

CICS Transaction Server for z/OS  
Version 5 Release 2



# Upgrading from CICS TS Version 3.2



CICS Transaction Server for z/OS  
Version 5 Release 2



# Upgrading from CICS TS Version 3.2

**Note**

Before using this information and the product it supports, read the information in “Notices” on page 391.

This edition applies to the IBM CICS Transaction Server for z/OS Version 5 Release 2 (product number 5655-Y04) and to all subsequent releases and modifications until otherwise indicated in new editions.

© **Copyright IBM Corporation 2001, 2014.**

US Government Users Restricted Rights – Use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM Corp.

---

# Contents

<b>Preface</b>	<b>vii</b>
----------------	------------

---

## Part 1. Changes to CICS externals . . . 1

### Chapter 1. Changes to installation procedures . . . 3

Value for the JAVADIR parameter	3
Value for the z/OS MEMLIMIT parameter	3
Size of the auxiliary trace data sets	4
Release levels on INQUIRE SYSTEM command	4
Changing start procedures to include the activation module	4

### Chapter 2. Changes to system initialization parameters . . . 5

Obsolete system initialization parameters	5
Changed system initialization parameters	6
New system initialization parameters	11

### Chapter 3. Changes to the application programming interface . . . 17

Changed API commands	18
Changed API commands in CICS TS 5.1	20
Changed API commands in CICS TS 4.2	22
Changed API commands in CICS TS 4.1	23
New API commands	27
API commands that have been made threadsafe	29
Changes to rounding for ASKTIME, CONVERTTIME, and FORMATTIME commands	31

### Chapter 4. Changes to the JCICS application programming interface. . . 33

### Chapter 5. Changes to resource definitions . . . 35

Obsolete resource definition types and attributes	36
Obsolete CICS-supplied resource definitions	37
Changed resource definitions	38
New resource definitions	42
New CICS-supplied resource definition groups	43
DFHEP	43
DFHFCRL	43
DFHPIVAL	43
DFHRL	44
DFHRS	44
DFHWEB2	44
DFHWU	44
Changed CICS-supplied resource definition groups	44
DFHPGAIP	46
DFHISC	47
DFHISCIP	47
Changes to control tables (macro resource definition)	47

### Chapter 6. Changes to the system programming interface . . . 49

Obsolete SPI commands and options	49
Changed SPI commands	52
Changed SPI commands in CICS TS 5.1	61
Changed SPI commands in CICS TS 4.2	68
Resource signature options added to INQUIRE SPI command	82
Changed SPI commands in CICS TS 4.1	85
New SPI commands	96
SPI commands that have been made threadsafe	100

### Chapter 7. Changes to CEMT . . . 103

Obsolete CEMT commands and options	103
Changed CEMT commands	104
Changed CEMT commands in CICS TS 5.1	108
Changed CEMT commands in CICS TS 4.2	111
Resource signature options added to CEMT INQUIRE command	114
Changed CEMT commands in CICS TS 4.1	117
New CEMT commands	124

### Chapter 8. Changes to the CICS management client interface (CMCI) . 127

### Chapter 9. Changes to the CICS-supplied transactions . . . 129

Obsolete transactions	129
Changes to CETR	129
Changes to CKQC	129
Changes to CRTE	131
Changes to CSFE	131
Changes to CEMN	131
New transaction CEPH	131
New transaction CEPQ	131
New transaction CEPS	131
New transaction CEPT	132
New transaction CESL	132
New transaction CFCR	132
New transaction CKBC	132
New transaction CJSA	133
New transaction CWWU	133
New transaction CW2A	133

### Chapter 10. Changes to global user exits and task-related user exits . . . 135

Changes to the DFHUEPAR standard parameter list	136
Changes to global user exits	137
Changed global user exits in CICS TS 5.1	137
Changed global user exits in CICS TS 4.2	139
Changed global user exits in CICS TS 4.1	140
New global user exit points	141
Changes to task-related user exits	143

## **Chapter 11. Changes to the exit programming interface . . . . . 145**

Changes to the exit programming interface (XPI)	146
New exit programming interface (XPI) calls	149

## **Chapter 12. Changes to user-replaceable programs . . . . . 151**

Obsolete user-replaceable programs	151
Changed user-replaceable programs	152
New user-replaceable programs	157

## **Chapter 13. Changes to CICS utilities 159**

## **Chapter 14. Changes to monitoring 163**

Obsolete monitoring data fields	163
Changed monitoring data fields	165
New monitoring data fields	166
Changes to the monitoring sample program DFH\$MOLS	174
Monitoring sample program DFH\$MOLS: support for data for earlier CICS releases	175
Changes to the monitoring control table (MCT)	175

## **Chapter 15. Changes to statistics. . . 177**

Obsolete statistics types	177
Changed statistics types	178
New statistics types	181

## **Chapter 16. Changes to sample programs . . . . . 183**

## **Chapter 17. Changes to problem determination . . . . . 187**

## **Chapter 18. Changes to security . . . 191**

Additions to CICS RACF category 1 transactions	193
Changes to command and resource security	193
Security for platforms and applications	194
Security updates to monitor RACF Event Notifications (ENF)	196
Changes to the EXEC CICS VERIFY PASSWORD and EXEC CICS VERIFY PHRASE commands	197
Upgrading DB2 security support	197

---

## **Part 2. Upgrading CICS**

## **Transaction Server . . . . . 199**

## **Chapter 19. Upgrade procedures for all CICS regions . . . . . 201**

Redefining and initializing the local and global catalogs	201
Enabling z/OS conversion services	201
Upgrading the CSD for CICS-supplied and other IBM-supplied resource definitions	202
Upgrading user-modified CICS-supplied resource definitions	203

Upgrading copies of CICS-supplied resource definitions	204
DSA size limits	204
CSD compatibility between different CICS releases	205
Upgrading the CICS Explorer	209

## **Chapter 20. Upgrading application programs . . . . . 211**

## **Chapter 21. Upgrading file control . . 213**

## **Chapter 22. Upgrading Business Transaction Services (BTS) . . . . . 215**

## **Chapter 23. Communicating over IPIC with different levels of CICS . . . . . 217**

## **Chapter 24. Migrating to IPv6 addressing . . . . . 219**

## **Chapter 25. Upgrading multiregion operation (MRO) . . . . . 221**

## **Chapter 26. Upgrading the Java environment . . . . . 223**

Key changes to CICS support for Java applications	223
Changes to options in JVM profiles	225
Changes to class paths in JVM profiles	229
Upgrading from IBM SDK for z/OS, Java Technology Edition, Version 1.4.2	229
Upgrading from IBM SDK for z/OS, Java Technology Edition, Version 5	230
Upgrading from IBM 31-bit SDK for z/OS, Java Technology Edition, Version 6	232
Migrating Java applications using the CICS Explorer SDK	233
Upgrading Java applications in a JVM server	235

## **Chapter 27. Upgrading the CICS-WebSphere MQ connection . . . 237**

Possible application behavior changes for CICS-WebSphere MQ connection	239
Upgrading your application for CICS-WebSphere MQ connection	240

## **Chapter 28. Upgrading the CICS DB2 connection . . . . . 243**

## **Chapter 29. Upgrading CICS web support applications . . . . . 245**

Implementing connection pooling for client HTTP connections	245
Upgrading Atom feeds from SupportPac CA8K	246

