLG	–	•	•	•	•	•	Originating Transaction type
OTSID	OTS ID	DFHTASK	C	194	OTSTID	•	•	•	•	•	•	OTS Transaction ID
OTSINDWT	OTSIndWt	DFHSYNC	S	199	OTSINDWT	•	•	•	•	•	•	OTS Indoubt Wait time
OUSERCOR	OUserCor	DFHCICS	C	365	OUSERCOR	–	•	•	•	•	•	Originating User Correlator
OUSERID	OUserid	DFHCICS	C	364	OUSERID	–	•	•	•	•	•	Originating User ID
OVFLBFRU	OvflBfrU	DBCTL	A	029	OVFLBFRU	•	•	•	•	•	•	Number of Overflow Buffers used
PC24BHW	PC24bHWM	DFHSTOR	A	108	PC24BHW	•	•	•	•	•	•	Program Storage HWM below 16MB
PC24CHWM	PC24CHWM	DFHSTOR	A	143	PC24CHWM	•	•	•	•	•	•	Program Storage (CDSA) HWM below 16MB
PC24RHWM	PC24RHWM	DFHSTOR	A	162	PC24RHWM	•	•	•	•	•	•	Program Storage (RDSA) HWM below 16MB
PC24SHWM	PC24SHWM	DFHSTOR	A	160	PC24SHWM	•	•	•	•	•	•	Program Storage (SDSA) HWM below 16MB
PC31AHWM	PC31aHWM	DFHSTOR	A	139	PC31AHWM	•	•	•	•	•	•	Program Storage HWM above 16MB
PC31CHWM	PC31CHWM	DFHSTOR	A	142	PC31CHWM	•	•	•	•	•	•	Program Storage (ECDSA) HWM above 16MB
PC31RHWM	PC31RHWM	DFHSTOR	A	122	PC31RHWM	•	•	•	•	•	•	Program Storage (ERDSA) HWM above 16MB
PC31SHWM	PC31SHWM	DFHSTOR	A	161	PC31SHWM	•	•	•	•	•	•	Program Storage (ESDSA) HWM above 16MB
PCDLCRDL	PCDLCRDL	DFHPROG	A	287	PCDLCRDL	•	•	•	•	•	•	Container data length for DPL RETURN w/ CHANNEL
PCDLCSDL	PCDLCSDL	DFHPROG	A	286	PCDLCSDL	•	•	•	•	•	•	Container data length for DPL reqs with CHANNEL
PCDPL	PCDPLINK	DFHPROG	A	073	PCDPLCT	•	•	•	•	•	•	Distributed Program Link (DPL) requests
PCDPLCCT	PCDPLCCT	DFHPROG	A	308	PCDPLCCT	•	•	•	•	•	•	DPL requests with CHANNEL option
PCLINK	PCLINK	DFHPROG	A	055	PCLINKCT	•	•	•	•	•	•	Program LINK requests
PCLNKCCT	PCLNKCCT	DFHPROG	A	306	PCLNKCCT	•	•	•	•	•	•	LINK requests with CHANNEL option
PCLOAD	PCLOAD	DFHPROG	A	057	PCLOADCT	•	•	•	•	•	•	Program LOAD requests
PCLOADTM	PCLOADWt	DFHPROG	S	115	PCLOADTM	•	•	•	•	•	•	Program Library wait time
PCLURM	PCLNKURM	DFHPROG	A	072	PCLURMCT	•	•	•	•	•	•	Program LINK URM requests
PCRTNCCT	PCRTNCCT	DFHPROG	A	309	PCRTNCCT	•	•	•	•	•	•	Program RETURN requests with CHANNEL option
PCRTNCDL	PCRTNCDL	DFHPROG	A	310	PCRTNCDL	•	•	•	•	•	•	Container data length for RETURN with CHANNEL
PCSTGHWM	PCStgHWM	DFHSTOR	A	087	PCSTGHWM	•	•	•	•	•	•	Program Storage HWM above and below 16MB
PCXCLCCT	PCXCLCCT	DFHPROG	A	307	PCXCLCCT	•	•	•	•	•	•	XCTL requests with CHANNEL option



Table 18. Cross-reference: CICS PA field name × CICS version (continued)

CICS PA field name	Column heading	CMF field				CICS version						Description
		Group	Type	ID	Name	6	6	6	6	6	6	
						4	5	6	7	8	9	
						0	0	0	0	0	0	
PCXCTL	PCXCTL	DFHPROG	A	056	PCXCTLCT	•	•	•	•	•	•	Program XCTL requests
PGBRWCCT	PGBRWCCT	DFHCHNL	A	322	PGBRWCCT	•	•	•	•	•	•	BROWSE CHANNEL CONTAINER requests
PGCRECCT	PGCRECCT	DFHCHNL	A	328	PGCRECCT	•	•	•	•	•	•	Number of Containers created
PGCSTHWM	PGCSTHWM	DFHCHNL	A	329	PGCSTHWM	–	•	•	•	•	•	Maximum Container Storage allocated to task
PGGETCCT	PGGETCCT	DFHCHNL	A	323	PGGETCCT	•	•	•	•	•	•	GET CHANNEL CONTAINER requests
PGGETCDL	PGGETCDL	DFHCHNL	A	326	PGGETCDL	•	•	•	•	•	•	GET CHANNEL CONTAINER data length
PGMOVCCT	PGMOVCCT	DFHCHNL	A	325	PGMOVCCT	•	•	•	•	•	•	MOVE CHANNEL CONTAINER requests
PGPUTCCT	PGPUTCCT	DFHCHNL	A	324	PGPUTCCT	•	•	•	•	•	•	PUT CHANNEL CONTAINER requests
PGPUTCDL	PGPUTCDL	DFHCHNL	A	327	PGPUTCDL	•	•	•	•	•	•	PUT CHANNEL CONTAINER data length
PGTOTCCT	PGTOTCCT	DFHCHNL	A	321	PGTOTCCT	•	•	•	•	•	•	Total number of CHANNEL CONTAINER requests
PHAPPLID	PHAPPLID	DFHCICS	C	374	PHAPPLID	–	–	–	•	•	•	Previous Hop Data APPLID
PHCOUNT	PHCount	DFHCICS	A	378	PHCOUNT	–	–	–	•	•	•	Previous Hop Data Count
PHLATNCY	PHLatncy	CICSPA	D	921	PHLATNCY	–	–	–	•	•	•	Previous Hop latency time
PHNTWKID	PHNTWKID	DFHCICS	C	373	PHNTWKID	–	–	–	•	•	•	Previous Hop Data Network ID
PHSTART	PHStart	DFHCICS	T	375	PHSTART	–	–	–	•	•	•	Previous Hop Data Task Start
PHTASKNO	PHTaskNo	DFHCICS	P	376	PHTRANNO	–	–	–	•	•	•	Previous Hop Data Transaction Number
PHTRAN	PHTran	DFHCICS	C	377	PHTRAN	–	–	–	•	•	•	Previous Hop Data Transaction ID
PILOCKEL	PILockEl	DBCTL	S	006	PILOCKEL	•	•	•	•	•	•	Elapsed time for PI Locking
POOLWAIT	PoolWait	DBCTL	S	002	POOLWAIT	•	•	•	•	•	•	Elapsed wait time for Pool Space
PORT	PORT	DFHSOCK	A	246	PORTNUM	•	•	•	•	•	•	TCP/IP Port Number
PRCSNAME	BTS Proc	DFHCBTS	C	200	PRCSNAME	•	•	•	•	•	•	BTS Process name
PRCSTYPE	BTS PTyp	DFHCBTS	C	201	PRCSTYPE	•	•	•	•	•	•	BTS Process type
PROGRAM	Program	DFHPROG	C	071	PGMNAME	•	•	•	•	•	•	Program name
PSBNAME	PSB Name	DBCTL	C	001	PSBNAME	•	•	•	•	•	•	PSB Name
PTPWAIT	PTP Wait	DFHTASK	S	285	PTPWAIT	•	•	•	•	•	•	3270 Bridge Partner wait time
QRCPU	QR CPU	DFHTASK	S	256	QRCPUT	•	•	•	•	•	•	CICS QR TCB CPU time
QRDISPT	QR Disp	DFHTASK	S	255	QRDISPT	•	•	•	•	•	•	CICS QR TCB dispatch time
QRDSPRTO	QRDspRto	CICSPA	D	925	QRDSPRTO	•	•	•	•	•	•	QR TCB Dispatch to CPU ratio
QRMODDLY	QRModDly	DFHTASK	S	249	QRMODDLY	•	•	•	•	•	•	CICS QR TCB redispach wait time
RATEMIN	RateMin	CICSPA	D	926	RATEMIN	•	•	•	•	•	•	Transaction rate per minute
RATESEC	RateSec	CICSPA	D	927	RATESEC	•	•	•	•	•	•	Transaction rate per second
RECCOUNT	RecCount	DFHCICS	A	131	PERRECNT	•	•	•	•	•	•	Task Performance record count
RELEASE	Rlse	CICSPA	C	909	RELEASE	•	•	•	•	•	•	CICS release
REPLCALL	REPLcall	DBCTL	A	016	REPLCALL	•	•	•	•	•	•	Number of Database REPL calls issued
RESFLDNM	RESFLDNM	CICSPA	I	008	RESFLDNM	•	•	•	•	•	•	Resource field name
RESFLDVA	RESFLDVA	CICSPA	I	009	RESFLDVA	•	•	•	•	•	•	Resource field value
RESPONSE	Response	CICSPA	D	901	RESP	•	•	•	•	•	•	Transaction response time
RLSCPU	RLS CPU	DFHFILE	S	175	RLSCPUT	•	•	•	•	•	•	RLS File Request CPU (SRB) time
RLSWAIT	RLS Wait	DFHFILE	S	174	RLSWAIT	•	•	•	•	•	•	RLS File I/O wait time
RLUNAME	RLUNAME	DFHTERM	C	198	RLUNAME	•	•	•	•	•	•	VTAM LUALIAS Logical Unit name
RMICPSM	RMI CPSM	DFHRMI	S	007	RMICPSM	•	•	•	•	•	•	RMI elapsed time for CICSplex SM requests
RMIDB2	RMI DB2	DFHRMI	S	003	RMIDB2	•	•	•	•	•	•	RMI elapsed time for DB2 requests
RMIDBCTL	RMIDBCTL	DFHRMI	S	004	RMIDBCTL	•	•	•	•	•	•	RMI elapsed time for DBCTL requests
RMIEXDLI	RMIEXDLI	DFHRMI	S	005	RMIEXDLI	•	•	•	•	•	•	RMI elapsed time for EXEC DLI requests
RMIMQM	RMI MQ	DFHRMI	S	006	RMIMQM	•	•	•	•	•	•	RMI elapsed time for WebSphere MQ requests
RMIOOTHER	RMI Othr	DFHRMI	S	002	RMIOOTHER	•	•	•	•	•	•	RMI other elapsed time
RMIOTIME	RMIOTime	CICSPA	D	911	RMIOTIME	•	•	•	•	•	•	Resource Manager Interface (RMI) other time
RMISUSP	RMI Susp	DFHTASK	S	171	RMISUSP	•	•	•	•	•	•	Resource Manager Interface (RMI) suspend time
RMITCPIP	RMITCPIP	DFHRMI	S	008	RMITCPIP	•	•	•	•	•	•	RMI elapsed time for TCP/IP socket requests
RMITIME	RMI Elap	DFHTASK	S	170	RMITIME	•	•	•	•	•	•	Resource Manager Interface (RMI) elapsed time
RMITOTAL	RMITotal	DFHRMI	S	001	RMITOTAL	•	•	•	•	•	•	RMI total elapsed time
RMUOWID	RMUOWID	DFHTASK	C	132	RMUOWID	•	•	•	•	•	•	Recovery UOW ID
ROCPU	RO CPU	DFHTASK	S	270	ROCPUT	•	•	•	•	•	•	CICS RO TCB CPU time

Table 18. Cross-reference: CICS PA field name × CICS version (continued)