<b>Chapter 30. Upgrading SOAP web services.</b>	<b>251</b>	New Business Application Services definition objects.	290
<b>Chapter 31. Upgrading JSON web services.</b>	<b>253</b>	<b>Chapter 37. Changes to CICSplex SM transactions.</b>	<b>293</b>
Upgrading the JSON web services assistant	253	Changed Web User Interface control transaction (COVC)	293
<b>Chapter 32. Upgrading SAML support</b>	<b>255</b>	New CICSplex SM transactions	293
<b>Chapter 33. Upgrading platforms, applications, policies, and CICS bundles.</b>	<b>257</b>	<b>Chapter 38. Programs that connect to a previous release of CICSplex SM.</b>	<b>295</b>
Requirements for application entry points and operation names	257	<hr/> <b>Part 4. Upgrading CICSplex SM</b>	<b>297</b>
Making applications and CICS bundles available	258	<b>Chapter 39. Conditions for running CICSplex SM Version 5.2 and earlier releases concurrently.</b>	<b>299</b>
Changes to resources defined in CICS bundles	259	<b>Chapter 40. Upgrading CICSplex SM API programs.</b>	<b>303</b>
Private resources for application versions on platforms.	262	<b>Chapter 41. Upgrading a CMAS.</b>	<b>305</b>
Multi-versioning for applications deployed on platforms.	265	<b>Chapter 42. Upgrading a Web User Interface server.</b>	<b>307</b>
Application context enhancements	266	Phased upgrade scenario for Web User Interface servers	309
New policy rule types and rule items	267	Upgrading the contents of the Web User Interface server repository (EYUWREP).	310
<b>Chapter 34. Upgrading event processing.</b>	<b>271</b>	<b>Chapter 43. Upgrading a CICSplex SM managed CICS system (MAS).</b>	<b>311</b>
New events for Atom feeds and WebSphere MQ bridge.	271	<b>Chapter 44. Upgrading CICSplex SM workload management.</b>	<b>313</b>
Upgrading event processing data types.	271	<hr/> <b>Part 5. Changes to CICS messages and codes.</b>	<b>317</b>
Upgrading TS queue EP adapter formats	271	<b>Chapter 45. Deleted messages.</b>	<b>319</b>
Upgrading the HTTP EP adapter to use connection pooling	272	<b>Chapter 46. Changed messages.</b>	<b>323</b>
Upgrading to use the INQUIRE CAPTURESPEC command improvements	272	<b>Chapter 47. New messages.</b>	<b>339</b>
<hr/> <b>Part 3. Changes to CICSplex SM externals.</b>	<b>273</b>	<b>Chapter 48. Deleted abend codes.</b>	<b>381</b>
<b>Chapter 35. Changes to CICSplex SM installation and definition.</b>	<b>275</b>	<b>Chapter 49. New abend codes.</b>	<b>385</b>
New CICSplex SM system parameters	275	<hr/> <b>Part 6. Appendixes</b>	<b>389</b>
New and changed CICSplex SM WUI server initialization parameters.	275	<b>Notices.</b>	<b>391</b>
Changes to the EYU9XDBT utility for CMAS and CICSplex definition	275	Trademarks	393
Change to Common Work Area size for a CMAS	276		
Removal of SEYUMLIB, SEYUPLIB, and SEYUTLIB libraries	276		
Change to generic alert structures used by CICSplex SM	276		
<b>Chapter 36. Changes to CICSplex SM views and resource tables.</b>	<b>279</b>		
Obsolete CICSplex SM views, resource tables, and attributes.	279		
Changed CICSplex SM views and resource tables	279		
New CICSplex SM views and resource tables.	288		

<b>Bibliography. . . . .</b>	<b>395</b>
CICS books for CICS Transaction Server for z/OS	395
CICSplex SM books for CICS Transaction Server	
for z/OS . . . . .	396
Other CICS publications. . . . .	396

<b>Accessibility. . . . .</b>	<b>397</b>
-------------------------------	------------

<b>Index . . . . .</b>	<b>399</b>
------------------------	------------



---

## Preface

This information is about upgrading to CICS® Transaction Server for z/OS®, Version 5 Release 2. This information set provides the relevant information for users who are upgrading from CICS Transaction Server for z/OS, Version 3 Release 2.

If you are upgrading from an older release, select the information set for the release from which you are upgrading. The information sets for older releases include additional information about changes that took place in the intervening releases.

**Note:** The oldest release for which information about upgrading is provided with CICS Transaction Server for z/OS, Version 5 Release 2 is CICS Transaction Server for z/OS, Version 3 Release 1. If you are upgrading from a release of CICS earlier than this, you are recommended to read the information about upgrading and about changes to functions that was provided in the documentation for any additional intervening releases.

In releases before CICS Transaction Server for z/OS, Version 4 Release 1, the information about upgrading from previous releases to the current release of CICS Transaction Server was called the Migration Guide. Although the term “migrate” was used in the CICS documentation to refer to the process of replacing an older release of CICS with a newer release, the industry-standard term for this process is “upgrade”, so the CICS documentation has been changed to use this term. “Migrate” is now used only to refer to the processes of moving data or applications to a different program or environment, or of moving from the use of one function or interface in CICS to the use of a different function or interface.

The information about upgrading is designed to tell you about:

- Any changes to the installation process for the product.
- New, changed and obsolete externals of the product, such as commands and messages.
- Tasks that you perform to upgrade from your previous release of the product, to the new release, so that the applications that ran under your previous release can continue to run under the new release at an equivalent level of function. Some tasks apply to all users, and some apply only if your applications use a particular function, such as support for Java™.
- Tasks that you perform if you want to enable new functions that are available in this release, or change your existing system settings or applications to use the new functions.

This information assumes that you are familiar with CICS and CICSplex® System Manager, either as a systems administrator, or as a system or application programmer. You should also have read about the new function in this release of CICS Transaction Server as described in the *CICS Transaction Server for z/OS What's New*.

### Notes on terminology

CICS refers to the CICS element of CICS Transaction Server for z/OS.

**CICS TS**, unless stated otherwise, refers to the release of CICS Transaction Server for z/OS to which you are upgrading.

**CICSplex SM** refers to the CICSplex System Manager element of CICS Transaction Server for z/OS.

**MVS™** is sometimes used for the operating system, the Base Control Program (BCP) element of z/OS.

---

## Part 1. Changes to CICS externals

CICS externals, such as resource definitions and programming interfaces, have changed to support the changes in function for this CICS release. Read these topics to check which changes might affect your system.



---

## Chapter 1. Changes to installation procedures

When you upgrade to CICS Transaction Server for z/OS, Version 5 Release 2, note these changes to the installation process.

You can install this release of CICS Transaction Server using the **SMP/E RECEIVE**, **APPLY**, and **ACCEPT** commands. Use the SMP/E dialogs to complete the SMP/E installation steps. The process meets IBM® Corporate Standards and might be familiar to you if you have installed other z/OS products.

The DFHISTAR process is still available if you prefer this method for installing CICS Transaction Server.

You must install the activation module. For more information, see Installing the CICS TS activation module in Installing.

For information about all the processes for installing CICS Transaction Server, see Installing.

### Authorization routines

In z/OS, do not install SVCs or PC routines that return control to their caller in any authorized mode: that is, in supervisor state, system PSW key, or APF-authorized. Such action contravenes the z/OS Statement of Integrity.

If you invoke such services from CICS, you might compromise your system integrity, and IBM Service will not resolve any resulting problems.

---

### Value for the JAVADIR parameter

The default location for Java has changed to support the 64-bit JVM.

The default value for the **JAVADIR** parameter in the installation procedures has changed to `java/J7.0_64`. You must download the IBM 64-bit SDK for z/OS, Java Technology Edition and configure CICS to point to the correct location in z/OS UNIX. For more information about upgrading the Java environment, see Chapter 26, “Upgrading the Java environment,” on page 223.

---

### Value for the z/OS MEMLIMIT parameter

To provide sufficient 64-bit (above-the-bar) storage for a CICS TS for z/OS, Version 5.2 region, set the value for the z/OS **MEMLIMIT** parameter equal to or greater than 6 GB. The default value in z/OS for **MEMLIMIT** is 2 GB.

CICS requires a **MEMLIMIT** value of 6 GB or greater. If you attempt to start a CICS region with a **MEMLIMIT** value that is less than 6 GB, message DFHSM0602 is issued, a system dump with the dump code KERNDUMP is produced, and CICS terminates.

You cannot alter the **MEMLIMIT** value for the CICS region while CICS is running. You can specify a new **MEMLIMIT** value on the next start of the CICS region.

A suitable **MEMLIMIT** value for a CICS region must provide sufficient storage for the facilities that use 64-bit storage that you plan to use. For more information, see Estimating, checking, and setting MEMLIMIT in Improving performance.

This storage is not allocated on initialization; CICS allocates it as the need arises.

---

## Size of the auxiliary trace data sets

The default size of the auxiliary trace data sets has changed.

The supplied JCL in SDFHINST for DFHDEFDS, EYUCMSDS, and EYUCSYDS has changed. The default value of the auxiliary trace data sets has changed from 1 cylinder to 25 cylinders. The increased value ensures that data is not overwritten so quickly in a CICS region.

---

## Release levels on INQUIRE SYSTEM command

You use the **EXEC CICS INQUIRE SYSTEM CICSTSLEVEL** command to determine the version and release number of CICS. Use the **EXEC CICS INQUIRE SYSTEM OSLEVEL** command to determine the level of z/OS.

To ensure compatibility with previous releases, the CICS base element maintains its own level (identification) number. Each time new function is added to CICS and shipped with the CICS Transaction Server product, the CICS level number is incremented.