		CMF field				CICS version						
CICS PA field name	Column heading	Group	Type	ID	Name	6	6	6	6	6	6	Description
						4	5	6	7	8	9	
						0	0	0	0	0	0	
RODISPT	RO Disp	DFHTASK	S	269	RODISPT	•	•	•	•	•	•	CICS RO TCB dispatch time
ROMODDLY	ROModDly	DFHTASK	S	348	ROMODDLY	–	–	–	–	•	•	Other CICS TCB Mode redispach wait time
RPTCLASS	RptClass	DFHCICS	C	168	RPTCLASS	•	•	•	•	•	•	WLM Report Class
RQPWAIT	RQP Wait	DFHTASK	S	193	RQPWAIT	•	•	•	•	•	•	Request Processor Wait Time
RQRWAIT	RQR Wait	DFHTASK	S	192	RQRWAIT	•	•	•	•	•	•	Request Receiver Wait Time
RRMSWAIT	RRMSWait	DFHTASK	S	191	RRMSWAIT	•	•	•	•	•	•	Resource Recovery Services indoubt wait time
RSYSID	RSID	DFHCICS	C	130	RSYSID	•	•	•	•	•	•	Remote System ID
RTYPE	RTyp	DFHCICS	C	112	RTYPE	•	•	•	•	•	•	Performance record type
RUNTRWTT	BTSRunWt	DFHTASK	S	195	RUNTRWTT	•	•	•	•	•	•	BTS run Process/Activity wait time
S8CPU	S8 CPU	DFHTASK	S	261	S8CPUT	•	•	•	•	•	•	CICS S8 TCB CPU time
SC24CGET	SC24CGet	DFHSTOR	A	117	SCCGETCT	•	•	•	•	•	•	CDSA GETMAINs below 16MB
SC24CHWM	SC24CHWM	DFHSTOR	A	116	SC24CHWM	•	•	•	•	•	•	CDSA HWM below 16MB
SC24COCC	SC24COcc	DFHSTOR	A	118	SC24COCC	•	•	•	•	•	•	CDSA Storage Occupancy below 16MB
SC24FSHR	SC24FShr	DFHSTOR	A	146	SC24FSHR	•	•	•	•	•	•	CDSA/SDSA storage FREEMAINED below 16MB
SC24GSHR	SC24GShr	DFHSTOR	A	145	SC24GSHR	•	•	•	•	•	•	CDSA/SDSA storage GETMAINED below 16MB
SC24SGET	SC24SGet	DFHSTOR	A	144	SC24SGCT	•	•	•	•	•	•	CDSA/SDSA GETMAINs below 16MB
SC24UGET	SC24UGet	DFHSTOR	A	054	SCUGETCT	•	•	•	•	•	•	UDSA GETMAINs below 16MB
SC24UHWM	SC24UHWM	DFHSTOR	A	033	SCUSRHWM	•	•	•	•	•	•	UDSA HWM below 16MB
SC24UOCC	SC24UOcc	DFHSTOR	A	095	SCUSRSTG	•	•	•	•	•	•	UDSA Storage Occupancy below 16MB
SC31CGET	SC31CGet	DFHSTOR	A	120	SCCGETCT	•	•	•	•	•	•	ECDSA GETMAINs above 16MB
SC31CHWM	SC31CHWM	DFHSTOR	A	119	SC31CHWM	•	•	•	•	•	•	ECDSA HWM above 16MB
SC31COCC	SC31COcc	DFHSTOR	A	121	SC31COCC	•	•	•	•	•	•	ECDSA Storage Occupancy above 16MB
SC31FSHR	SC31FShr	DFHSTOR	A	149	SC31FSHR	•	•	•	•	•	•	ECDSA/ESDSA storage FREEMAINED above 16MB
SC31GSHR	SC31GShr	DFHSTOR	A	148	SC31GSHR	•	•	•	•	•	•	ECDSA/ESDSA storage GETMAINED above 16MB
SC31SGET	SC31SGet	DFHSTOR	A	147	SC31SGCT	•	•	•	•	•	•	ECDSA/ESDSA GETMAINs above 16MB
SC31UGET	SC31UGet	DFHSTOR	A	105	SCUGETCT	•	•	•	•	•	•	EUDSA GETMAINs above 16MB
SC31UHWM	SC31UHWM	DFHSTOR	A	106	SCUSRHWM	•	•	•	•	•	•	EUDSA HWM above 16MB
SC31UOCC	SC31UOcc	DFHSTOR	A	107	SCUCRSTG	•	•	•	•	•	•	EUDSA Storage Occupancy above 16MB
SC64CGET	SC64CGet	DFHSTOR	A	441	SC64CGCT	–	–	–	–	•	•	GCDSA GETMAINs above the bar
SC64CHWM	SC64CHWM	DFHSTOR	A	442	SC64CHWM	–	–	–	–	•	•	GCDSA HWM above the bar
SC64FSHR	SC64FShr	DFHSTOR	A	447	SC64FSHR	–	–	–	–	•	•	GCDSA/GSDSA storage FREEMAINED above the bar
SC64GSHR	SC64GShr	DFHSTOR	A	446	SC64GSHR	–	–	–	–	•	•	GCDSA/GSDSA storage GETMAINED above the bar
SC64SGET	SC64SGet	DFHSTOR	A	445	SC64SGCT	–	–	–	–	•	•	GCDSA/GSDSA GETMAINs above the bar
SC64UGET	SC64UGet	DFHSTOR	A	443	SC64UGCT	–	–	–	–	•	•	GUDSA GETMAINs above the bar
SC64UHWM	SC64UHWM	DFHSTOR	A	444	SC64UHWM	–	–	–	–	•	•	GUDSA HWM above the bar
SCHEDEND	SchedEnd	DBCTL	T	034	SCHEDEND	•	•	•	•	•	•	IMS Schedule end time
SCHEDSTA	SchedSta	DBCTL	T	033	SCHEDSTA	•	•	•	•	•	•	IMS Schedule start time
SCHTELAP	SchTELap	DBCTL	S	004	SCHTELAP	•	•	•	•	•	•	Elapsed time for Schedule Process
SESSTYPE	SessType	DFHTERM	A	165	TERMINFO	•	•	•	•	•	•	Terminal session type
SOBYDECT	SockDcry	DFH SOCK	A	243	SOBYDECT	•	•	•	•	•	•	Secure Socket bytes decrypted count
SOBYENCT	SockEcry	DFH SOCK	A	242	SOBYENCT	•	•	•	•	•	•	Secure Socket bytes encrypted count
SOCHRIN	SOChrIn	DFH SOCK	A	295	SOCHRIN	•	•	•	•	•	•	Outbound Sockets characters received count
SOCHRIN1	SOChrIn1	DFH SOCK	A	302	SOCHRIN1	•	•	•	•	•	•	Inbound Sockets characters received count
SOCHROU1	SOChrOu1	DFH SOCK	A	304	SOCHROU1	•	•	•	•	•	•	Inbound Sockets characters sent count
SOCHROUT	SOChrOut	DFH SOCK	A	297	SOCHROUT	•	•	•	•	•	•	Outbound Sockets characters sent count
SOCIPHER	SOCipher	DFH SOCK	C	320	SOCIPHER	–	–	–	–	•	•	Inbound SSL connection Cipher suite code
SOCNPSCT	SOCNPSRq	DFH SOCK	A	290	SOCNPSCT	•	•	•	•	•	•	Create Non-Persistent Outbound Socket reqs
SOCPSCT	SOCPSReq	DFH SOCK	A	291	SOCPSCT	•	•	•	•	•	•	Create Persistent Outbound Socket requests
SOEXTRCT	SOEXTRAC	DFH SOCK	A	289	SOEXTRCT	•	•	•	•	•	•	EXTRACT TCP/IP and CERTIFICATE requests
SOMODDLY	SOModDly	DFHTASK	S	349	SOMODDLY	–	–	–	–	•	•	CICS SO TCB redispach wait time



Table 18. Cross-reference: CICS PA field name × CICS version (continued)

CICS PA field name	Column heading	CMF field		CICS version						Description
		Group	Type	ID	Name	6	6	6	6	
						4	5	6	7	
						0	0	0	0	
SOMSGIN1	SOMsgIn1	DFH SOCK	A	301	SOMSGIN1	•	•	•	•	Inbound Sockets RECEIVE requests
SOMSGOU1	SOMsgOu1	DFH SOCK	A	303	SOMSGOU1	•	•	•	•	Inbound Sockets SEND requests
SONPSHWM	SONPSHWM	DFH SOCK	A	292	SONPSHWM	•	•	•	•	Non-Persistent Outbound Socket HWM
SOPSHWM	SOPSHWM	DFH SOCK	A	293	SOPSHWM	•	•	•	•	Persistent Outbound Socket HWM
SORCV	SO Recv	DFH SOCK	A	294	SORCVCT	•	•	•	•	Outbound Sockets RECEIVE requests
SOSEND	SO SEND	DFH SOCK	A	296	SOSENDCT	•	•	•	•	Outbound Sockets SEND requests
SOTOTAL	SO Total	DFH SOCK	A	298	SOTOTCT	•	•	•	•	Socket Total requests
SOWAIT	SockWait	DFH SOCK	S	241	SOIOWTT	•	•	•	•	Inbound Socket I/O wait time
SPEIPCT	SpeIPct	CICSPA	D	938	SPEIPCT	–	–	–	•	% specialty processor CPU based on interval
SPEPCT	SpePct	CICSPA	D	934	SPEPCT	–	–	–	•	% specialty processor CPU time
SRVCLASS	SrvClass	DFHCICS	C	167	SRVCLASS	•	•	•	•	WLM Service Class
START	Start	DFHCICS	T	005	START	•	•	•	•	Task start time
STCPIPCT	StCPIPct	CICSPA	D	939	STCPIPCT	–	–	–	•	% std CP not offld eligible based on interval
STCPPCT	StCPPct	CICSPA	D	935	STCPPCT	–	–	–	•	% standard CP CPU time not offload eligible
STOP	Stop	DFHCICS	T	006	STOP	•	•	•	•	Task stop time
STYPE	SC	DFHTASK	C	004	TTYPER	•	•	•	•	Transaction start type
SUPRREQ	SUPRREQ	OMCICS	S	018	SUPRREQ	•	•	•	•	OMEGAMON monitored Supra requests
SUPRWARN	SUPRWARN	OMCICS	C	007	SUPRWARN	•	•	•	•	OMEGAMON Supra Limit Warning
SUSPEND	Suspend	DFHTASK	S	014	SUSPTIME	•	•	•	•	Suspend time
SYNCDLY	SYNC Dly	DFHSYNC	S	196	SYNCDLY	•	•	•	•	SYNCPOINT parent request wait time
SYNCPT	SYNCPT	DFHSYNC	A	060	SPSYNCCT	•	•	•	•	SYNCPOINT requests
SYNCTIME	SYNCProc	DFHSYNC	S	173	SYNCTIME	•	•	•	•	SYNCPOINT processing time
SZALLCTO	SZAlotO	DFHFEPI	A	157	SZALLCTO	•	•	•	•	Allocate conversation time-out count
SZALLO	SZALLO	DFHFEPI	A	150	SZALLOCT	•	•	•	•	Conversations allocated count
SZCHRI	SZChrIn	DFHFEPI	A	155	SZCHRI	•	•	•	•	FEPI characters received count
SZCHROUT	SZChrOut	DFHFEPI	A	154	SZCHROUT	•	•	•	•	FEPI characters sent count
SZRCV	SZRCV	DFHFEPI	A	151	SZRCVCT	•	•	•	•	FEPI RECEIVE requests
SZRCVTO	SZRecvTO	DFHFEPI	A	158	SZRCVTO	•	•	•	•	Receive Data time-out count
SZSEND	SZSEND	DFHFEPI	A	152	SZSENDCT	•	•	•	•	FEPI SEND requests
SZSTART	SZSTART	DFHFEPI	A	153	SZSTRCT	•	•	•	•	FEPI START requests
SZTOTAL	SZ Total	DFHFEPI	A	159	SZTOTCT	•	•	•	•	FEPI API and SPI requests
SZWAIT	SZ Wait	DFHFEPI	S	156	SZWAIT	•	•	•	•	FEPI services wait time
T8CPU	T8 CPU	DFHTASK	S	400	T8CPUT	–	–	•	•	CICS T8 TCB CPU time
TASKCNT	#Tasks	CICSPA	X	902	TASKCNT	•	•	•	•	Total Task count
TASKNO	TaskNo	DFHTASK	P	031	TRANNUM	•	•	•	•	Transaction identification number
TASKTCNT	#TTasks	CICSPA	X	914	TASKTCNT	•	•	•	•	Total Task Termination count
TCALLO	TCALLO	DFHTERM	A	069	TCALLOCT	•	•	•	•	TCTTE ALLOCATE requests
TCALWTT	TCAlWait	DFHTERM	S	343	TCALWTT	–	–	–	•	MRO allocate session wait time
TCBATTCT	TCBAAtch	DFHTASK	A	251	TCBATTCT	•	•	•	•	TCBs attached count
TCC62IN2	TCC62In2	DFHTERM	A	137	TCC62IN2	•	•	•	•	LU6.2 characters received count
TCC62OU2	TCC62Ou2	DFHTERM	A	138	TCC62OU2	•	•	•	•	LU6.2 characters sent count
TCLASNM	TCLName	DFHTASK	C	166	TCLNAME	•	•	•	•	Transaction Class name
TCLDELAY	TCLDelay	DFHTASK	S	126	TCLDELAY	•	•	•	•	First dispatch TCLSNAME wait time
TCM62IN2	TCM62In2	DFHTERM	A	135	TCM62IN2	•	•	•	•	LU6.2 messages received count
TCM62OU2	TCM62Ou2	DFHTERM	A	136	TCM62OU2	•	•	•	•	LU6.2 messages sent count
TCPSRVCE	TCPIP Srv	DFH SOCK	C	245	TCPSRVCE	•	•	•	•	TCP/IP Service Name
TCWAIT	TC Wait	DFHTERM	S	009	TCIOWTT	•	•	•	•	Terminal wait for input time
TDELWTT	TDELWait	DFHDEST	S	404	TDELWTT	–	–	–	•	Extrapartition transient data lock wait time
TDGET	TDGET	DFHDEST	A	041	TDGETCT	•	•	•	•	Transient data GET requests
TDILWTT	TDILWait	DFHDEST	S	403	TDILWTT	–	–	–	•	Intrapartition transient data lock wait time
TDPURGE	TDPURGE	DFHDEST	A	043	TDPURCT	•	•	•	•	Transient data PURGE requests
TDPUT	TDPUT	DFHDEST	A	042	TDPUTCT	•	•	•	•	Transient data PUT requests
TDTOTAL	TD Total	DFHDEST	A	091	TDTOTCT	•	•	•	•	Transient data Total requests
TDWAIT	TD Wait	DFHDEST	S	101	TDIOWTT	•	•	•	•	VSAM transient data I/O wait time
TERM	Term	DFHTERM	C	002	TERM	•	•	•	•	Terminal ID
TERMCNNM	ConnName	DFHTERM	C	169	TERMCNNM	•	•	•	•	Terminal session Connection name

Table 18. Cross-reference: CICS PA field name × CICS version (continued)

CICS PA field name	Column heading	CMF field		CICS version						Description
		Group	Type	ID	Name	6	6	6	6	
						4	5	6	7	
						0	0	0	0	
TERMCODE	Dev Type	DFHTERM	A	165	TERMINFO	•	•	•	•	Terminal Device Type
TERMINFO	TermInfo	DFHTERM	A	165	TERMINFO	•	•	•	•	Terminal information
TESTDEQS	TestDEQs	DBCTL	A	020	TESTDEQS	•	•	•	•	Number of Test Dequeues
TESTENQS	TestENQs	DBCTL	A	018	TESTENQS	•	•	•	•	Number of Test Enqueues
TESTENQW	TestENQW	DBCTL	A	019	TESTENQW	•	•	•	•	Number of waits on Test Enqueues
THREDCPU	ThredCPU	DBCTL	S	032	THREDCPU	•	•	•	•	Thread TCB CPU time
THRSHOPR	THRSHOPR	CICSPA	I	006	THRSHOPR	•	•	•	•	Threshold operator
THRSHVAL	THRSHVAL	CICSPA	I	007	THRSHVAL	•	•	•	•	Threshold value
TIASKTCT	ASKTimCt	DFHCICS	A	405	TIASKTCT	–	–	•	•	ASKTIME requests
TITOTCT	TITOTcT	DFHCICS	A	406	TITOTCT	–	–	•	•	ASKTIME
TOTCPU	Tot CPU	CICSPA	D	918	TOTCPU	•	•	•	•	Total Task CPU Time
TOTRECS	TotlRecs	CICSPA	A	001	TOTRECS	•	•	•	•	Cross-System Total record count
TRAN	Tran	DFHTASK	C	001	TRAN	•	•	•	•	Transaction identifier
TRANFLAG	TranFlag	DFHTASK	A	164	TRANFLAG	•	•	•	•	Transaction flags
TRANPRTY	Prty	DFHTASK	A	109	TRANPRI	•	•	•	•	Transaction priority
TRANROUT	TranRout	CICSPA	A	003	TRANROUT	•	•	•	•	Cross-System Transaction Routing records
TRANSTAT	TranStat	DFHTASK	C	164	TRANFLAG	•	•	•	•	Transaction Status
TRANTYPE	TranType	DFHTASK	C	164	TRANFLAG	•	•	•	•	Transaction type
TRNGRPID	Group ID	DFHTASK	C	082	TRNGRPID	•	•	•	•	Transaction Group ID
TSGET	TSGET	DFHTEMP	A	044	TSGETCT	•	•	•	•	Temporary Storage GET requests
TSPUTAUX	TSPUTAux	DFHTEMP	A	046	TSPUTACT	•	•	•	•	Auxiliary TS PUT requests
TSPUTMCT	TSPUTMai	DFHTEMP	A	047	TSPUTMCT	•	•	•	•	Main TS PUT requests
TSQNAME	TSQ Name	CICSPA	C	917	TSQNAME	•	•	•	•	Temporary Storage Queue Name
TSSHWAIT	TSShWait	DFHTEMP	S	178	TSSHWAIT	•	•	•	•	Asynchronous Shared TS wait time
TSTOTAL	TS Total	DFHTEMP	A	092	TSTOTCT	•	•	•	•	TS Total requests
TSWAIT	TS Wait	DFHTEMP	S	011	TSIOWTT	•	•	•	•	VSAM TS I/O wait time
UE1WARN	UE1WARN	OMCICS	C	014	UE1WARN	•	•	•	•	OMEGAMON User Event Limit Warning
UOWCONTS	UOWConts	DBCTL	A	030	UOWCONTS	•	•	•	•	Number of UOW Contentions
UOWID	UOW ID	CICSPA	C	912	UOWID	•	•	•	•	Network UOW ID
UOWSEQ	UOW Seq	CICSPA	C	913	UOWSEQ	•	•	•	•	Network UOW Sequence Number
UPDTDEQS	UpdtDEQs	DBCTL	A	023	UPDTDEQS	•	•	•	•	Number of Update Dequeues
UPDTENQS	UpdtENQs	DBCTL	A	021	UPDTENQS	•	•	•	•	Number of Update Enqueues
UPDTENQW	UpdtENQW	DBCTL	A	022	UPDTENQW	•	•	•	•	Number of waits on Update Enqueues
USERID	Userid	DFHCICS	C	089	USERID	•	•	•	•	User ID
USREVNT	USREVNT	OMCICS	S	020	USREVNT	•	•	•	•	OMEGAMON User defined events
VSAMWARN	VSAMWARN	OMCICS	C	003	VSAMWARN	•	•	•	•	OMEGAMON VSAM Limit warning
WAITCICS	CICSWait	DFHTASK	S	182	WTCEWAIT	•	•	•	•	CICS ECB wait time
WAITEXT	Ext Wait	DFHTASK	S	181	WTEXWAIT	•	•	•	•	External ECB wait time
WBATMSNM	ATOMSvc	DFHWEBB	C	382	WBATMSNM	–	–	•	•	ATOMSERVICE resource definition name
WBBROWSE	WBBROWSE	DFHWEBB	A	239	WBBRWCT	•	•	•	•	Web Browse requests
WBBRWCT	WBBRWCT	DFHWEBB	A	338	WBBRWCT	•	•	•	•	CICS Web Support BROWSE HTTPHEADER requests
WBCHHRIN	WBChrIn	DFHWEBB	A	232	WBCHHRIN	•	•	•	•	Web characters received count
WBCHHRIN1	WBCHHRIN1	DFHWEBB	A	334	WBCHHRIN1	•	•	•	•	CICS Web Support RECEIVE and CONVERSE chars
WBCHROU1	WBCHROU1	DFHWEBB	A	336	WBCHROU1	•	•	•	•	CICS Web Support SEND and CONVERSE chars
WBCHROUT	WBChrOut	DFHWEBB	A	234	WBCHROUT	•	•	•	•	Web characters sent count
WBEXTRCT	WBEXTRAC	DFHWEBB	A	238	WBEXTRCT	•	•	•	•	Web EXTRACT requests
WBISSFCT	ISSOAPFt	DFHWEBB	A	388	WBISSFCT	–	–	•	•	INVOKE SERVICE request SOAP faults received
WBIWSCT	WBIWSCT	DFHWEBB	A	340	WBIWSCT	•	•	•	•	INVOKE SERVICE and INVOKE WEBSERVICE requests
WBPARSCT	WBPARSCT	DFHWEBB	A	337	WBPARSCT	•	•	•	•	CICS Web Support PARSE URL requests
WBPIPLNM	Pipeline	DFHWEBB	C	381	WBPIPLNM	–	–	•	•	PIPELINE resource definition name
WBPROGNM	Web Prog	DFHWEBB	C	385	WBPROGNM	–	–	•	•	Program name in URIMAP resource definition
WBRCV	WBRCV	DFHWEBB	A	231	WBRCVCT	•	•	•	•	Web RECEIVE requests

Table 18. Cross-reference: CICS PA field name × CICS version (continued)

CICS PA field name	Column heading	CMF field		CICS version						Description		
		Group	Type	ID	Name	6	6	6	6		6	6
						4	5	6	7		8	9
						0	0	0	0	0	0	
WBRCVIN1	WBRCVIN1	DFHWEBB	A	333	WBRCVIN1	•	•	•	•	•	•	CICS Web Support RECEIVE and CONVERSE requests
WBREAD	WB READ	DFHWEBB	A	224	WBREADCT	•	•	•	•	•	•	Web READ requests
WBREDOCT	WBREDOCT	DFHWEBB	A	331	WBREDOCT	•	•	•	•	•	•	CICS Web Support READ HTTPHEADER requests
WBREPRCT	WBRepoRd	DFHWEBB	A	236	WBREPRCT	•	•	•	•	•	•	Web Temporary Storage Repository read requests
WBREPRDL	WBREPRDL	DFHWEBB	A	341	WBREPRDL	•	•	•	•	•	•	Repository Read data length
WBREPWCT	WBRepoWr	DFHWEBB	A	237	WBREPWCT	•	•	•	•	•	•	Web Temporary Storage Repository write requests
WBREPWDL	WBREPWDL	DFHWEBB	A	342	WBREPWDL	•	•	•	•	•	•	Repository Write data length
WBSEND	WBSEND	DFHWEBB	A	233	WBSENDCT	•	•	•	•	•	•	Web SEND requests
WBSFCRCT	SOAPFtCr	DFHWEBB	A	386	WBSFCRCT	–	–	•	•	•	•	SOAPFAULT CREATE requests
WBSFTOCT	SOAPFalt	DFHWEBB	A	387	WBSFTOCT	–	–	•	•	•	•	SOAPFAULT ADD
WBSNDOU1	WBSNDOU1	DFHWEBB	A	335	WBSNDOU1	•	•	•	•	•	•	CICS Web Support SEND and CONVERSE requests
WBSREQBL	SOAPRqBL	DFHWEBB	A	390	WBSREQBL	–	–	•	•	•	•	SOAP request SOAP body length
WBSRSPBL	SOAPRsBL	DFHWEBB	A	392	WBSRSPBL	–	–	•	•	•	•	SOAP response SOAP body length
WBSVCENM	WebSrvC	DFHWEBB	C	383	WBSVCENM	–	–	•	•	•	•	WEBSERVICE resource definition name
WBSVOPNM	WebSrvOp	DFHWEBB	C	384	WBSVOPNM	–	–	•	•	•	•	WEBSERVICE operation name
WBTOTAL	WB Total	DFHWEBB	A	235	WBTOTWCT	•	•	•	•	•	•	Web Total requests
WBURIMNM	URI Map	DFHWEBB	C	380	WBURIMNM	–	–	•	•	•	•	URIMAP resource definition name
WBWRITE	WB WRITE	DFHWEBB	A	225	WBWRITCT	•	•	•	•	•	•	Web WRITE requests
WBWRTOCT	WBWRTOCT	DFHWEBB	A	332	WBWRTOCT	•	•	•	•	•	•	CICS Web Support WRITE HTTPHEADER requests
WMQASRBT	WMQSRBtm	DFHDATA	S	397	WMQASRBT	–	–	•	•	•	•	WebSphere MQ API SRB CPU time
WMQGETWT	WMQGetWt	DFHDATA	S	396	WMQGETWT	–	•	•	•	•	•	WebSphere MQ GETWAIT wait time
WMQREQCT	WMQ Reqs	DFHDATA	A	395	WMQREQCT	–	•	•	•	•	•	Number of WebSphere MQ requests
WSACBLCT	WSACBld	DFHWEBB	A	420	WSACBLCT	–	–	•	•	•	•	WSACONTEXT BUILD requests
WSACGTCT	WSACGet	DFHWEBB	A	421	WSACGTCT	–	–	•	•	•	•	WSACONTEXT GET requests
WSAEPCT	WSAEPCT	DFHWEBB	A	422	WSAEPCT	–	–	•	•	•	•	WSAEP CREATE requests
WSATOTCT	WSAddr	DFHWEBB	A	423	WSATOTCT	–	–	•	•	•	•	Total Web Services Addressing requests
X8CPU	X8 CPU	DFHTASK	S	271	X8CPUT	•	•	•	•	•	•	CICS X8 TCB CPU time
X9CPU	X9 CPU	DFHTASK	S	272	X9CPUT	•	•	•	•	•	•	User task X9 Mode CPU time



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## Chapter 30. Fields by forms, HDB templates

The following cross-reference table lists the CICS PA field names for CICS monitoring facility (CMF) performance class and transaction resource class data and shows the report forms and HDB templates to which they apply.

Some columns in the table require explanation:

### CICS PA field name

The name used in report forms, HDB templates, and selection criteria (and their corresponding batch command operands **FIELDS** and **SELECT**).

A blank indicates that the field is not available, typically because it is a very long field, or it is an unprintable field such as a unit-of-work or a flag.

### Report form and HDB template

The report forms and HDB templates to which a field applies:

- Yes, the field applies
- S** Yes, the field applies and is an eligible sort field (in a report form) or key field (in an HDB template)
- No, the field does not apply

### Type

Indicates the data type of the field:

- A** 32-bit or 64-bit count
- C** Character string
- D** Time derived by CICS PA
- P** Packed decimal integer
- S** Clock
- T** STCK time stamp
- X** Count calculated by CICS PA

### Length

The default length in the output report or data set.

Clock (S) fields have two components, each of length 8:

#### COUNT

Number of occurrences

**TIME** Elapsed time in seconds with specified precision 0.0001 - 0.000001, default format *sss.thmi*

Time Stamp (T) fields vary in length (5 - 19) depending on the specified format:

#### TIMET

Time in the format *hh:mm:ss.thm*

#### TIMEM

Time in the format *hh:mm*

#### TIMES

Time in the format *hh:mm:ss*

**DATE** Date in the format *mm/dd/yyyy*

#### DATEISO

Date in the format *yyyy-mm-dd*

#### DATM

Date in the format *mm/dd*

#### DATEYR

Date in the format *mm/dd/yy*

## DATETIM

Date and time in the format *yyyy-mm-dd hh:mm:ss*

### Note:

1. Some special fields, such as APPLID and RESPONSE, are not defined in the CMF Dictionary and are given a group name of "CICSPA". These fields are either derived from the fixed section of the CMF record (for example, APPLID), or calculated from two or more other CMF fields (for example, RESPONSE).
2. The FILENAME, TSQNAME, and DPLNAME fields are only available when CMF transaction resource class data is being collected.
3. The APPLTRAN and APPLPROG fields are only available when application programs invoke the application naming event monitoring points.