The CICS level number in CICS TS 5.2 is 0690. This number is returned in the **RELEASE** parameter of the **INQUIRE SYSTEM** command.

The level number also appears in the alternative decimal form 6.9 in output from offline utilities such as statistics and dump formatters to identify the level of utility being used, and as the suffix in module names such as DFHPD690.

---

## Changing start procedures to include the activation module

If you use a common, release-independent procedure to start CICS regions, you must include the data set for the activation module in the procedure.

The following JCL is an example of how you can add the data set for the activation module:

CICS procedure:

```
//CICSTS PROC REL=52
//CICS      EXEC PGM=DFHSIP,PARM='SI',REGION=0K,TIME=1439
//STEPLIB DD DISP=SHR,DSN=CICS&REL..SDFHAUTH ...
           ... plus other CICS datasets
//          INCLUDE MEMBER=LIC&REL
```

The PROCLIB has the following members for CICS TS for z/OS V5.2 and V5.1:

```
LIC52
//      DD DISP=SHR,DSN=CICS52.SDFHLIC

LIC51
//*      No activation module dataset required
```

---

## Chapter 2. Changes to system initialization parameters

In CICS Transaction Server for z/OS, Version 5 Release 2, new system initialization parameters are available, and you might find that some system initialization parameters that you used previously are now obsolete. Also, the scope, default, or range of possible values for some existing system initialization parameters has changed. You might need to make changes to your system initialization table or your CICS startup JCL because of these changes.

To upgrade with the changes to CICS system initialization parameters described in this section, follow these instructions.

### Use the default system initialization table

The unsuffixed default system initialization table (DFHSIT) is supplied in the CICS SDFHAUTH library. You can use the default table to start a CICS region using the default values. CICS loads DFHSIT by default if your JCL does not contain a SIT parameter.

### Override defaults using the SYSIN data set

To override default values, specify system initialization parameters in a permanent member of a SYSIN data set. You can vary these during testing by changing the data set member, avoiding the need to reassemble suffixed system initialization tables. Nearly all system initialization parameters entered at run time are used even on a warm start. The main exceptions are the FCT and CSD parameters.

### Defining and installing the global catalog record key

Global catalogue keys have increased in length by 24 bytes. Define a 52-byte global catalog record key in the CLUSTER definition in DD statement for the global catalog.

---

## Obsolete system initialization parameters

Remove these obsolete parameters from your system initialization table or from your CICS startup JCL (for example, the SYSIN data set) before upgrading. If you specify any of these parameters, they are rejected and a message is issued.

### System initialization parameters made obsolete in CICS Transaction Server for z/OS, Version 5 Release 2

No system initialization parameters were made obsolete in CICS Transaction Server for z/OS, Version 5 Release 2.

### System initialization parameters made obsolete in CICS Transaction Server for z/OS, Version 5 Release 1

#### EJBROLEPRFX

**EJBROLEPRFX** was used to specify a prefix that qualified the security role defined in an enterprise bean's deployment descriptor.

#### IIOPLISTENER

**IIOPLISTENER** was used to specify whether the CICS region was to function as an IIOP listener region.

**JVMCCSIZE**

**JVMCCSIZE** was used to specify the size of the shared class cache for pooled JVMs on an initial or cold start of CICS.

**JVMCCSTART**

**JVMCCSTART** was used to specify the startup behavior for the shared class cache that was used by pooled JVMs.

**JVMLEVEL0TRACE**

**JVMLEVEL0TRACE** was used to specify the default option for pooled JVM level 0 trace that corresponded to the trace level 29 of the SJ component.

**JVMLEVEL1TRACE**

**JVMLEVEL1TRACE** was used to specify the default option for pooled JVM level 1 trace that corresponded to the trace level 30 of the SJ component.

**JVMLEVEL2TRACE**

**JVMLEVEL2TRACE** was used to specify the default option for pooled JVM level 2 trace that corresponded to the trace level 31 of the SJ component.

**JVMUSERTRACE**

**JVMUSERTRACE** was used to specify the default option for JVM user trace that corresponded to trace level 32 of the SJ component.

**MAXJVMTCBS**

**MAXJVMTCBS** was used to specify the maximum number of open TCBs in the JVM pool, which contained J8 and J9 mode open TCBs for use by Java programs that ran in pooled JVMs. The JVM pool no longer exists.

**TDSUBTASK**

**TDSUBTASK** was used to specify whether CICS used the FO TCB to write to an extrapartition transient data queue, where the record format is FIXED and the block format is UNBLOCKED.

**XEJB**

**XEJB** was used to specify whether support of security roles for enterprise beans was enabled.

---

## Changed system initialization parameters

For some system initialization parameters, the default is now changed, or the values that you can specify are changed, or the scope of the system initialization parameter is changed. You might need to modify your system initialization table (SIT) or CICS startup JCL because of these changes.

### System initialization parameters changed in CICS Transaction Server for z/OS, Version 5 Release 2

**ENCRYPTION={STRONG|ALL|TLS12}**

Before CICS TS for z/OS, Version 5.2, the **ENCRYPTION** parameter supported six values; WEAK, MEDIUM, NORMAL, STRONG, ALL, and TLS12FIPS. The values WEAK, MEDIUM, NORMAL, and TLS12FIPS are no longer supported. The new value TLS12 is added. To obtain the same result as using the old TLS12FIPS option, use TLS12, and also code the new system initialization parameter **NISTSP800131A=CHECK**.

If your system initialization table contains an invalid value, the default value, STRONG, is used instead. If you specify an override with an invalid value in



your CICS JCL, CICS pauses during startup and prompts you to respecify the override. To avoid these occurrences, update any system initialization tables or JCL overrides to specify a valid value.

**JVMPROFILEDIR**={/usr/lpp/cicsts/cicsts52/JVMProfiles|*directory*}

From CICS TS for z/OS, Version 5.2, JVM servers can be defined in CICS bundles. For these JVM servers, the JVM profile is packaged in the CICS bundle with the JVMSERVER resource definition. CICS does not load these JVM profiles from the directory that is specified by **JVMPROFILEDIR**. Instead, they are stored in a suitable directory for the CICS bundle, and the location is specified by the CICS bundle.

## System initialization parameters changed in CICS Transaction Server for z/OS, Version 5 Release 1

**AKPFREQ**={4000|*number*}

Before CICS TS for z/OS, Version 5.1, the minimum value of the range for the **AKPFREQ** parameter was 200. This minimum value is now decreased to 50. This value means that completed log task records can be deleted more frequently, which reduces the DASD dataspace usage.

**AUTORESETTIME**={IMMEDIATE|NO|YES}

Before CICS TS for z/OS, Version 5.1, the CICS time-of-day was synchronized with the system time-of-day only at midnight. A new option, IMMEDIATE, now synchronizes the time at the next task attach. The IMMEDIATE option is the default.

**EDSALIM**={800M|*number*}

In CICS TS for z/OS, Version 4.2, the minimum value for the **EDSALIM** parameter was changed from 10 MB to 48 MB, and the default value was increased to 48 MB, which is the minimum that is required to start a CICS region. The default value is now further increased to 800 MB, which enables a CICS region started with the default value to process a reasonable workload. If you created your SIT or CICS startup JCL using previously supplied defaults, or a value less than the minimum of 48 MB, update them to use the new CICS-supplied default, or to an appropriate value.

**ENCRYPTION**={WEAK|MEDIUM|STRONG|ALL|TLS12FIPS}

Before CICS TS for z/OS, Version 5.1, the **ENCRYPTION** parameter supported three values; WEAK, MEDIUM, and STRONG. Two new values are introduced:

### ALL

This option provides support for all SSL protocols up to and including TLSV1\_1 and TLSV1\_2.

### TLS12FIPS

Initializes an SSL environment that is restricted to the TLS 1.2 protocol and has FIPS 140.2 standards imposed.

**ICVTSD**={0|*number*}

Before CICS TS for z/OS, Version 5.1, the default value for the **ICVTSD** parameter was 500. The default value is now 0. The terminal scan delay facility was used in earlier releases to limit how quickly CICS dealt with some types of terminal output requests made by applications, in order to spread the overhead for dealing with the requests. Specifying a nonzero value was sometimes appropriate where the CICS system used non-SNA networks.

However, with SNA and IPIC networks, setting ICVTSD to 0 is appropriate to provide a better response time and best virtual storage usage.