Table 19. Cross-reference: fields × forms, HDB templates

CICS PA field name	CMF field				Report form		HDB template		Description	
	Group	Type	ID	Length	T	X	Y	T		Y
					L	I	M	L	S	
					I	S	A	I	A	
					S	T	R	S	R	
					T	X	Y	T	Y	
	DFHCBTS	C	202	52	–	–	–	–	–	BTS Root Activity identifier
	DFHCBTS	C	203	52	–	–	–	–	–	BTS Activity identifier
	DFHTASK	C	064	4	–	–	–	–	–	Task error flags
	DFHTASK	C	190	16	–	–	–	–	–	RRMS/MVS unit-of-recovery ID (URID)
ABCODEC	DFHPROG	C	114	4	•	S	S	•	S	Current ABEND code
ABCODEO	DFHPROG	C	113	4	•	S	S	•	S	Original ABEND Code
ACAPPLNM	DFHTASK	C	451	64	•	S	S	•	S	Application context application name
ACAPPLVR	CICSPA	C	933	14	•	S	S	•	S	Application context application version
ACCMETH	DFHTERM	A	165	4	•	S	–	•	–	Terminal Access Method
ACMAJVER	DFHTASK	C	453	8	•	S	S	•	S	Application context application major version
ACMICVER	DFHTASK	C	455	8	•	S	S	•	S	Application context application micro version
ACMINVER	DFHTASK	C	454	8	•	S	S	•	S	Application context application minor version
ACOPERNM	DFHTASK	C	456	64	•	S	S	•	S	Application context operation name
ACPLATNM	DFHTASK	C	452	64	•	S	S	•	S	Application context platform name
ACTVTYNM	DFHCBTS	C	204	16	•	S	–	•	–	BTS Activity name
ADABREQ	OMCICS	S	017	8	•	S	•	•	•	OMEGAMON monitored Adabas requests
ADABWARN	OMCICS	C	005	4	•	S	S	•	S	OMEGAMON Adabas Limit Warning
ALERT	CICSPA	A	915	8	–	–	•	–	–	Total Alert count or percentage
ALERTDEF	CICSPA	I	010	8	–	–	–	–	–	Alert Definition name
ALRTACTV	CICSPA	I	005	8	–	–	–	–	–	Alert actual field value
ALRTFLD	CICSPA	I	003	8	–	–	–	–	–	Alert field Name
ALRTFLDT	CICSPA	I	003	8	–	–	–	–	–	Alert field type
ALRTSEQ#	CICSPA	I	001	8	–	–	–	–	–	Alert Sequence Number
ALRTSEV	CICSPA	I	002	8	–	–	–	–	–	Alert Severity
APPLID	CICSPA	C	903	8	•	S	S	S	S	CICS Generic APPLID
APPLPROG	DFHAPPL	C	001	8	•	S	S	•	S	Application naming Program
APPLRECS	CICSPA	A	002	8	•	•	•	•	•	Cross-System Application records
APPLTRAN	DFHAPPL	C	001	4	•	S	S	•	S	Application naming Tran ID
BAACDCCT	DFHCBTS	A	217	4	•	S	•	•	•	BTS Activity Data Containers requests
BAACQPCT	DFHCBTS	A	214	4	•	S	•	•	•	BTS Acquire Process/Activity requests
BADACTCT	DFHCBTS	A	209	4	•	S	•	•	•	BTS Define Activity requests
BADCPACT	DFHCBTS	A	213	4	•	S	•	•	•	BTS Cancel Process/Activity requests
BADFIECT	DFHCBTS	A	220	4	•	S	•	•	•	BTS Define-Input Event requests
BADPROCT	DFHCBTS	A	208	4	•	S	•	•	•	BTS Define Process requests
BALKPACT	DFHCBTS	A	207	4	•	S	•	•	•	BTS Link Process/Activity count
BAPRDCCT	DFHCBTS	A	216	4	•	S	•	•	•	BTS Process Data Containers requests
BARASYCT	DFHCBTS	A	206	4	•	S	•	•	•	BTS asynchronous Process/Activity count

CICS PA field name	CMF field				Report form					HDB template		Description
	Group	Type	ID	Length	L I S T T X	L I S T Y	S U M M A R Y	L I S T Y	S U M M A R Y			
BARATECT	DFHCBTS	A	219	4	•	S	•	•	•	BTS Retrieve-Reattach Event requests		
BARMFACT	DFHCBTS	A	212	4	•	S	•	•	•	BTS Resume Process/Activity requests		
BARSPACT	DFHCBTS	A	210	4	•	S	•	•	•	BTS Reset Process/Activity requests		
BARSYNCT	DFHCBTS	A	205	4	•	S	•	•	•	BTS synchronous Process/Activity count		
BASUPACT	DFHCBTS	A	211	4	•	S	•	•	•	BTS Suspend Process/Activity requests		
BATIAECT	DFHCBTS	A	221	4	•	S	•	•	•	BTS TIMER Event requests		
BATOTCCT	DFHCBTS	A	218	4	•	S	•	•	•	BTS Process/Activity Data Container requests		
BATOTECT	DFHCBTS	A	222	4	•	S	•	•	•	BTS Event-related requests		
BATOTPCT	DFHCBTS	A	215	4	•	S	•	•	•	BTS Total Process/Activity requests		
BFDGSTCT	DFHCICS	A	408	4	•	S	•	•	•	Built-in function BIF DIGEST requests		
BFTOTCT	DFHCICS	A	409	4	•	S	•	•	•	Total Built-in (BIF) function requests		
BMSIN	DFHMAPP	A	051	4	•	S	•	•	•	BMS IN requests		
BMSMAP	DFHMAPP	A	050	4	•	S	•	•	•	BMS MAP requests		
BMSOUT	DFHMAPP	A	052	4	•	S	•	•	•	BMS OUT requests		
BMSTOTAL	DFHMAPP	A	090	4	•	S	•	•	•	BMS Total requests		
BRDGTTRAN	DFHTASK	C	124	4	•	S	–	•	–	Bridge Listener Transaction ID		
CALLWARN	OMCICS	C	013	4	•	S	S	•	S	OMEGAMON EXEC Calls Limit Warning		
CBSRVNRM	DFHEJBS	C	311	4	•	S	S	S	S	CorbaServer name		
CECMCHTP	DFHTASK	C	430	4	•	S	S	•	S	CEC machine type		
CECMDLID	DFHTASK	C	431	16	•	S	S	•	S	CEC model number		
CECMTYPE	CICSPA	C	932	21	•	S	S	–	–	CEC machine type and model number		
CFCAPICT	DFHCICS	A	025	4	•	S	•	•	•	OO Foundation Class requests		
CFDTSYNC	DFHSYNC	S	177	8	•	S	•	•	•	CF Data Table syncpoint wait time		
CFDTWAIT	DFHFILE	S	176	8	•	S	•	•	•	CF Data Table access requests wait time		
CHARIN1	DFHTERM	A	083	4	•	S	•	•	•	Terminal characters received count		
CHARIN2	DFHTERM	A	085	4	•	S	•	•	•	LU6.1 characters received count		
CHAROUT1	DFHTERM	A	084	4	•	S	•	•	•	Terminal characters sent count		
CHAROUT2	DFHTERM	A	086	4	•	S	•	•	•	LU6.1 characters sent count		
CLIENTIP	DFH SOCK	C	244	16	•	S	–	•	–	Client or Telnet IP address		
CLIP6ADR	DFH SOCK	C	318	40	•	S	–	•	–	Client or Telnet IP address		
CLIPPORT	DFH SOCK	A	330	4	•	S	–	•	–	Client IP Port Number		
COMMWAIT	CICSPA	D	906	8	•	S	–	•	–	Communications wait time		
CPU	DFHTASK	S	008	8	•	S	•	•	•	CPU time		
CPUIPCT	CICSPA	D	937	8	–	–	•	–	–	% CPU time based on interval		
CPUISSPE	CICSPA	D	929	8	•	S	•	•	•	CPU time that is offload eligible		
CPUONCP	DFHTASK	S	436	12	•	S	•	•	•	CPU time on standard CP		
CPUONCPE	DFHTASK	S	437	4	•	S	•	•	•	Offload eligible CPU time on standard CP		
CPUONCPN	CICSPA	D	931	8	•	S	•	•	•	CPU time on standard CP not offload eligible		
CPUONSP	CICSPA	D	930	8	•	S	•	•	•	CPU time on Specialty Processor		
CPUSU	CICSPA	D	943	8	•	S	•	•	•	CPU Service Units		
CPUWARN	OMCICS	C	009	4	•	S	S	•	S	OMEGAMON CPU Limit Warning		
CURTASKS	DFHTASK	C	434	8	•	S	S	•	S	Current tasks value at task start		
DB2CONWT	DFHDATA	S	188	8	•	S	•	•	•	DB2 Connection wait time		
DB2RDYQW	DFHDATA	S	187	8	•	S	•	•	•	DB2 Thread wait time		
DB2REQCT	DFHDATA	A	180	8	•	S	•	•	•	DB2 requests		
DB2WAIT	DFHDATA	S	189	8	•	S	•	•	•	DB2 SQL/IFI wait time		
DB2WARN	OMCICS	C	001	4	•	S	S	•	S	OMEGAMON DB2 Limit Warning		
DBGETS	DBCTL	A	035	8	•	S	•	•	•	Number of Database Get calls issued		
DBIOCALL	DBCTL	A	007	8	•	S	•	•	•	Number of Database I/Os		
DBIOELAP	DBCTL											

Table 19. Cross-reference: fields × forms, HDB templates (continued)

CICS PA field name	CMF field				Report form		HDB template		Description	
	Group	Type	ID	Length	L I S T T X	L I S T Y	S U M A R Y	S U M A R Y		
DCOMREQ	OMCICS	S	019	8	•	S	•	•	OMEGAMON monitored CA-Datacom requests	
DCOMWARN	OMCICS	C	008	4	•	S	S	•	S	OMEGAMON CA-Datacom Limit Warning
DEDBBFRW	DBCTL	A	031	8	•	S	•	•	•	Number of waits for DEDB buffers
DEDBCALL	DBCTL	A	027	8	•	S	•	•	•	Number of DEDB calls
DEDBRDOP	DBCTL	A	028	8	•	S	•	•	•	Number of DEDB read operations
DHCREATE	DFHDOCH	A	226	4	•	S	•	•	•	Document Handler CREATE requests
DHDELETE	DFHDOCH	A	223	4	•	S	•	•	•	Document Handler DELETE requests
DHINSERT	DFHDOCH	A	227	4	•	S	•	•	•	Document Handler INSERT requests
DHRETRVE	DFHDOCH	A	229	4	•	S	•	•	•	Document Handler RETRIEVE requests
DHSET	DFHDOCH	A	228	4	•	S	•	•	•	Document Handler SET requests
DHTOTAL	DFHDOCH	A	230	4	•	S	•	•	•	Document Handler Total requests
DHTOTDCL	DFHDOCH	A	240	4	•	S	•	•	•	Total length of all documents created
DISPATCH	DFHTASK	S	007	8	•	S	•	•	•	Dispatch time
DISPWAIT	DFHTASK	S	102	8	•	S	•	•	•	Redispatch wait time
DLETCALL	DBCTL	A	015	8	•	S	•	•	•	Number of Database DLET calls issued
DLICALLS	DBCTL	A	017	8	•	S	•	•	•	Total DL/I Database calls
DLIWARN	OMCICS	C	002	4	•	S	S	•	S	OMEGAMON DLI Limit Warning
DPLNAME	CICSPA	C	919	8	–	–	–	–	–	Distributed program link name
DPLRECS	CICSPA	A	005	8	•	•	•	•	•	Cross-System DPL records
DSAWARN	OMCICS	C	011	4	•	S	S	•	S	OMEGAMON DSA Limit Warning
DSCHMDLY	DFHTASK	S	247	8	•	S	•	•	•	Redispatch wait time caused by change-TCB mode
DSMMSCWT	DFHTASK	S	279	8	•	S	•	•	•	DS storage constraint wait time
DSPDELAY	DFHTASK	S	125	8	•	S	•	•	•	First dispatch wait time
DSTCBHWM	DFHTASK	A	252	4	•	S	•	•	•	CICS Dispatcher TCB HWM
DSTCBMWT	DFHTASK	S	268	8	•	S	•	•	•	Dispatcher TCB Mismatch wait time
ECEFOPT	DFHCICS	A	416	4	•	S	•	•	•	Event Filter operations
ECEVNTCT	DFHCICS	A	417	4	•	S	•	•	•	Events captured
ECSEVCCT	DFHCICS	A	418	4	•	S	•	•	•	Synchronous Emission Events captured
ECSIGECT	DFHCICS	A	415	4	•	S	•	•	•	SIGNAL EVENT requests
EDSAWARN	OMCICS	C	012	4	•	S	S	•	S	OMEGAMON EDSA Limit Warning
EICTOTCT	DFHCICS	A	402	4	•	S	•	•	•	EXEC CICS requests
EJBACTIV	DFHEJBS	A	312	4	•	S	•	•	•	Number of Bean State Activation requests
EJBCREAT	DFHEJBS	A	314	4	•	S	•	•	•	Number of Bean Creation requests
EJBMETHD	DFHEJBS	A	316	4	•	S	•	•	•	Number of EJB Method Calls
EJBPASIV	DFHEJBS	A	313	4	•	S	•	•	•	Number of Bean State Passivation requests
EJBREMOV	DFHEJBS	A	315	4	•	S	•	•	•	Number of Bean Removal requests
EJBTOTAL	DFHEJBS	A	317	4	•	S	•	•	•	Total Number of EJB requests
ELAPWARN	OMCICS	C	010	4	•	S	S	•	S	OMEGAMON Elapsed Time Limit Warning
ENQDELAY	DFHTASK	S	129	8	•	S	•	•	•	Local Enqueue wait time
ENQSDLY	CICSPA	D	924	8	•	•	•	•	•	Total ENQ wait time
ERRFLAGS	DFHTASK	A	064	4	•	•	–	•	–	Task error flags
EXCLDEQS	DBCTL	A	026	8	•	S	•	•	•	Number of Exclusive Dequeues
EXCLENQS	DBCTL	A	024	8	•	S	•	•	•	Number of Exclusive Enqueues
EXCLENQW	DBCTL	A	025	8	•	S	•	•	•	Number of waits on Exclusive Enqueues
EXWAIT	DFHCICS	S	103	8	•	S	•	•	•	Exception Conditions wait time
FCADD	DFHFILE	A	039	4	•	S	•	•	•	File ADD requests
FCAMCT	DFHFILE	A	070	4	•	S	•	•	•	File access-method requests
FCBROWSE	DFHFILE	A	038	4	•	S	•	•	•	File Browse requests
FCDELETE	DFHFILE	A	040	4	•	S	•	•	•	File DELETE requests
FCGET	DFHFILE	A	036	4	•	S	•	•	•	File GET requests
FCPUT	DFHFILE	A	037	4	•	S	•	•	•	File PUT requests
FCTOTAL	DFHFILE	A	093	4	•	S	•	•	•	File Control requests



Table 19. Cross-reference: fields × forms, HDB templates (continued)

CICS PA field name	CMF field				Report form		HDB template		Description	
	Group	Type	ID	Length	T	X	Y	T		Y
FCTY	DFHTASK	C	163	4	•	S	S	•	S	Transaction Facility name
FCTYTYPE	DFHTASK	C	164	8	•	S	–	•	–	Transaction facility type
FCVSWTT	DFHFILE	S	427	8	•	S	•	•	•	VSAM string wait time
FCWAIT	DFHFILE	S	063	8	•	S	•	•	•	File I/O wait time
FCXCWTT	DFHFILE	S	426	8	•	S	•	•	•	VSAM exclusive control wait time
FILENAME	CICSPA	C	916	8	–	–	–	–	–	File name
FUNCSHIP	CICSPA	A	004	8	•	•	•	•	•	Cross-System Function Shipping records
GHNCALL	DBCTL	A	012	8	•	S	•	•	•	Number of Database GHN calls issued
GHNPCALL	DBCTL	A	013	8	•	S	•	•	•	Number of Database GHNP calls issued
GHUCALL	DBCTL	A	011	8	•	S	•	•	•	Number of Database GHU calls issued
GIVEUPWT	DFHTASK	S	184	8	•	S	•	•	•	Give up control wait time
GNCALL	DBCTL	A	009	8	•	S	•	•	•	Number of Database GN calls issued
GNPCALL	DBCTL	A	010	8	•	S	•	•	•	Number of Database GNP calls issued
GNQDELAY	DFHTASK	S	123	8	•	S	•	•	•	Global Enqueue wait time
GUCALL	DBCTL	A	008	8	•	S	•	•	•	Number of Database GU calls issued
ICDELAY	DFHTASK	S	183	8	•	S	•	•	•	Interval Control (IC) wait time
ICPUT	DFHTASK	A	059	4	•	S	•	•	•	Interval Control START or INITIATE requests
ICSTACCT	DFHTASK	A	065	8	•	S	•	•	•	Local IC START requests with CHANNEL option
ICSTACDL	DFHTASK	A	345	8	•	S	•	•	•	Container data len for Local IC START w/ CHANNEL
ICSTRCCT	DFHTASK	A	346	8	•	S	•	•	•	Remote IC START requests with CHANNEL option
ICSTRCDL	DFHTASK	A	347	8	•	S	•	•	•	Container data len for Remot IC START w/ CHANNEL
ICTOTAL	DFHTASK	A	066	4	•	S	•	•	•	Interval Control requests
IDMSREQ	OMCICS	S	016	8	•	S	•	•	•	OMEGAMON monitored CA-IDMS requests
IDMSWARN	OMCICS	C	006	4	•	S	S	•	S	OMEGAMON CA-IDMS Limit Warning
IMSREQCT	DFHDATA	A	179	4	•	S	•	•	•	IMS (DBCTL) requests
IMSWAIT	DFHDATA	S	186	8	•	S	•	•	•	IMS (DBCTL) wait time
INTCWAIT	DBCTL	S	003	8	•	S	•	•	•	Elapsed wait time for Intent Conflict
IOWAIT	CICSPA	D	907	8	•	S	–	•	–	Total IO wait time
IRESP	CICSPA	D	908	8	•	S	•	–	•	Transaction internal response time
IRWAIT	DFHTERM	S	100	8	•	S	•	•	•	MRO link wait time
ISALLOC	DFH SOCK	A	288	4	•	S	•	•	•	Allocate Session requests for sessions on IP
ISALWTT	DFH SOCK	S	319	8	•	S	•	•	•	IPIC allocate session wait time
ISIPICNM	DFH SOCK	C	305	8	•	S	S	•	S	Name of IPCONN definition that attached the task
ISRTCALL	DBCTL	A	014	8	•	S	•	•	•	Number of Database ISRT calls issued
ISWAIT	DFH SOCK	S	300	8	•	S	•	•	•	IPCONN link wait time
J8CPU	DFHTASK	S	260	8	•	S	•	•	•	CICS J8 TCB CPU time
J9CPU	DFHTASK	S	267	8	•	S	•	•	•	User task J9 Mode CPU time
JCWAIT	DFHJOUR	S	010	8	•	S	•	•	•	Journal I/O wait time
JNLPUT	DFHJOUR	A	058	4	•	S	•	•	•	Journal write requests
JOBNAME	CICSPA	C	905	8	•	S	S	•	S	Job Name
JVMITIME	DFHTASK	S	273	8	•	S	•	•	•	JVM initialize elapsed time
JVMMTIME	CICSPA	D	910	8	•	S	•	•	•	JVM Method time
JVMRTIME	DFHTASK	S	275	8	•	S	•	•	•	JVM reset elapsed time
JVMSUSP	DFHTASK	S	254	8	•	S	•	•	•	JVM suspend time
JVMTHDWT	DFHTASK	S	401	8	•	S	•	•	•	JVM server thread wait time
JVMTIME	DFHTASK	S	253	8	•	S	•	•	•	JVM elapsed time
KY8CPU	DFHTASK	S	263	8	•	S	•	•	•	CICS Key 8 TCB CPU time
KY8DISPT	DFHTASK	S	262	8	•	S	•	•	•	CICS Key 8 TCB dispatch time
KY9CPU	DFHTASK	S	265	8	•	S	•	•	•	User task Key 9 Mode CPU time
KY9DISPT	DFHTASK	S	264	8	•	S	•	•	•	User task Key 9 Mode Dispatch time
L8CPU	DFHTASK	S	259	8	•	S	•	•	•	CICS L8 TCB CPU time
L9CPU	DFHTASK	S	266	8	•	S	•	•	•	User task L9 CPU time

Table 19. Cross-reference: fields × forms, HDB templates (continued)

CICS PA field name	CMF field				Report form						HDB template		Description
	Group	Type	ID	Length	T	X	Y	T	Y				
LOCKDLAY	DFHTASK	S	128	8	•	S	•	•	•	•	•	Lock Manager (LM) wait time	
LOCKSDLY	CICSPA	D	923	8	•	•	•	•	•	•	•	Total Lock wait time and Enqueue delay time	
LOCKWAIT	CICSPA	D	922	8	•	•	•	•	•	•	•	Total Lock wait time	
LOGWRITE	DFHJOUR	A	172	4	•	S	•	•	•	•	•	Log Stream write requests	
LU61WAIT	DFHTERM	S	133	8	•	S	•	•	•	•	•	LU6.1 wait time	
LU62WAIT	DFHTERM	S	134	8	•	S	•	•	•	•	•	LU6.2 wait time	
LUNAME	DFHTERM	C	111	8	•	S	S	•	S	•	S	VTAM logical unit name	
MAXHTDLY	DFHTASK	S	278	8	•	S	•	•	•	•	•	Maximum Hot-Pooling TCB delay time	
MAXJTDLY	DFHTASK	S	277	8	•	S	•	•	•	•	•	Maximum JVM TCB delay time	
MAXOTDLY	DFHTASK	S	250	8	•	S	•	•	•	•	•	Maximum Open TCB delay time	
MAXSTDLY	DFHTASK	S	281	8	•	S	•	•	•	•	•	Maximum SSL TCB delay time	
MAXTASKS	DFHTASK	C	433	8	•	S	S	•	S	•	S	Current MAXTASKS (MXT) value at task start	
MAXTTDLY	DFHTASK	S	283	8	•	S	•	•	•	•	•	Maximum JVM server thread TCB delay time	
MAXXTDLY	DFHTASK	S	282	8	•	S	•	•	•	•	•	Maximum XPLink TCB delay time	
MLXMLTCT	DFHWEBB	A	413	4	•	S	•	•	•	•	•	Application data TRANSFORM requests	
MLXSSCTM	DFHWEBB	S	411	8	•	S	•	•	•	•	•	z/OS XML System Services CPU time	
MLXSSTD	DFHWEBB	A	412	4	•	S	•	•	•	•	•	Document length parsed - z/OS System Services	
MPPRTXCD	DFHCICS	A	449	4	•	S	•	•	•	•	•	Number of policy rule thresholds exceeded	
MQWARN	OMCICS	C	004	4	•	S	S	•	S	•	S	OMEGAMON MQ Limit Warning	
MSCPU	DFHTASK	S	258	8	•	S	•	•	•	•	•	CICS TCBs CPU time	
MSDISPT	DFHTASK	S	257	8	•	S	•	•	•	•	•	CICS TCBs dispatch time	
MSGIN1	DFHTERM	A	034	4	•	S	•	•	•	•	•	Messages received count	
MSGIN2	DFHTERM	A	067	4	•	S	•	•	•	•	•	Messages received from LU6.1	
MSGOUT1	DFHTERM	A	035	4	•	S	•	•	•	•	•	Messages sent count	
MSGOUT2	DFHTERM	A	068	4	•	S	•	•	•	•	•	Messages sent to LU6.1	
MVSID	CICSPA	C	904	4	•	S	S	S	S	S	S	MVS SMF ID	
MXTDELAY	DFHTASK	S	127	8	•	S	•	•	•	•	•	First dispatch MXT wait time	
NATURE	DFHTERM	A	165	4	•	S	–	•	–	•	–	Transaction	
NETID	DFHTERM	C	197	8	•	S	–	•	–	•	–	VTAM LUALIAS Network ID	
NETNAME	DFHTASK	C	097	20	•	S	–	•	–	•	–	Originating System VTAM network name	
NETUOWSX	DFHTASK	C	098	8	–	–	–	–	–	–	–	Network UOW ID	
OADATA1	DFHCICS	C	352	64	•	S	S	•	S	•	S	Originating Adapter data 1	
OADATA2	DFHCICS	C	353	64	•	S	S	•	S	•	S	Originating Adapter data 2	
OADATA3	DFHCICS	C	354	64	•	S	S	•	S	•	S	Originating Adapter data 3	
OADID	DFHCICS	C	351	64	•	S	S	•	S	•	S	Originating Adapter Identifier	
OAPPLID	DFHCICS	C	360	8	•	S	S	•	S	•	S	Originating CICS APPLID	
OCLI6ADR	DFHCICS	C	372	40	•	S	–	•	–	•	–	Originating Client or Telnet IP address	
OCLINTIP	DFHCICS	C	368	16	•	S	–	•	–	•	–	Originating Client or Telnet IP address	
OCLIPORT	DFHCICS	A	369	4	•	S	–	•	–	•	–	Originating Client IP Port Number	
OFCTY	DFHCICS	C	371	8	•	S	S	•	S	•	S	Originating Transaction Facility name	
OFCTYTP	DFHCICS	C	370	8	•	S	–	•	–	•	–	Originating Transaction Facility Type	
OFFLIPCT	CICSPA	D	942	8	–	–	•	–	–	•	–	% offld elig CPU time on std CP based on intrvl	
OFFLPCT	CICSPA	D	941	8	–	–	•	–	–	•	–	% offload eligible CPU time on standard CP	
OFLDIPCT	CICSPA	D	940	8	–	–	•	–	–	•	–	% offload eligible CPU time based on interval	
OFLDPCT	CICSPA	D	936	8	–	–	•	–	–	•	–	% offload eligible CPU time	
OMEGWORK	OMCICS	C	015	32	•	S	S	•	S	•	S	OMEGAMON User work area	
OMODDLY	CICSPA	D	928	8	•	•	•	•	•	•	•	Other CICS TCB Mode redispach wait time	
ONETWKID	DFHCICS	C	359	8	•	S	S	•	S	•	S	Originating Network ID	
OORIGIN	DFHCICS	C	370	8	•	S	S	•	S	•	S	Originating Transaction Origin type	
OPORT	DFHCICS	A	367	4	•	S	–	•	–	•	–	Originating TCP/IP Port Number	
ORIGIN	DFHTASK	C	164	8	•	S	S	•	S	•	S	Transaction origin type	
OSLATNCY	CICSPA	D	920	8	•	S	•	•	•	•	•	Task start latency since Origin task start	

Table 19. Cross-reference: fields × forms, HDB templates (continued)