**MXT={500|number}**

Before CICS TS for z/OS, Version 5.1, the minimum, default, and maximum values of the **MXT** parameter were 1, 5, and 999. The minimum value is now increased to 10, the default value is increased to 500, and the maximum value is increased to 2000. These changes mean that a CICS region operates more efficiently with the default setting and can process more workload.

**PRTYAGE={1000|value}**

Before CICS TS for z/OS, Version 5.1, the default value for the **PRTYAGE** parameter was 32786 (32.786 seconds). The default value is now decreased to 1000 (1 second). This value means that the priority of long-running tasks that are on the ready queue increases more rapidly.

**SPCTRxx={ (1,2 ) | (1[,2] [,3] [,4]) | ALL | OFF }**

A new component code (MP) has been added to support the special tracing levels for the managed platform domain. The special tracing level numbers 29, 30, 31, and 32 that traced the SJ component for Java are obsolete.

**STATINT={010000|hhmmss }**

Before CICS TS for z/OS, Version 5.1, the default value of the **STATINT** parameter was 030000 (3 hours). The default value is now changed to 010000 (1 hour), so that useful CICS system and resource data is collected more frequently. The number of SMF 110 monitoring records that are written by CICS regions that use the default value for this parameter will increase.

**STATRCD={OFF|ON}**

Before CICS TS for z/OS, Version 5.1, the default value of the **STATINT** parameter meant that on a cold start of a CICS region, where **STATRCD** was set to ON and the default value for **STATINT** was used, interval statistics were recorded at three-hourly intervals. The new default value for the **STATINT** parameter means that interval statistics are recorded at hourly intervals for a CICS region in this situation.

**STNTRxx={1 | (1[,2] [,3] [,4]) | ALL | OFF }**

A new component code (MP) has been added to support the standard tracing levels for the managed platform domain. The trace levels 29, 30, 31, and 32 are obsolete and no longer traced.

**TBEXITS=( [name1] [,name2] [,name3] [,name4] [,name5] [,name6] )**

The **TBEXITS** system initialization parameter enables specified global user exit programs as backout exit programs. The backout exit programs are used during emergency restart backout for user log record recovery and file control recovery. In releases earlier than CICS TS for z/OS, Version 5.1, these global user exit programs were enabled with a global work area of 4 bytes in 24-bit (below-the-line) storage. These global user exit programs are now enabled with a global work area of 4 bytes in 31-bit (above-the-line) storage.

**TCTUALOC={BELOW|ANY}**

Before CICS TS for z/OS, Version 5.1, the default value for the **TCTUALOC** parameter was **BELOW**, which meant that terminal user areas were always stored in 24-bit (below-the-line) storage. The default value is now **ANY**, which means that terminal user areas can be stored in 24-bit (below-the-line) storage or in 31-bit (above-the-line) storage, and CICS uses 31-bit storage to store them if possible. If you require the terminal user area to be in 24-bit storage, because

you have application programs that are not capable of 31-bit addressing, specify the system initialization parameter **TCTUALOC=BELOW** for the CICS region.

#### **TRANISO={NO|YES}**

In CICS TS for z/OS, Version 4.2, some CICS facilities used 64-bit storage or 31-bit storage, depending on the version of the z/OS operating system and whether the CICS region operated with transaction isolation (set by using the **TRANISO** system initialization parameter). This parameter now no longer affects whether 64-bit storage is used by these CICS facilities.

#### **TRTRANSZ={1024|number-of-kilobytes}**

Before CICS TS for z/OS, Version 5.1, the default value of the **TRTRANSZ** parameter was 16 KB. The default value is now increased to 1024 KB. This value provides a larger transaction dump trace table, which might contain more useful trace information.

Check your current setting for the z/OS parameter **MEMLIMIT**, which limits the amount of 64-bit storage that the CICS address space can use. Your setting for **TRTRANSZ** must remain within **MEMLIMIT**, and you must also allow for other use of 64-bit storage in the CICS region.

Also check the current space allocations for the CICS transaction dump data sets. Increase the amount of space currently allocated to match the new value.

### **System initialization parameters changed in CICS Transaction Server for z/OS, Version 4 Release 2**

#### **CSDLSRNO={1|number|NONE|NO}**

Before CICS TS for z/OS, Version 4.2, you specified an LSR pool number in the range 1 - 8. The number of LSR pools that can be defined is now increased to 255.

#### **FCQRONLY={YES|NO}**

Before CICS TS for z/OS, Version 4.2, you specified **FCQRONLY=YES** to improve the performance of all file-owning regions. However, for file-owning regions at or after CICS TS for z/OS, Version 4.2, choose an appropriate setting for **FCQRONLY**:

- For FORs where the connections to that region are primarily MRO or ISC connections, these requests run on the QR TCB, and CICS runs the mirror program primarily on the QR TCB. Specify **FCQRONLY=YES** so that all file control requests are processed on the QR TCB. This setting improves performance by avoiding locking, which is unnecessary when all file control requests run on the same TCB.
- For FORs where the connections to that region are primarily IPIC connections, these requests run on open TCBs, and CICS runs the mirror program on an L8 open TCB whenever possible. Specify **FCQRONLY=NO** so that file control requests do not switch to the QR TCB to be processed. This setting improves performance by multi-threading file control requests.

#### **TRTABSZ={4096|number-of-kilobytes}**

Before CICS TS for z/OS, Version 4.2, the storage specified by **TRTABSZ** for the CICS internal trace table was always 31-bit (above-the-line) storage. The internal trace table can now be in 64-bit (above-the-bar) storage.

CICS obtains MVS 64-bit (above-the-bar) storage (outside the CICS DSAs) for the internal trace table.

If you change the size of the internal trace table, check your current setting for the z/OS parameter **MEMLIMIT**. **MEMLIMIT** limits the amount of 64-bit storage that

the CICS address space can use. Your setting for **TRTABSZ** must remain within **MEMLIMIT**, and you must also allow for other use of 64-bit storage in the CICS region.

When the internal trace table is in 64-bit storage, the **TRTABSZ** value no longer influences your setting for the **EDSALIM** system initialization parameter. If you previously set the EDSA limit for a CICS region so that there was enough 31-bit storage outside the CICS DSAs for a large internal trace table, you can now adjust the limit to provide more storage for the CICS extended dynamic storage areas.

**TRTRANSZ**=**{16 |number-of-kilobytes}**

From CICS TS for z/OS, Version 4.2, CICS uses 64-bit (above-the-bar) storage for the transaction dump trace table.

Before CICS TS for z/OS, Version 4 Release 2, the transaction dump trace table was in 31-bit (above-the-line) storage. If you specified a small size for the transaction dump trace table at that time because of concerns about the availability of 31-bit storage, consider reviewing your **TRTRANSZ** value to provide a larger transaction dump trace table now that 64-bit storage is used.

Because the transaction dump trace table is in 64-bit storage, check your current setting for the z/OS parameter **MEMLIMIT** when you set the size of the trace table.

## System initialization parameters changed in CICS Transaction Server for z/OS, Version 4 Release 1

**INITPARM**=(**DFHMQPRM**=*'SN=queue manager name,IQ=initiation queue name'*)

You can no longer use the **INITPARM** system initialization parameter with a **DFHMQPRM** operand to specify a default WebSphere® MQ queue manager name and initiation queue name for the CICS-WebSphere MQ connection. Instead, set up an **MQCONN** resource definition for the CICS region to provide these defaults. If the **DFHMQPRM** or **CSQCPARM** operand is present on **INITPARM**, you must remove it. CICS issues a warning message if the **DFHMQPRM** operand is present on **INITPARM** when you start the CICS-WebSphere MQ connection, and defaults specified there are not applied to the CICS-WebSphere MQ connection. The **INITPARM** system initialization parameter itself is still valid with other operands.

**JVMPROFILEDIR**={/usr/lpp/cicsts/cicsts52/JVMProfiles|*directory*}

The default value for the **JVMPROFILEDIR** system initialization parameter now consists of the value of the new **USSHOME** system initialization parameter, followed by the subdirectory **JVMProfiles**. The default value for the **USSHOME** system initialization parameter is /usr/lpp/cicsts/cicsts52, so if that default value is used, the default value of **JVMPROFILEDIR** is /usr/lpp/cicsts/cicsts52/JVMProfiles.

**MQCONN**={**NO**|**YES**}

Specifying **MQCONN=YES** makes CICS start a connection to WebSphere MQ automatically during initialization. CICS no longer uses the **INITPARM** system initialization parameter to provide information for this process.