CICS PA field name	CMF field				Report form					HDB template		Description
	Group	Type	ID	Length	T	X	Y	T	Y			
OSOWAIT	DFH SOCK	S	299	8	•	S	•	•	•	Outbound Socket I/O Wait Time		
OSTART	DFHCICS	T	361	8	•	S	S	•	S	Originating Task start time		
OTASKNO	DFHCICS	P	362	4	•	S	–	•	–	Originating Transaction number		
OTCPSRVC	DFHCICS	C	366	8	•	S	S	•	S	Originating TCP/IP Service Name		
OTRAN	DFHCICS	C	363	4	•	S	S	•	S	Originating Transaction identifier		
OTRANFLG	DFHCICS	A	370	16	•	S	–	•	–	Originating Transaction flags		
OTRANTYP	DFHCICS	C	370	8	•	•	–	•	–	Originating Transaction type		
OTSID	DFHTASK	C	194	128	–	–	–	–	–	OTS Transaction ID		
OTSINDWT	DFHSYNC	S	199	8	•	S	•	•	•	OTS Indoubt Wait time		
OUSERCOR	DFHCICS	C	365	64	•	S	S	•	S	Originating User Correlator		
OUSERID	DFHCICS	C	364	8	•	S	S	•	S	Originating User ID		
OVFLBFRU	DBCTL	A	029	8	•	S	•	•	•	Number of Overflow Buffers used		
PC24BHW	DFHSTOR	A	108	4	•	S	•	•	•	Program Storage HWM below 16MB		
PC24CHW	DFHSTOR	A	143	4	•	S	•	•	•	Program Storage (CDSA) HWM below 16MB		
PC24RHW	DFHSTOR	A	162	4	•	S	•	•	•	Program Storage (RDSA) HWM below 16MB		
PC24SHW	DFHSTOR	A	160	4	•	S	•	•	•	Program Storage (SDSA) HWM below 16MB		
PC31AHW	DFHSTOR	A	139	4	•	S	•	•	•	Program Storage HWM above 16MB		
PC31CHW	DFHSTOR	A	142	4	•	S	•	•	•	Program Storage (ECDSA) HWM above 16MB		
PC31RHW	DFHSTOR	A	122	4	•	S	•	•	•	Program Storage (ERDSA) HWM above 16MB		
PC31SHW	DFHSTOR	A	161	4	•	S	•	•	•	Program Storage (ESDSA) HWM above 16MB		
PCDLCRDL	DFHPROG	A	287	8	•	S	•	•	•	Container data length for DPL RETURN w/ CHANNEL		
PCDLCSDL	DFHPROG	A	286	8	•	S	•	•	•	Container data length for DPL reqs with CHANNEL		
PCDPL	DFHPROG	A	073	4	•	S	•	•	•	Distributed Program Link (DPL) requests		
PCDPLCCT	DFHPROG	A	308	8	•	S	•	•	•	DPL requests with CHANNEL option		
PCLINK	DFHPROG	A	055	4	•	S	•	•	•	Program LINK requests		
PCLNKCCCT	DFHPROG	A	306	8	•	S	•	•	•	LINK requests with CHANNEL option		
PCLOAD	DFHPROG	A	057	4	•	S	•	•	•	Program LOAD requests		
PCLOADTM	DFHPROG	S	115	8	•	S	•	•	•	Program Library wait time		
PCLURM	DFHPROG	A	072	4	•	S	•	•	•	Program LINK URM requests		
PCRTNCCT	DFHPROG	A	309	8	•	S	•	•	•	Program RETURN requests with CHANNEL option		
PCRTNCDL	DFHPROG	A	310	8	•	S	•	•	•	Container data length for RETURN with CHANNEL		
PCSTGHW	DFHSTOR	A	087	4	•	S	•	•	•	Program Storage HWM above and below 16MB		
PCXCLCCT	DFHPROG	A	307	8	•	S	•	•	•	XCTL requests with CHANNEL option		
PCXCTL	DFHPROG	A	056	4	•	S	•	•	•	Program XCTL requests		
PGBRWCCT	DFHCHNL	A	322	8	•	S	•	•	•	BROWSE CHANNEL CONTAINER requests		
PGCRECCT	DFHCHNL	A	328	8	•	S	•	•	•	Number of Containers created		
PGCSTHW	DFHCHNL	A	329	4	•	S	–	•	–	Maximum Container Storage allocated to task		
PGGETCCT	DFHCHNL	A	323	8	•	S	•	•	•	GET CHANNEL CONTAINER requests		
PGGETCDL	DFHCHNL	A	326	8	•	S	•	•	•	GET CHANNEL CONTAINER data length		
PGMOVCCCT	DFHCHNL	A	325	8	•	S	•	•	•	MOVE CHANNEL CONTAINER requests		
PGPUTCCT	DFHCHNL	A	324	8	•	S	•	•	•	PUT CHANNEL CONTAINER requests		
PGPUTCDL	DFHCHNL	A	327	8	•	S	•	•	•	PUT CHANNEL CONTAINER data length		
PGTOTCCT	DFHCHNL	A	321	8	•	S	•	•	•	Total number of CHANNEL CONTAINER requests		
PHAPPLID	DFHCICS	C	374	8	•	S	S	•	S	Previous Hop Data APPLID		
PHCOUNT	DFHCICS	A	378	4	•	S	•	•	•	Previous Hop Data Count		
PHLATNCY	CICSPA	D	921	8	•	S	•	•	•	Previous Hop latency time		
PHNTWKID	DFHCICS	C	373	8	•	S	S	•	S	Previous Hop Data Network ID		
PHSTART	DFHCICS	T	375	8	•	S	–	•	–	Previous Hop Data Task Start		
PHTASKNO	DFHCICS	P	376	4	•	S	–	•	–	Previous Hop Data Transaction Number		
PHTRAN	DFHCICS	C	377	4	•	S	S	•	S	Previous Hop Data Transaction ID		
PILOCKEL	DBCTL	S	006	8	•	S	•	•	•	Elapsed time for PI Locking		
POOLWAIT	DBCTL	S	002	8	•	S	•	•	•	Elapsed wait time for Pool Space		

Table 19. Cross-reference: fields × forms, HDB templates (continued)

CICS PA field name	CMF field				Report form		HDB template		Description	
	Group	Type	ID	Length	L I S T	L I S T	S U M A R Y	S U M A R Y		
PORT	DFH SOCK	A	246	8	•	S	–	•	–	TCP/IP Port Number
PRCSNAME	DFHC BTS	C	200	36	•	•	–	•	–	BTS Process name
PRCSTYPE	DFHC BTS	C	201	8	•	•	S	•	S	BTS Process type
PROGRAM	DFH PROG	C	071	8	•	S	S	S	S	Program name
PSBNAME	DBCTL	C	001	8	•	S	S	S	S	PSB Name
PTPWAIT	DFHTASK	S	285	8	•	S	•	•	•	3270 Bridge Partner wait time
QRCPU	DFHTASK	S	256	8	•	S	•	•	•	CICS QR TCB CPU time
QRDISPT	DFHTASK	S	255	8	•	S	•	•	•	CICS QR TCB dispatch time
QRDSPRTO	CICSPA	D	925	8	•	•	–	•	–	QR TCB Dispatch to CPU ratio
QRMODDLY	DFHTASK	S	249	8	•	S	•	•	•	CICS QR TCB redispach wait time
RATEMIN	CICSPA	D	926	4	–	–	•	–	•	Transaction rate per minute
RATESEC	CICSPA	D	927	4	–	–	•	–	•	Transaction rate per second
RECCOUNT	DFHCICS	A	131	4	•	S	•	•	•	Task Performance record count
RELEASE	CICSPA	C	909	4	•	S	S	•	S	CICS release
REPLCALL	DBCTL	A	016	8	•	S	•	•	•	Number of Database REPL calls issued
RESFLDNM	CICSPA	I	008	8	–	–	–	–	–	Resource field name
RESFLDVA	CICSPA	I	009	8	–	–	–	–	–	Resource field value
RESPONSE	CICSPA	D	901	8	•	S	•	•	•	Transaction response time
RLSCPU	DFH FILE	S	175	8	•	S	•	•	•	RLS File Request CPU (SRB) time
RLSWAIT	DFH FILE	S	174	8	•	S	•	•	•	RLS File I/O wait time
RLUNAME	DFH TERM	C	198	8	•	S	S	•	S	VTAM LU ALIAS Logical Unit name
RMICPSM	DFHRMI	S	007	8	•	S	•	•	•	RMI elapsed time for CICSplex SM requests
RMIDB2	DFHRMI	S	003	8	•	S	•	•	•	RMI elapsed time for DB2 requests
RMIDBCTL	DFHRMI	S	004	8	•	S	•	•	•	RMI elapsed time for DBCTL requests
RMIEXDLI	DFHRMI	S	005	8	•	S	•	•	•	RMI elapsed time for EXEC DLI requests
RMIMQM	DFHRMI	S	006	8	•	S	•	•	•	RMI elapsed time for WebSphere MQ requests
RMIOTHER	DFHRMI	S	002	8	•	S	•	•	•	RMI other elapsed time
RMIOTIME	CICSPA	D	911	8	•	S	•	•	•	Resource Manager Interface (RMI) other time
RMISUSP	DFHTASK	S	171	8	•	S	•	•	•	Resource Manager Interface (RMI) suspend time
RMITCPIP	DFHRMI	S	008	8	•	S	•	•	•	RMI elapsed time for TCP/IP socket requests
RMITIME	DFHTASK	S	170	8	•	S	•	•	•	Resource Manager Interface (RMI) elapsed time
RMITOTAL	DFHRMI	S	001	8	•	S	•	•	•	RMI total elapsed time
RMUOWID	DFHTASK	C	132	16	•	S	–	•	–	Recovery UOW ID
ROCPU	DFHTASK	S	270	8	•	S	•	•	•	CICS RO TCB CPU time
RODISPT	DFHTASK	S	269	8	•	S	•	•	•	CICS RO TCB dispatch time
ROMODDLY	DFHTASK	S	348	8	•	S	•	•	•	Other CICS TCB Mode redispach wait time
RPTCLASS	DFHCICS	C	168	8	•	S	S	•	S	WLM Report Class
RQPWAIT	DFHTASK	S	193	8	•	S	•	•	•	Request Processor Wait Time
RQRWAIT	DFHTASK	S	192	8	•	S	•	•	•	Request Receiver Wait Time
RRMSWAIT	DFHTASK	S	191	8	•	S	•	•	•	Resource Recovery Services indoubt wait time
RSYSID	DFHCICS	C	130	4	•	S	S	•	S	Remote System ID
RTYPE	DFHCICS	C	112	4	•	•	–	•	–	Performance record type
RUNTRWTT	DFHTASK	S	195	8	•	S	•	•	•	BTS run Process/Activity wait time
S8CPU	DFHTASK	S	261	8	•	S	•	•	•	CICS S8 TCB CPU time
SC24CGET	DFHSTOR	A	117	4	•	S	•	•	•	CDSA GETMAINs below 16MB
SC24CHWM	DFHSTOR	A	116	4	•	S	•	•	•	CDSA HWM below 16MB
SC24COCC	DFHSTOR	A	118	8	•	S	•	•	•	CDSA Storage Occupancy below 16MB
SC24FSHR	DFHSTOR	A	146	4	•	S	•	•	•	CDSA/SDSA storage FREEMAINED below 16MB
SC24GSHR	DFHSTOR	A	145	4	•	S	•	•	•	CDSA/SDSA storage GETMAINED below 16MB
SC24SGET	DFHSTOR	A	144	4	•	S	•	•	•	CDSA/SDSA GETMAINs below 16MB
SC24UGET	DFHSTOR	A	054	4	•	S	•	•	•	UDSA GETMAINs below 16MB
SC24UHWM	DFHSTOR	A	033	4	•	S	•	•	•	UDSA HWM below 16MB

Table 19. Cross-reference: fields × forms, HDB templates (continued)