When you specify **MQCONN=YES**, the information that CICS needs to start the connection to WebSphere MQ, such as the name of a WebSphere MQ queue manager or queue-sharing group, is taken from the **MQCONN** resource definition for the CICS region.

An **MQCONN** resource definition must be installed before CICS can start the connection to WebSphere MQ. When you start the connection automatically at

CICS initialization, for an initial or cold start, the MQCONN resource definition must be present in one of the groups named in the list or lists named by the **GRPLIST** system initialization parameter. For a warm or emergency start of CICS, the MQCONN resource definition must have been installed by the end of the previous CICS run.

**PSTYPE={SNPS|MNPS|NOPS}**

NOPS is a new option for this system initialization parameter.

If you do not require persistent sessions support, specify NOPS. A CICS region that is used only for development or testing might not require this support. Removing persistent sessions support where it is not required reduces resource consumption, and can enable you to increase the number of CICS regions in an LPAR. If you specify NOPS, a zero value is required for the **PSDINT** system initialization parameter.

**USRDELAY={30|number}**

If you specify a low value for the **USRDELAY** system initialization parameter to ensure that CICS quickly detects changes to RACF® profiles, you might want to increase this value if your system is z/OS 1.11 or a later release, because from z/OS 1.11, CICS is notified immediately if RACF profile changes occur. The primary impact of a high **USRDELAY** value is that the amount of storage used for RACF control blocks is increased.

---

## New system initialization parameters

The default values for these parameters have minimal impact when you are upgrading from an earlier release of CICS. However, if your region uses a lot of main temporary storage queues, review whether the default **TSMAINLIMIT** value is sufficient.

### New system initialization parameters added in CICS Transaction Server for z/OS, Version 5 Release 2

- The **NISTSP800131A** system initialization parameter specifies whether the CICS region is to check for conformance to the NIST SP800-131A standard.

**NISTSP800131A={NOCHECK|CHECK}**

**NOCHECK**

Conformance checking is not required in this CICS region. This is the default value.

**CHECK**

The CICS region is required to check for conformance with the NIST SP800-131A security standard. If this value is set, CICS issues a message if an actual or potential violation is detected.

This option also causes the CICS SSL environment to use only TLS v 1.2 with FIPS 140-2 standards applied.

The checks that are performed are as follows:

#### Web services

If the `<wsse_handler>` tag is specified in a pipeline configuration file, it implies that the pipeline is to be used for web services security. Because not all of the encryption algorithms that can be used for web services security are SP800-131A conformant, installing a pipeline that uses web services means that CICS might be non-conformant. CICS issues message DFHXS1300, which warns of potential nonconformance.

If you receive message DFHXS1300, check whether you are using DFHWSSE as the web services security handler. If you are not using DFHWSSE, inspect your security handler to check which encryption and signing algorithms it uses. If these algorithms are SP800-131A conformant, you can ignore the message. If they are not conformant, consider whether to use conformant algorithms instead. Otherwise, if the CICS region that issues the message must be conformant, consider moving the web service security workload to a different CICS region where conformance is not required.

CICS also checks for certain things that are not conformant to SP800-131A. If any of these situations are found, CICS issues message DFHXS1301:

- An <algorithm> element exists within the <authentication> element of the <wsse\_handler> definition in the pipeline configuration file. The only algorithms that can be used are SHA-1 routines, which are not conformant with NIST SP800-131A.
- A <sign\_body> element exists in the pipeline configuration file. The only algorithms that can be used are SHA-1 routines, which are not conformant with SP800-131A.
- An <encrypt\_body> element in the pipeline configuration file. Of the four algorithms that can be used, three are conformant with SP800-131A but one is not. If the nonconformant algorithm is specified, DFHXS1301 is issued.

If you receive message DFHXS1301, consider not performing the encryption or signing operations in this CICS region. If the nonconformant algorithm is specified in the <encrypt\_body> element, consider using a conformant algorithm.

### Sockets

If SSL is active, setting **NISTSP800131A=CHECK** forces **ENCRYPTION=TLS12** if it is not already set. If **ENCRYPTION=TLS12** is forced, message DFHSD0144 is issued. Sockets domain initializes the SSL environment with the FIPS option on and the System SSL started task runs in FIPS mode. The effect of this is that SSL allows fewer ciphers to be used on a successful handshake.

To use FIPS with z/OS Version 2 Release 1 or later, ICSF (Integrated Cryptographic Services Facility) must be active on your system. If you have not already done so, apply APAR OA14956 to z/OS.

If SSL is inactive because no **KEYRING** parameter is specified, then setting NISTSP800131A has no effect on sockets domain.

### JVM servers

When a JVM server is started, CICS sets the Java properties to make Java NIST SP800-131A conformant.



If you set **NISTSP800131A=CHECK**, you should also set **ENCRYPTION=TLS12**. However, if you do not do so, CICS overrides the value of **ENCRYPTION** to **ENCRYPTION=TLS12** and issues a warning message.

- The **USSCONFIG** system initialization parameter specifies the name and path of the root directory for CICS Transaction Server configuration files on z/OS UNIX.

**USSCONFIG={/var/cicsts/dfhconfig | directory}**

Specifies the directory in which z/OS UNIX configuration files such as the SSL cipher suite specification file are stored. The default value is /var/cicsts/dfhconfig.

## New system initialization parameters added in CICS Transaction Server for z/OS, Version 5 Release 1

- The **RACFSYNC** system initialization parameter specifies whether CICS listens for type 71 ENF events.

**RACFSYNC={YES|NO}**

RACF sends a type 71 ENF signal to listeners when a **CONNECT**, **REMOVE**, or **REVOKE** command changes a user's resource authorization. When CICS receives a type 71 ENF event for a user ID, all cached user tokens for the user ID are invalidated, irrespective of the setting of the **USRDELAY** parameter. Subsequent requests from that user ID force a full RACF RACROUTE VERIFY request, which results in a refresh of the user's authorization level. User tokens for tasks that are currently running are not affected.

**Note:** Specify the **RACFSYNC=NO** parameter only under direction from IBM Service.

**YES** CICS listens for type 71 ENF events.

**NO** CICS does not listen for type 71 ENF events.

**Restrictions:** You can specify the **RACFSYNC** parameter only in the system initialization table (SIT), the **PARM** parameter of the **EXEC PGM=DFH5IP** statement, or the SYSIN data set.

- The **SECVFYFREQ** system initialization parameter specifies whether or not CICS makes a full verification request at least once a day for each user ID that is used to log on to the CICS region.

**SECVFYFREQ={NEVER|USRDELAY}**

When a user logs on to CICS by a method that uses password verification, such as the **EXEC CICS VERIFY PASSWORD** or **EXEC CICS VERIFY PHRASE** command, instead of a full verification request such as the **EXEC CICS SIGNON** command, RACF normally does not record the login, and does not write audit information for the user ID. You can use **SECVFYFREQ** to require that CICS makes a full verification request for each user at least once a day. The full verification request makes RACF record the date and time of last access for the user ID, and write user statistics.

The following login processes in CICS use password verification:

- HTTP basic authentication with CICS web support
- Web services authentication
- IP interconnectivity (IPIC) authentication

You might also have your own login processes that use the **EXEC CICS VERIFY PASSWORD** or **EXEC CICS VERIFY PHRASE** command.

## NEVER

When the login process uses password verification, CICS makes a full verification request only if an attempt at password verification fails. User IDs that are used only with login processes involving password verification can appear to be unused.

## USRDELAY

CICS makes a full verification request at least once a day for each user ID that is used to log on to the CICS region. The **USRDELAY** system initialization parameter for the CICS region controls the interval between full verification requests for the user IDs.

- When the user ID is unused for more than the **USRDELAY** limit and is removed from the system, CICS makes a full verification request when the user next logs in. If **USRDELAY** is set to 1440 minutes (1 day) or higher, CICS enforces a full verification request at user login for each user ID once a day.
- If **USRDELAY** is set to 0, CICS always makes a full verification request when a user logs in, unless the user is currently signed on and running a task in the CICS region.

Additional full verification requests can take place for other reasons, such as a user sign-on using the **EXEC CICS SIGNON** command.

The full verification request uses the **RACROUTE REQUEST=VERIFYX** macro, instead of the **RACROUTE REQUEST=EXTRACT** macro that is used for password verification. The **RACROUTE REQUEST=VERIFYX** macro has a higher processor cost and response time, so you might notice a slight performance impact when you implement this function. If your **USRDELAY** parameter is set to less than 1440 minutes, the performance impact is greater, because the full verification request takes place at user login more frequently than once a day.