CICS PA field name	CMF field				Report form		HDB template		Description	
	Group	Type	ID	Length	L I S T T X Y	L I S T R Y	S U M M A R Y	S U M M A R Y		
SC24UOCC	DFHSTOR	A	095	8	•	S	•	•	UDSA Storage Occupancy below 16MB	
SC31CGET	DFHSTOR	A	120	4	•	S	•	•	ECDSA GETMAINs above 16MB	
SC31CHWM	DFHSTOR	A	119	4	•	S	•	•	ECDSA HWM above 16MB	
SC31COCC	DFHSTOR	A	121	8	•	S	•	•	ECDSA Storage Occupancy above 16MB	
SC31FSHR	DFHSTOR	A	149	4	•	S	•	•	ECDSA/ESDSA storage FREEMAINED above 16MB	
SC31GSHR	DFHSTOR	A	148	4	•	S	•	•	ECDSA/ESDSA storage GETMAINED above 16MB	
SC31SGET	DFHSTOR	A	147	4	•	S	•	•	ECDSA/ESDSA GETMAINs above 16MB	
SC31UGET	DFHSTOR	A	105	4	•	S	•	•	EUDSA GETMAINs above 16MB	
SC31UHWM	DFHSTOR	A	106	4	•	S	•	•	EUDSA HWM above 16MB	
SC31UOCC	DFHSTOR	A	107	8	•	S	•	•	EUDSA Storage Occupancy above 16MB	
SC64CGET	DFHSTOR	A	441	4	•	S	•	•	GCDSA GETMAINs above the bar	
SC64CHWM	DFHSTOR	A	442	4	•	S	•	•	GCDSA HWM above the bar	
SC64FSHR	DFHSTOR	A	447	4	•	S	•	•	GCDSA/GSDSA storage FREEMAINED above the bar	
SC64GSHR	DFHSTOR	A	446	4	•	S	•	•	GCDSA/GSDSA storage GETMAINED above the bar	
SC64SGET	DFHSTOR	A	445	4	•	S	•	•	GCDSA/GSDSA GETMAINs above the bar	
SC64UGET	DFHSTOR	A	443	4	•	S	•	•	GUDSA GETMAINs above the bar	
SC64UHWM	DFHSTOR	A	444	4	•	S	•	•	GUDSA HWM above the bar	
SCHEDEND	DBCTL	T	034	8	•	–	–	•	–	IMS Schedule end time
SCHEDSTA	DBCTL	T	033	8	•	–	–	•	–	IMS Schedule start time
SCHTELAP	DBCTL	S	004	8	•	S	•	•	•	Elapsed time for Schedule Process
SESSTYPE	DFHTERM	A	165	4	•	•	–	•	–	Terminal session type
SOBYDECT	DFHSOCK	A	243	4	•	S	•	•	•	Secure Socket bytes decrypted count
SOBYENCT	DFHSOCK	A	242	4	•	S	•	•	•	Secure Socket bytes encrypted count
SOCHRIN	DFHSOCK	A	295	8	•	S	•	•	•	Outbound Sockets characters received count
SOCHRIN1	DFHSOCK	A	302	8	•	S	•	•	•	Inbound Sockets characters received count
SOCHROU1	DFHSOCK	A	304	8	•	S	•	•	•	Inbound Sockets characters sent count
SOCHROUT	DFHSOCK	A	297	8	•	S	•	•	•	Outbound Sockets characters sent count
SOCIPHER	DFHSOCK	C	320	8	•	S	S	•	S	Inbound SSL connection Cipher suite code
SOCNPST	DFHSOCK	A	290	8	•	S	•	•	•	Create Non-Persistent Outbound Socket reqs
SOCPSCT	DFHSOCK	A	291	8	•	S	•	•	•	Create Persistent Outbound Socket requests
SOEXTRCT	DFHSOCK	A	289	8	•	S	•	•	•	EXTRACT TCP/IP and CERTIFICATE requests
SOMODDLY	DFHTASK	S	349	8	•	S	•	•	•	CICS SO TCB redispatch wait time
SOMSGIN1	DFHSOCK	A	301	8	•	S	•	•	•	Inbound Sockets RECEIVE requests
SOMSGOU1	DFHSOCK	A	303	8	•	S	•	•	•	Inbound Sockets SEND requests
SONPSHWM	DFHSOCK	A	292	8	•	S	•	•	•	Non-Persistent Outbound Socket HWM
SOPSHWM	DFHSOCK	A	293	8	•	S	•	•	•	Persistent Outbound Socket HWM
SORCV	DFHSOCK	A	294	8	•	S	•	•	•	Outbound Sockets RECEIVE requests
SOSEND	DFHSOCK	A	296	8	•	S	•	•	•	Outbound Sockets SEND requests
SOTOTAL	DFHSOCK	A	298	8	•	S	•	•	•	Socket Total requests
SOWAIT	DFHSOCK	S	241	8	•	S	•	•	•	Inbound Socket I/O wait time
SPEIPCT	CICSPA	D	938	8	–	–	•	–	–	% specialty processor CPU based on interval
SPEPCT	CICSPA	D	934	8	–	–	•	–	–	% specialty processor CPU time
SRVCLASS	DFHCICS	C	167	8	•	S	S	•	S	WLM Service Class
START	DFHCICS	T	005	8	•	S	S	S	S	Task start time
STCPIPCT	CICSPA	D	939	8	–	–	•	–	–	% std CP not offld eligible based on interval
STCPPCT	CICSPA	D	935	8	–	–	•	–	–	% standard CP CPU time not offload eligible
STOP	DFHCICS	T	006	8	•	S	S	S	S	Task stop time
STYPE	DFHTASK	C	004	2	•	S	–	•	–	Transaction start type
SUPRREQ	OMCICS	S	018	8	•	S	•	•	•	OMEGAMON monitored Supra requests
SUPRWARN	OMCICS	C	007	4	•	S	S	•	S	OMEGAMON Supra Limit Warning
SUSPEND	DFHTASK	S	014	8	•	S	•	•	•	Suspend time
SYNCDLY	DFHSYNC	S	196	8	•	S	•	•	•	SYNCPOINT parent request wait time

Table 19. Cross-reference: fields × forms, HDB templates (continued)

CICS PA field name	CMF field				Report form		HDB template		Description			
	Group	Type	ID	Length	L I S T T X	L I S T Y	S U M A R Y	S U M A R Y				
							T	X		Y	T	Y
SYNCPT	DFHSYNC	A	060	4	•	S	•	•	•	SYNCPPOINT requests		
SYNCTIME	DFHSYNC	S	173	8	•	S	•	•	•	SYNCPPOINT processing time		
SZALLCTO	DFHFEPI	A	157	4	•	S	•	•	•	Allocate conversation time-out count		
SZALLOC	DFHFEPI	A	150	4	•	S	•	•	•	Conversations allocated count		
SZCHRIN	DFHFEPI	A	155	4	•	S	•	•	•	FEPI characters received count		
SZCHROUT	DFHFEPI	A	154	4	•	S	•	•	•	FEPI characters sent count		
SZRCV	DFHFEPI	A	151	4	•	S	•	•	•	FEPI RECEIVE requests		
SZRCVTO	DFHFEPI	A	158	4	•	S	•	•	•	Receive Data time-out count		
SZSEND	DFHFEPI	A	152	4	•	S	•	•	•	FEPI SEND requests		
SZSTART	DFHFEPI	A	153	4	•	S	•	•	•	FEPI START requests		
SZTOTAL	DFHFEPI	A	159	4	•	S	•	•	•	FEPI API and SPI requests		
SZWAIT	DFHFEPI	S	156	8	•	S	•	•	•	FEPI services wait time		
T8CPU	DFHTASK	S	400	8	•	S	•	•	•	CICS T8 TCB CPU time		
TASKCNT	CICSPA	X	902	4	–	–	•	–	•	Total Task count		
TASKNO	DFHTASK	P	031	4	•	S	–	•	–	Transaction identification number		
TASKTCNT	CICSPA	X	914	4	–	–	•	–	•	Total Task Termination count		
TCALLOC	DFHTERM	A	069	4	•	S	•	•	•	TCTTE ALLOCATE requests		
TCALWTT	DFHTERM	S	343	8	•	S	•	•	•	MRO allocate session wait time		
TCBATTCT	DFHTASK	A	251	8	•	S	•	•	•	TCBs attached count		
TCC62IN2	DFHTERM	A	137	4	•	S	•	•	•	LU6.2 characters received count		
TCC62OU2	DFHTERM	A	138	4	•	S	•	•	•	LU6.2 characters sent count		
TCLASSNM	DFHTASK	C	166	8	•	S	S	•	S	Transaction Class name		
TCLDELAY	DFHTASK	S	126	8	•	S	•	•	•	First dispatch TCLSNAME wait time		
TCM62IN2	DFHTERM	A	135	4	•	S	•	•	•	LU6.2 messages received count		
TCM62OU2	DFHTERM	A	136	4	•	S	•	•	•	LU6.2 messages sent count		
TCPSRVCE	DFHSOCK	C	245	8	•	S	S	•	S	TCP/IP Service Name		
TCWAIT	DFHTERM	S	009	8	•	S	•	•	•	Terminal wait for input time		
TDELWTT	DFHDEST	S	404	8	•	S	•	•	•	Extrapartition transient data lock wait time		
TDGET	DFHDEST	A	041	4	•	S	•	•	•	Transient data GET requests		
TDILWTT	DFHDEST	S	403	8	•	S	•	•	•	Intrapartition transient data lock wait time		
TDPURGE	DFHDEST	A	043	4	•	S	•	•	•	Transient data PURGE requests		
TDPUT	DFHDEST	A	042	4	•	S	•	•	•	Transient data PUT requests		
TDTOTAL	DFHDEST	A	091	4	•	S	•	•	•	Transient data Total requests		
TDWAIT	DFHDEST	S	101	8	•	S	•	•	•	VSAM transient data I/O wait time		
TERM	DFHTERM	C	002	4	•	S	S	•	S	Terminal ID		
TERMCNNM	DFHTERM	C	169	4	•	S	S	•	S	Terminal session Connection name		
TERMCODE	DFHTERM	A	165	4	•	•	–	•	–	Terminal Device Type		
TERMINFO	DFHTERM	A	165	4	•	•	–	•	–	Terminal information		
TESTDEQS	DBCTL	A	020	8	•	S	•	•	•	Number of Test Dequeues		
TESTENQS	DBCTL	A	018	8	•	S	•	•	•	Number of Test Enqueues		
TESTENQW	DBCTL	A	019	8	•	S	•	•	•	Number of waits on Test Enqueues		
THREDCPU	DBCTL	S	032	8	•	S	•	•	•	Thread TCB CPU time		
THRSHOPR	CICSPA	I	006	8	–	–	–	–	–	Threshold operator		
THRSHVAL	CICSPA	I	007	8	–	–	–	–	–	Threshold value		
TIASKTCT	DFHCICS	A	405	4	•	S	•	•	•	ASKTIME requests		
TITOTCT	DFHCICS	A	406	4	•	S	•	•	•	ASKTIME		
TOTCPU	CICSPA	D	918	8	•	S	•	•	•	Total Task CPU Time		
TOTRECS	CICSPA	A	001	8	•	•	•	•	•	Cross-System Total record count		
TRAN	DFHTASK	C	001	4	•	S	S	S	S	Transaction identifier		
TRANFLAG	DFHTASK	A	164	16	•	•	–	•	–	Transaction flags		
TRANPRTY	DFHTASK	A	109	4	•	S	–	•	–	Transaction priority		
TRANROUT	CICSPA	A	003	8	•	•	•	•	•	Cross-System Transaction Routing records		



CICS PA field name	CMF field				Report form		HDB template		Description	
	Group	Type	ID	Length	L I S T X	L I S T Y	S U M M A R Y	S U M M A R Y		
TRANSTAT	DFHTASK	C	164	8	•	•	S	•	S	Transaction Status
TRANSTYPE	DFHTASK	C	164	8	•	•	S	•	S	Transaction type
TRNGRPID	DFHTASK	C	082	28	–	–	–	–	–	Transaction Group ID
TSGET	DFHTEMP	A	044	4	•	S	•	•	•	Temporary Storage GET requests
TSPUTAU	DFHTEMP	A	046	4	•	S	•	•	•	Auxiliary TS PUT requests
TSPUTMCT	DFHTEMP	A	047	4	•	S	•	•	•	Main TS PUT requests
TSQNAME	CICSPA	C	917	8	–	–	–	–	–	Temporary Storage Queue Name
TSSHWAIT	DFHTEMP	S	178	8	•	S	•	•	•	Asynchronous Shared TS wait time
TSTOTAL	DFHTEMP	A	092	4	•	S	•	•	•	TS Total requests
TSWAIT	DFHTEMP	S	011	8	•	S	•	•	•	VSAM TS I/O wait time
UE1WARN	OMCICS	C	014	4	•	S	S	•	S	OMEGAMON User Event Limit Warning
UOWCONTS	DBCTL	A	030	8	•	S	•	•	•	Number of UOW Contentions
UOWID	CICSPA	C	912	12	•	•	S	•	–	Network UOW ID
UOWSEQ	CICSPA	C	913	5	•	•	–	•	–	Network UOW Sequence Number
UPDTDEQS	DBCTL	A	023	8	•	S	•	•	•	Number of Update Dequeues
UPDTENQS	DBCTL	A	021	8	•	S	•	•	•	Number of Update Enqueues
UPDTENQW	DBCTL	A	022	8	•	S	•	•	•	Number of waits on Update Enqueues
USERID	DFHCICS	C	089	8	•	S	S	S	S	User ID
USREVNT	OMCICS	S	020	8	•	S	•	•	•	OMEGAMON User defined events
VSAMWARN	OMCICS	C	003	4	•	S	S	•	S	OMEGAMON VSAM Limit warning
WAITCICS	DFHTASK	S	182	8	•	S	•	•	•	CICS ECB wait time
WAITEXT	DFHTASK	S	181	8	•	S	•	•	•	External ECB wait time
WBATMSNM	DFHWEBB	C	382	8	•	S	S	•	S	ATOMSERVICE resource definition name
WBBROWSE	DFHWEBB	A	239	8	•	S	•	•	•	Web Browse requests
WBBROWCT	DFHWEBB	A	338	8	•	S	•	•	•	CICS Web Support BROWSE HTTPHEADER requests
WBCHRIN	DFHWEBB	A	232	4	•	S	•	•	•	Web characters received count
WBCHRIN1	DFHWEBB	A	334	8	•	S	•	•	•	CICS Web Support RECEIVE and CONVERSE chars
WBCHROU1	DFHWEBB	A	336	8	•	S	•	•	•	CICS Web Support SEND and CONVERSE chars
WBCHROUT	DFHWEBB	A	234	4	•	S	•	•	•	Web characters sent count
WBEXTRCT	DFHWEBB	A	238	8	•	S	•	•	•	Web EXTRACT requests
WBISSFCT	DFHWEBB	A	388	4	•	S	•	•	•	INVOKE SERVICE request SOAP faults received
WBIWSBCT	DFHWEBB	A	340	8	•	S	•	•	•	INVOKE SERVICE and INVOKE WEBSERVICE requests
WBPARSCT	DFHWEBB	A	337	8	•	S	•	•	•	CICS Web Support PARSE URL requests
WBPIPLNM	DFHWEBB	C	381	8	•	S	S	•	S	PIPELINE resource definition name
WBPROGNM	DFHWEBB	C	385	8	•	S	S	•	S	Program name in URIMAP resource definition
WBRCV	DFHWEBB	A	231	4	•	S	•	•	•	Web RECEIVE requests
WBRCVIN1	DFHWEBB	A	333	8	•	S	•	•	•	CICS Web Support RECEIVE and CONVERSE requests
WブレAD	DFHWEBB	A	224	8	•	S	•	•	•	Web READ requests
WBREDOCT	DFHWEBB	A	331	8	•	S	•	•	•	CICS Web Support READ HTTPHEADER requests
WBREPRCT	DFHWEBB	A	236	4	•	S	•	•	•	Web Temporary Storage Repository read requests
WBREPRDL	DFHWEBB	A	341	8	•	S	•	•	•	Repository Read data length
WBREPWCT	DFHWEBB	A	237	4	•	S	•	•	•	Web Temporary Storage Repository write requests
WBREPWDL	DFHWEBB	A	342	8	•	S	•	•	•	Repository Write data length
WBSEND	DFHWEBB	A	233	4	•	S	•	•	•	Web SEND requests
WBSFCRCT	DFHWEBB	A	386	4	•	S	•	•	•	SOAPFAULT CREATE requests
WBSFTOCT	DFHWEBB	A	387	4	•	S	•	•	•	SOAPFAULT ADD
WBSNDU1	DFHWEBB	A	335	8	•	S	•	•	•	CICS Web Support SEND and CONVERSE requests
WBSREQBL	DFHWEBB	A	390	4	•	S	•	•	•	SOAP request SOAP body length
WBSRSPBL	DFHWEBB	A	392	4	•	S	•	•	•	SOAP response SOAP body length
WBSVCENM	DFHWEBB	C								