**Restriction:** You can specify the **SECVFYFREQ** system initialization parameter in the **SIT**, **PARM**, or **SYSIN** only.

## New system initialization parameters added in CICS Transaction Server for z/OS, Version 4 Release 2

- The **TSMMAINLIMIT** system initialization parameter specifies a limit for the storage that is available for main temporary storage queues to use. You can specify an amount of storage in the range 1 - 32768 MB (32 GB), but this amount must not be greater than 25% of the value of the z/OS parameter **MEMLIMIT**. The default is 64 MB.

**TSMMAINLIMIT={64M|nnnnnM|nnG}**

**64M** The default setting in megabytes.

**nnnnnM**

An amount of storage in megabytes. The allowed range is 1 - 32768 MB.

**nnG** An amount of storage in gigabytes. The allowed range is 1 - 32 GB.

For example, **TSMMAINLIMIT=2G** makes 2 GB of storage available to main temporary storage queues.

When you set this parameter, check your current setting for the z/OS parameter **MEMLIMIT**. **MEMLIMIT** limits the amount of 64-bit storage that the CICS address space can use. Your setting for **TSMMAINLIMIT** must not be greater than 25% of the **MEMLIMIT** value.



In versions of CICS before CICS TS for z/OS, Version 4.2, the limit of storage available for main temporary storage queues to use was determined by the **EDSALIM** parameter. If your region uses a lot of main temporary storage queues, the current default **TSMAINLIMIT** value might not provide sufficient storage, compared with the limit determined by the previous **EDSALIM** value. Therefore consider whether you need to increase the **TSMAINLIMIT** value.

## New system initialization parameters added in CICS Transaction Server for z/OS, Version 4 Release 1

- The **USSHOME** system initialization parameter specifies the name and path of the root directory for CICS Transaction Server files on z/OS UNIX.

**USSHOME={/usr/lpp/cicsts/cicsts52 | *directory* | NONE}**

The value for the **USSHOME** system initialization parameter must match the directory that you specified for CICS Transaction Server files on z/OS UNIX when you installed CICS using the DFHISTAR installation job. The default value for the **USSHOME** system initialization parameter is `/usr/lpp/cicsts/cicsts52`, which matches the default values for the DFHISTAR installation job. The maximum length of the **USSHOME** system initialization parameter is 255 characters.

If you changed any of the **TINDEX**, **PATHPREFIX**, or **USSDIR** parameters in the DFHISTAR installation job, you must specify a value for the **USSHOME** system initialization parameter to match the name and path that you specified for the root directory using those DFHISTAR parameters.

If you specify **USSHOME=NONE** instead of specifying a directory name, CICS does not use any default root directory in the UNIX System Services file system. In this case, some CICS functions that request data from this directory might produce unpredictable results.

- The **MNIDN** system initialization parameter specifies whether the monitoring identity class is to be made active during CICS initialization.

**MNIDN={OFF|ON}**

The monitoring identity class status is recorded in the CICS global catalog for use during warm and emergency restarts.

**OFF** Set identity monitoring class to not active.

**ON** Set identity monitoring class to active.



---

## Chapter 3. Changes to the application programming interface

CICS Transaction Server for z/OS, Version 5 Release 2 includes some new API commands to support new CICS functions, and some existing commands have changes to options and error conditions.

### Program compatibility

CICS provides API compatibility from release to release. However, functional changes to some CICS components can affect some CICS API commands.

Except for the specific cases described in these topics, CICS Transaction Server provides compatibility with future releases, at source and object level, for all CICS application programs that are written to the CICS application programming interface and which run correctly under the previous release.

For information about CICS support for application programming languages, see the *CICS Transaction Server for z/OS What's New*.

### Application program mask setting following a handled condition

CICS TS for z/OS, Version 5.2 resolves the problem reported in APAR PM73097. Previously, when CICS handled a condition encountered by an application as requested by an earlier EXEC CICS HANDLE CONDITION command, the application's program mask was set to zero in the PSW. As a consequence, in the event of a subsequent program exception in a PL/I program, such as an overflow, no interrupt occurred. Now, when CICS handles a condition, the application's program mask is correctly restored to the value that it had when the EXEC CICS HANDLE CONDITION command was issued.

### DFH3QSS program

If any of your applications call the DFH3QSS program to query the CICS environment and API capability, re-link those applications with the version of DFH3QSS supplied with CICS TS for z/OS, Version 5.2.

### Client basic authentication on WEB SEND commands

**EXEC CICS WEB SEND(CLIENT)** commands that do not use the **AUTHENTICATE** option will send authentication information to an HTTP server if the following statements are both true:

- The **AUTHENTICATE(BASIC)** attribute has been set on the **URIMAP** resource.
- The **XWBAUTH** global user exit is enabled.

They will send authentication information because, if a web services client communicates with an HTTP server that requires authentication, the web services client provides the basic authentication information required by the HTTP server, by means of the **URIMAP** resource and the **XWBAUTH** global user exit.

### IPIC override for default connections

When a **START** or **CANCEL** command is sent, an IPIC connection is used, if available. The following rules apply:

- The IPIC connection, which is defined in the IPCONN resource, overrides any default APPC or MRO connections with the same name, which are defined in the CONNECTION resource.
- If you have not configured an IPCONN resource or the IPCONN is not acquired but is in service, a CONNECTION resource with the same name is used.
- If an APPC or MRO connection is used and the CONNECTION resource is not configured, the command is not sent.

---

## Changed API commands

Some API commands are extended with new options or RESP2 values. Also, the usage of certain options on existing API commands has changed. Check the new descriptions to ensure that you are using these options in the best way.

### ASSIGN

New options ERRORMSG and ERRORMSGLEN on the **ASSIGN** command return the error message for the CICS task:

#### **ERRORMSG**(*data-area*)

Returns the error message up to a maximum of 500 bytes that is currently referenced in the transaction abend control block for the CICS task. Following a failure of a DPL request, the message is that returned from the remote system. For messages shorter than 500 bytes the message is padded with nulls.

If no message is present, the 500 byte area contains nulls.

#### **ERRORMSGLEN**(*data-area*)

Returns a halfword binary value representing the length of the message returned for ERRORMSG. If the message referenced in the transaction abend control block exceeds 500 bytes, the message is truncated and the length is set to 500.

If no message is present the length returned is 0.

The new option LINKLEVEL on the **ASSIGN** command returns the program link level:

#### **LINKLEVEL**(*data-area*)

Returns a halfword binary value representing the program link level in the local system. The topmost link level is level one and for each EXEC CICS LINK the link level is incremented by one. The link level is not incremented for a language CALL statement. If a program is the target of a DPL request, the link level returned is that within the CICS region it is executing and not the wider distributed transaction. If a program is DPLed to, then link level one will be the CICS mirror program DFHMIRS.

New options APPLICATION, MAJORVERSION, MICROVERSION, MINORVERSION, OPERATION and PLATFORM on the **ASSIGN** command return the current application context associated with the task:

#### **APPLICATION** (*data-area*)

Returns the 64 character name of the current application associated with the task. It is part of the application context that is made up of the application name, the platform name, the operation name and the major, minor and micro version number of the application. If there is no application context associated with the task, then blanks are returned.

| **MAJORVERSION**(*data-area*)

| Returns the fullword binary value representing the major version of the current  
| application associated with the task, which is part of the application context. If  
| there is no application context associated with the task, then -1 is returned.

| **MICROVERSION**(*data-area*)

| Returns the fullword binary value representing the micro version of the current  
| application associated with the task, which is part of the application context. If  
| there is no application context associated with the task, then -1 is returned.

| **MINORVERSION**(*data-area*)

| Returns the fullword binary value representing the minor version of the  
| current application associated with the task, which is part of the application  
| context. If there is no application context associated with the task, then -1 is  
| returned.

| **OPERATION**(*data-area*)

| Returns the 64 character name of the current operation associated with the  
| task, which is part of the application context. If there is no application context  
| associated with the task, then blanks are returned.

| **PLATFORM**(*data-area*)

| Returns the 64 character name of the platform associated with the task, which  
| is part of the application context. If there is no application context associated  
| with the task, then blanks are returned.

For more information see ASSIGN.