Table 19. Cross-reference: fields × forms, HDB templates (continued)

CICS PA field name	CMF field				Report form			HDB template		Description
	Group	Type	ID	Length	T	X	Y	T	Y	
WBURIMNM	DFHWEBB	C	380	8	•	S	S	•	S	URIMAP resource definition name
WBWRITE	DFHWEBB	A	225	8	•	S	•	•	•	Web WRITE requests
WBWRTOCT	DFHWEBB	A	332	8	•	S	•	•	•	CICS Web Support WRITE HTTPHEADER requests
WMQASRBT	DFHDATA	S	397	8	•	S	•	•	•	WebSphere MQ API SRB CPU time
WMQGETWT	DFHDATA	S	396	8	•	S	•	•	•	WebSphere MQ GETWAIT wait time
WMQREQCT	DFHDATA	A	395	4	•	S	•	•	•	Number of WebSphere MQ requests
WSACBLCT	DFHWEBB	A	420	4	•	S	•	•	•	WSACONTEXT BUILD requests
WSACGTCT	DFHWEBB	A	421	4	•	S	•	•	•	WSACONTEXT GET requests
WSAEPCT	DFHWEBB	A	422	4	•	S	•	•	•	WSAEPR CREATE requests
WSATOTCT	DFHWEBB	A	423	4	•	S	•	•	•	Total Web Services Addressing requests
X8CPU	DFHTASK	S	271	8	•	S	•	•	•	CICS X8 TCB CPU time
X9CPU	DFHTASK	S	272	8	•	S	•	•	•	User task X9 Mode CPU time



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## Chapter 31. CICS PA-specific fields

CICS PA-specific fields are additional derived fields, such as sums, ratios, and percentages, that are generated by CICS PA based on CMF data. You can use these fields in report forms.

### ACAPPLVR

Application context application version. This character field represents three 4-byte binary values separated by hyphens: ACMAJVER (major version), ACMINVER (minor version), and ACMICVER (micro version).

### ALERT

For Performance Summary alert reporting, the count or percentage total of transactions at the specified alert severity (Critical, Warning, or Info) for the summary key.

### APPLID

CICS generic APPLID.

### APPLRECS

Number of Application records in this Network Unit-of-Work Extract record. All Cross-System Work Extract records include this field.

### CECMTYPE

A concatenation of CECMCHTP (CEC machine type) and CECMDLID (CEC model ID).

### COMMWAIT

Total time value of the communications related fields IRWAIT, ISWAIT, SZWAIT, TCWAIT, LU61WAIT, and LU62WAIT.

### CPUIPCT

The task processor time (USRCPUT) as a percentage of the Summary report time interval (in seconds). It is calculated as:

$$\text{USRCPUT} / \text{Summary Report Time Interval} * 100$$

### CPUISSPE

The task processor time that was eligible for offload to a specialty processor. It is calculated as:

$$\text{CPUONCPE} + (\text{USRCPUT} - \text{CPUONCP})$$

### CPUONCP

The task processor time on a standard processor. It is taken from the value of CPUTONCP (DFHTASK S436).

### CPUONCPE

The task processor time on a standard processor that was eligible for offload to a specialty processor. It is taken from the value of OFFLCPUT (DFHTASK S437).

### CPUONCPN

The task processor time on a standard processor that was not offload eligible. It is calculated as:

$$\text{CPUONCP} - \text{CPUONCPE}$$

### CPUONSP

The task processor time that was offloaded to a specialty processor. It is calculated as:

USRCPUT - CPUONCP

#### **CPUSU**

CPU time expressed in transaction service units. The task USRCPUT (DFHTASK S008) is converted to service units using a conversion factor specified for either the image on which the transaction ran or the input files. It is calculated as:

$\text{USRCPUT} * \text{service unit conversion factor}$

#### **DPLRECS**

Number of Distributed Program Link (DPL) records in this Network Unit-of-Work Extract record. This is a subset of FUNCSHIP, the Function Shipping record count. All Cross-System Work Extract records include this field.

#### **ENQSDLY**

The total elapsed time waiting for a CICS task control local or global enqueue. It is calculated as:

$\text{ENQDELAY} + \text{GNQDELAY}$

#### **FILENAME**

Transaction resource class data only: VSAM file name.

#### **FUNCSHIP**

Number of Function Shipping records in this Network Unit-of-Work Extract record. All Cross-System Work Extract records include this field.

#### **IOWAIT**

Total time value of the I/O wait time fields FCWAIT, JCWAIT, TDWAIT, TSWAIT.

**IRESP** CICS internal response time for the transaction. It is calculated by the difference in the Start and Stop times minus the time spent waiting on the terminal (operator think time).

#### **JOBNAME**

Jobname of the CICS system.

#### **JVMTIME**

JVM method time. This is the elapsed time spent in the CICS JVM by the user task, excluding the JVM initialize and reset elapsed times. It is calculated as:

$\text{JVM elapsed time (JVMTIME)} - \text{JVM init time (JVMITIME)}$   
 $- \text{JVM reset time (JVMRTIME)}$

#### **LOCKSDLY**

The total elapsed time waiting for a CICS task control local enqueue or global enqueue, or waiting to acquire a CICS lock manager (LM) lock on a resource, an intrapartition transient data lock, or an extrapartition transient data lock. It is calculated as:

$\text{ENQDELAY} + \text{GNQDELAY} + \text{LMDELAY} + \text{TDILWTT} + \text{TDELWTT}$

#### **LOCKWAIT**

The total elapsed time that the user task waited to acquire a CICS lock manager (LM) lock on a resource, an intrapartition transient data lock, or an extrapartition transient data lock. It is calculated as:

$\text{LMDELAY} + \text{TDILWTT} + \text{TDELWTT}$

#### **MVSID**

SMF system ID.

**OFFLIPCT**

The total task processor time on standard CP that was eligible for offload to specialty processor (zIIP or zAAP) as a percentage of the Summary report time interval (in seconds). It is calculated as:

$$\text{OFFLCPUT} / \text{Summary Report Time Interval} * 100$$

**OFFLPCT**

The total task processor time on standard CP that was eligible for offload to specialty processor (zIIP or zAAP) as a percentage of the total task processor time (USRCPUT). It is calculated as:

$$\text{OFFLCPUT} / \text{USRCPUT} * 100$$

**OFLDIPCT**

The task processor time that was offload eligible as a percentage of the Summary report time interval (in seconds). It is calculated as:

$$(\text{OFFLCPUT} + (\text{USRCPUT} - \text{CPUTONCP})) / \text{Summary Report Time Interval} * 100$$

**OFLDPCT**

The task processor time that was offload eligible as a percentage of the total task processor time (USRCPUT). It is calculated as:

$$((\text{OFFLCPUT} + (\text{USRCPUT} - \text{CPUTONCP})) / \text{USRCPUT}) * 100$$

**OMODDLY**

(Other Mode Delay) The elapsed time for which the user task waited for redispach on a CICS TCB other than on the CICS QR, RO, and SO mode TCBs. It is calculated as:

$$\text{DISPWT} - (\text{QRMODDLY} + \text{ROMODDLY} + \text{SOMODDLY})$$

**OSLATNCY**

Latency since start of originating transaction. It is calculated as the difference between the Start time of the current transaction and the Start time of the originating transaction.

**PHLATNCY**

Previous hop latency time for the transaction. It is calculated as the difference between the Start time of the current transaction and the Start time of the previous hop transaction.

**QRDSPRTO**

The ratio of QR TCB Dispatch to QR TCB CPU. It is calculated as:

$$(\text{QR CPU} / \text{QR Dispatch}) * 100$$

**RATEMIN**

The transaction rate per minute.

**Note:** Performance alerts for the RATEMIN and RATESEC fields are not included in the ALERT field count. This is because they are based on the summarised data, not on individual transaction alerts. This could result in the ALERT fields showing zeros while in fact the special derived field generates alerts.

**RATESEC**

The transaction rate per second.

**Note:** Performance alerts for the RATEMIN and RATESEC fields are not included in the ALERT field count. This is because they are based on the summarised data, not on individual transaction alerts. This could result in the ALERT fields showing zeros while in fact the special derived field generates alerts.

**RELEASE**

CICS release. For example, CICS TS V4.1 is 660.

**RESPONSE**

CICS response time for the transaction. It is calculated as the difference between the Start and Stop times.

**RMIOTIME**

Elapsed time the task was suspended by the dispatcher while in the Resource Manager Interface (RMI), excluding time waiting for DB2 and IMS. It is calculated as:

$$\text{RMISUSP} - \text{IMSWAIT} - \text{DB2RDYQW} - \text{DB2CONWT} - \text{DB2WAIT}$$

(RMI suspend time - IMS wait time - DB2 readyq wait time - DB2 connection wait time - DB2 wait time)

**SPEIPCT**

The task processor time that was offloaded to specialty processor (USRCPUT – CPUTONCP) as a percentage of the Summary report time interval (in seconds). It is calculated as:

$$(\text{USRCPUT} - \text{CPUTONCP}) / \text{Summary Report Time Interval} * 100$$
**SPEPCT**

The task processor time that was offloaded to specialty processor as a percentage of the total task processor time (USRCPUT). It is calculated as:

$$((\text{USRCPUT} - \text{CPUTONCP}) / \text{USRCPUT}) * 100$$
**STCPIPCT**

The task processor time on standard CP that was not offload eligible as a percentage of the Summary report time interval (in seconds). It is calculated as:

$$(\text{CPUTONCP} - \text{OFFLCPUT}) / \text{Summary Report Time Interval} * 100$$
**STCPPCT**

The task processor time on standard CP that was not offload eligible as a percentage of the total task processor time (USRCPUT). It is calculated as:

$$((\text{CPUTONCP} - \text{OFFLCPUT}) / \text{USRCPUT}) * 100$$
**TASKCNT**

For Summary reporting only: the total number of tasks (CMF records).

**TASKTCNT**

For Summary reporting only: the total number of completed tasks (CMF termination records).

**TOTCPU**

The total task CPU time. This field is calculated as:

$$\text{User CPU Time (DFHTASK S008)} + \text{RLS File Request CPU Time (DFHFILE S175)}$$
**TOTRECS**

Total number of records in this Network Unit-of-Work Extract record. All Cross-System Work Extract records include this field. It is calculated as:

$$\text{APPLRECS} + \text{TRANROUT} + \text{FUNCSHIP} + \text{DPLRECS}$$
**TRANROUT**

Number of terminal-owning region records in this Network Unit-of-Work Extract record. All Cross-System Work Extract records include this field.

**UOWID**

Network unit-of-work ID: the first 6 bytes of NETUOWSX DFHTASK C098 that uniquely identifies this unit of work. This ID is assigned at attach time using either a STCK token (when the task is attached to a local terminal), or the network unit of work ID passed as part of an ISC APPC or IRC attach header. The system clock will wrap at intervals of several months.

**UOWSEQ**

Network unit-of-work ID sequence number: the last 2 bytes of NETUOWSX DFHTASK C098. This field is the period count, typically incremented at each syncpoint.



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## **Part 8. Appendixes**





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## Bibliography

Additional information can be found in the following publications.

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### CICS Performance Analyzer books

*User's Guide*, SC34-2946  
*Report Reference*, SC34-2947  
*Getting Started Guide*, SC34-2945  
*Program Directory*, GI13-0590

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### Books from related libraries

You might find the following publications useful when using CICS Performance Analyzer to analyze and tune the performance of your CICS systems.

#### CICS Transaction Server for z/OS Version 5.2

Information Center: <http://pic.dhe.ibm.com/infocenter/cicsts/v5r2/>  
*CICS Performance Guide*, SC34-7286

#### CICS Transaction Server for z/OS Version 5.1

Information Center: <http://pic.dhe.ibm.com/infocenter/cicsts/v5r1/>  
*CICS Performance Guide*, SC34-2864

#### CICS Transaction Gateway V9.0

*CICS Transaction Gateway for z/OS Administration*, SC34-2828

Information Center: <http://pic.dhe.ibm.com/infocenter/cicstgzo/v9r0/>

#### CICS Transaction Gateway V8.1

*CICS Transaction Gateway for z/OS Administration*, SC34-7220

Information Center: <http://pic.dhe.ibm.com/infocenter/cicstgzo/v8r1/>

#### IMS Performance Analyzer for z/OS

*IMS Performance Analyzer User's Guide*, SC19-3633  
*IMS Performance Analyzer Report Reference*, SC19-3634

#### z/OS

*z/OS MVS System Management Facilities (SMF)*, SA22-7630  
*z/OS DFSORT Application Programming Guide*, SC23-6878

#### RMF

*z/OS RMF User's Guide*, SC33-7990  
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#### WebSphere MQ for z/OS

*WebSphere MQ for z/OS System Setup Guide*, SC34-6927

## **Tivoli Decision Support for z/OS**

*Administration Guide, SH19-6816*

*CICS Performance Feature Guide and Reference, SH19-6820*

## **DB2**

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## **Others**

*Threadsafe Considerations for CICS, SG24-6351*

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