## **DELAY**

The **DELAY** command has been enhanced to allow a value to be specified in milliseconds. However, CICS checks for delay expiry every 250 milliseconds, so the actual interval might vary depending on where in the scan cycle your request is made.

| **MILLISECS**(*data-value*)

| specifies a fullword binary value in the range 0–999, when HOURS, MINUTES  
| or SECONDS are also specified, or 0-359999999 when MILLISECS is the only  
| option specified.

For more information see DELAY.

## **FORMATTIME**

The new option STRINGZONE on the **FORMATTIME** command specifies in what timezone the DATESTRING value should be returned, UTC or local time.

| **STRINGZONE**(*cvda*)

| Specifies the timezone in which the time stamp returned in DATESTRING is to  
| be returned. The CVDA values are:

| **UTC** DATESTRING is to be returned in UTC. This is the default setting.

| **LOCAL**

| DATESTRING is to be returned in LOCAL timezone.

For more information see FORMATTIME.

## LINK

This command operates in the current application context. If the command is issued by a program that is running under a task for an application deployed on a platform, CICS searches first for the named program in the private program directory for the application. If the named program is not found there, CICS then searches the public program directory.

When this command is used to link to a program that is declared as an application entry point for an application deployed on a platform, the CICS bundle where the application entry point is declared must have a status of AVAILABLE. The link is made to the highest numbered version of the application that is installed, enabled, and available. To link to a specified version of an application deployed on a platform, use the INVOKE APPLICATION command instead of the LINK command.

For more information see LINK.

## Changed API commands in CICS TS 5.1

These API commands were extended or changed in CICS Transaction Server for z/OS, Version 5 Release 1.

### ASSIGN

Two new options are provided for the **ASSIGN** command to support non-Language Environment (LE) AMODE(64) assembler programs:

#### **ASRAPSW16**(*data-area*)

Returns a 16-byte data area that contains the 128-bit program status word (PSW) at the point when the latest abend with a code of AICA, ASRA, ASRB, ASRD, or ASRE occurred.

The field contains binary zeros if no AICA, ASRA, ASRB, ASRD, or ASRE abend occurred during the execution of the issuing transaction, or if the abend originally occurred in a remote DPL server program.

#### **ASRAREGS64**(*data-area*)

Returns the contents of the 64-bit general registers 0 - 15 at the point when the latest AICA, ASRA, ASRB, ASRD, or ASRE abend occurred.

The contents of the registers are returned in the data area (128 bytes long) in the order 0, 1, ..., 14, 15.

The data area is set to binary zeros if no AICA, ASRA, ASRB, ASRD, or ASRE abend occurred during the execution of the issuing transaction, or if the abend originally occurred in a remote DPL server program.

The ASRASTG option of the **ASSIGN** command is changed to return a value of CICS for a storage type of ETDSA or GCDSA, and USER for a storage type of GUDSA. For more information, see ASSIGN in Reference -> Application development.

### GET CONTAINER

The new BYTEOFFSET option on the **GET CONTAINER** retrieves data beginning at a specified offset in a container, and continuing to the length specified in the FLENGTH option. For example, you can use this option in web services applications to retrieve a single occurrence of a recurring data structure from a container. The option is also available on the new **GET64 CONTAINER** command.

**BYTEOFFSET(*data-value*)**

Specifies the offset in bytes where the data returned starts. For CHAR containers, the BYTEOFFSET value is used as an offset into the data in the requested codepage. If you use a codepage with multibyte characters, depending on the BYTEOFFSET value you specify, the data returned might have partial characters at the beginning, end, or both. In this situation, your application program must be able to handle and interpret the data returned. If the value specified is less than zero, zero is assumed.

For more information, see GET CONTAINER.

**LOAD PROGRAM**

The ENTRY option of the **LOAD PROGRAM** command is changed to support non-Language Environment (LE) AMODE(64) assembler programs. CICS program load services now set the entry point according to the addressing mode of the load module as follows:

- AMODE(24): bit 0 is 0 and bit 31 is 0.
- AMODE(31): bit 0 is 1 and bit 31 is 0.
- AMODE(64): bit 0 is 0 and bit 31 is 1.

For more information, see LOAD in Reference -> Application development.

**PUT CONTAINER**

The new APPEND option on the **PUT CONTAINER** command appends the specified data to the existing data in the container. For example, you can use this option in web services applications to build up a container with repeated occurrences of the same data structure. The option is also available on the new **PUT64 CONTAINER** command, and the same function is available in the JCICS Container class.

**APPEND**

Specifies that the data passed to the container is appended to the existing data in the container. If this option is not stated, the existing data in the container is overwritten by the data passed to the container.

For more information, see PUT CONTAINER.

**QUERY SECURITY**

The **QUERY SECURITY** command is changed to include a new resource type of EPADAPTERSET.

For more information, see QUERY SECURITY.

**START and START CHANNEL**

The **EXEC CICS START** and **EXEC CICS START CHANNEL** commands are enhanced to support identity propagation. If an **ICRX** is available and neither **USERID** nor **TERMID** are specified, the ICRX is propagated to the new task.

For more information, see START in Reference -> Application development and START CHANNEL in Reference -> Application development.

## VERIFY PASSWORD and VERIFY PHRASE

The **EXEC CICS SIGNON** command uses the **RACROUTE REQUEST=VERIFY** macro to make a full verification request to the external security manager. However, the **EXEC CICS VERIFY PASSWORD** and **EXEC CICS VERIFY PHRASE** commands normally use the **RACROUTE REQUEST=EXTRACT** macro to verify a user's password. If password verification fails, CICS then uses the **RACROUTE REQUEST=VERIFYX** macro to make a full verification request.

The **RACROUTE REQUEST=EXTRACT** macro does not make RACF record the login as the last access for the user ID, or write user statistics for the user ID. User IDs that are only used with login processes involving password verification can therefore appear to be unused, and could be revoked.

If you specify the system initialization parameter **SECVFYFREQ=USRDELAY** for the CICS region, CICS enforces a full verification request at least once a day for each user ID that is used to log on to the CICS region. The full verification request using the **RACROUTE REQUEST=VERIFYX** macro makes RACF record the date and time of last access for the user ID, and write user statistics. The behavior of your applications is the same whether or not you specify the **SECVFYFREQ** system initialization parameter. CICS checks the user ID at user login and replaces the password verification request with a full verification request when necessary.

Because the full verification request has a higher processor cost and response time than password verification, you might notice a slight performance impact when you specify the **SECVFYFREQ** system initialization parameter. The extent of the performance impact depends on your setting for the **USRDELAY** system initialization parameter for the CICS region. When you specify **SECVFYFREQ**, CICS makes a full verification request for a user ID when the user logs on after the **USRDELAY** interval has expired. CICS also applies a maximum limit of one day between full verification requests at user login. If your **USRDELAY** parameter is set to less than 1440 minutes (1 day), a full verification request takes place at user login more frequently than once a day.

For more information, see **VERIFY PASSWORD** and **VERIFY PHRASE**.

## Changed API commands in CICS TS 4.2

These API commands were extended or changed in CICS Transaction Server for z/OS, Version 4 Release 2.

### QUERY SECURITY

The **QUERY SECURITY** command is changed to include a new resource type of **EPADAPTER**.

For more information, see **QUERY SECURITY**.

### SIGNON

The **SIGNON** command is changed to support password phrases as well as standard passwords.

For more information, see **SIGNON**.



## WRITEQ TS

The MAIN and AUXILIARY options on the WRITEQ TS command have been enhanced with IPIC support for function-shipped requests between CICS TS 4.2 regions or later. Previously, the MAIN and AUXILIARY options were supported only by using the multiregion operation (MRO) facility. APPC does not support the MAIN and AUXILIARY options. Temporary storage queues (TSQs) created as a result of function shipping WRITEQ TS using APPC are stored in auxiliary storage.

For more information, see WRITEQ TS.

## Changed API commands in CICS TS 4.1

These API commands were extended or changed in CICS Transaction Server for z/OS, Version 4 Release 1.

### ASKTIME ABSTIME

The ABSTIME value that is returned by the **EXEC CICS ASKTIME** command is no longer rounded to the nearest 1/100 second. For more information, see “Changes to rounding for ASKTIME, CONVERTTIME, and FORMATTIME commands” on page 31.

### CONVERTTIME

A new time format RFC 3339 is available:

#### RFC 3339 format

The XML dateTime datatype, specified in RFC 3339, which is taken from the ISO 8601 standard. An example of a date and time stamp in this format is “2003-04-01T10:01:02.498Z”. Date and time stamps in this format are in UTC (Coordinated Universal Time), with the time zone offset (-12:00 to +12:00) indicated at the end of the date and time stamp, or the letter Z for a zero offset (+00:00). The decimal fraction of a second that is shown in the example is optional.

The command now converts all the supported time formats (not just RFC 1123 format) to local time for the ABSTIME that is returned. Also, the ABSTIME is no longer rounded to the nearest 1/100 second.

For more information about the change to rounding, see “Changes to rounding for ASKTIME, CONVERTTIME, and FORMATTIME commands” on page 31.

### EXTRACT TCPIP

New client options, CLNTADDR6NU and CLNTIPFAMILY, and server options, SRVRADDR6NU and SRVRIPFAMILY, return IPv6 address information. Existing options CADDRLENGTH, CLIENTADDR, SADDRLENGTH, and SERVERADDR are updated to return IPv6 information.

#### CADDRLENGTH(*data-area*)

Returns the length of the buffer supplied on the CLIENTADDR option, and is set to the length of the data returned to the application. If the CLIENTADDR is an IPv6 address, you must set the buffer length of CADDRLENGTH to at least 39 characters. If the data exceeds the buffer length, a LENGERR condition is raised and the data is truncated.

**CLIENTADDR**(*data-area*)

Returns a buffer containing the IP address of the client. The IP address can be in IPv4 or IPv6 format. IPv4 addresses are returned as native IPv4 dotted decimal addresses; for example, 1.2.3.4 IPv6 addresses are returned as native IPv6 colon hexadecimal addresses; for example, ::a:b:c:d

For information about IP addresses, see IP addresses in Product overview.

**CLNTADDR6NU**(*data-area*)

Returns a 16-byte field containing the IPv6 address of the client in binary form. This option is returned only if the option CLNTIPFAMILY has a value of IPV6. If the address is in IPv4 format, the address is returned in the CLNTADDRNU option and zeros are returned to CLNTADDR6NU.

**CLNTIPFAMILY**(*cvda*)

Returns the format of the IP address of the client. CVDA values are as follows:

- IPV4** CLIENTADDR returns a dotted decimal IPv4 address and CLIENTADDRNU returns the IPv4 address in binary form.
- IPV6** CLIENTADDR returns a colon hexadecimal IPv6 address and CLIENTADDR6NU returns the IPv6 address in binary form.

**NOTAPPLIC**

The source of the input has not been determined. 0.0.0.0 is returned.

**SADDRLENGTH**(*data-area*)

Returns the length of the buffer supplied on the SERVERADDR option, and is set to the length of the data returned to the application. If SERVERADDR is an IPv6 address, you must set the buffer length of SADDRLENGTH to at least 39 characters. If the data exceeds the buffer length, a LENGERR condition is raised and the data is truncated.

**SERVERADDR**(*data-area*)

Returns a buffer containing the IP address of the server. The IP address can be in IPv4 or IPv6 format. IPv4 addresses are returned as native IPv4 dotted decimal addresses, for example; 1.2.3.4. IPv6 addresses are returned as native IPv6 colon hexadecimal addresses; for example, ::a:b:c:d. If an error occurs, 0.0.0.0 is returned and the data is truncated.

**SRVRADDR6NU**(*data-area*)

Returns a 16-byte field containing the IPv6 address of the server in binary form. This option is returned only if the option SRVIPFAMILY has a value of IPV6. If the address is in IPv4 format, the address is returned in the SERVERADDRNU option and zeros are returned in SRVRADDR6NU.

**SRVIPFAMILY**(*cvda*)

Returns the format of the IP address of the server. CVDA values are as follows:

- IPV4** SERVERADDR returns a dotted decimal IPv4 address and SERVERADDRNU returns the IPv4 address in binary form.
- IPV6** SERVERADDR returns a colon hexadecimal IPv6 address and SERVERADDR6NU returns the IPv6 address in binary form.

**NOTAPPLIC**

The source of the input has not been determined. 0.0.0.0 is returned.

**FORMATTIME**

A new time format RFC 3339 and a new MILLISECOND option are available:

**MILLISECONDS(*data-area*)**

Returns the number of milliseconds in the current second specified by ABSTIME, as a binary integer in the range 0 - 999.

**STRINGFORMAT(*cvda*)**

Specifies the format for the architected date and time stamp string returned in DATESTRING.

**RFC3339**

Specifies the RFC 3339 format, also known as the XML dateTime datatype. This format is an implementation of the ISO 8601 standard, and it is suitable for Atom feeds. An example of a date and time stamp in this format is "2003-04-01T10:01:02.498Z". Date and time stamps in this format are in UTC (Coordinated Universal Time, which differs only slightly from GMT). This date and time stamp string contains the date and the 24-hour clock time, including a decimal fraction of the second. The decimal fraction of a second is optional in the specification, but the EXEC CICS FORMATTIME command always includes it. The time zone offset (-12:00 to +12:00) is indicated at the end of the date and time stamp, with the letter Z used for a zero offset (+00:00). The EXEC CICS FORMATTIME command always returns the time with a zero offset from UTC.

A formatted time that is returned by the **EXEC CICS FORMATTIME** command is no longer rounded up if the number of milliseconds is greater than 500. The time is now truncated, and the milliseconds value is available separately. For more information, see "Changes to rounding for ASKTIME, CONVERTTIME, and FORMATTIME commands" on page 31.

**INVOKE WEBSERVICE**

This command is deprecated. For all new Web service requester applications, use the **INVOKE SERVICE** command. The **INVOKE WEBSERVICE** command continues to work for all existing requester applications.

**WEB EXTRACT and EXTRACT WEB**

The HOST option is extended to support IPv6 addresses. A new option, HOSTTYPE, returns the format of the HOST option.

**HOST(*data-area*)**

For CICS as an HTTP server, HOST specifies a buffer to contain the host component of the URL, as specified either in the Host header field for the request or in the request line (if an absolute URI was used for the request). The port number is presented separately using the PORTNUMBER option.

For CICS as an HTTP client, with the SESSTOKEN option, HOST specifies a buffer to contain the host name of the server in the connection identified by the SESSTOKEN option. The port number is presented separately using the PORTNUMBER option.

An IPv4 or IPv6 address can represent the host name. IPv4 addresses are returned as native IPv4 dotted decimal addresses; for example, 1.2.3.4. IPv6 addresses are returned as native IPv6 colon hexadecimal addresses; for example, ::a:b:c:d

For information on IP addresses, see IP addresses in Product overview.

**HOSTTYPE**(*cvda*)

Returns the address format of the HOST option. CVDA values are as follows:

**HOSTNAME**

The HOST option contains a character host name. The IP address that corresponds to the host name is looked up in the domain name server.

**IPV4** The address is a dotted decimal IPv4 address.

**IPV6** The address is a colon hexadecimal IPv6 address.

**NOTAPPLIC**

An incorrect host address was returned (HOST=0.0.0.0).

**WEB OPEN**

The HOST option is extended to support IPv6 addresses.

**HOST**(*data-value*)

Specifies the host name on the server to which you want to connect. You can extract this information from a known URL using the WEB PARSE URL command, or from an existing URIMAP definition using the WEB EXTRACT URIMAP command. You can specify the URIMAP option to use this information directly from an existing URIMAP definition, in which case the HOST option is not required. Client HTTP connections can only be pooled for reuse when you specify the URIMAP option; using the HOST option does not enable connection pooling, even if you extract the information from a URIMAP definition.

A character host name, IPv4 address, or IPv6 address can represent the host name. If you specify an IPv6 address (or a host name that resolves to an IPv6 address), ensure that you are operating in a dual-mode (IPv4 and IPv6) environment and that the client or server that you are communicating with is also operating in a dual-mode (IPv4 and IPv6) environment.

For more information on IPv6, see Understanding IPv6 and CICS in Product overview.

You can specify IPv4 and IPv6 addresses in a number of formats. For information on IP addresses, see IP addresses in Product overview.

If you require a port number, you must not include the port number as part of the HOST option. Use the PORTNUMBER option instead.

**WEB PARSE URL**

The HOST option is extended to support IPv6 addresses. A new option, HOSTTYPE, returns the format of the HOST option.

**HOST**(*data-area*)

Returns the host component of the URL. This value can be either a character host name or a numeric IP address. If a port number is specified explicitly in the URL, the port number is returned separately as the PORTNUMBER option.

An IPv4 or IPv6 address can represent the host name. IPv6 addresses are returned as native IPv6 colon hexadecimal addresses, for example, ::a:b:c:d. If you specify an IPv6 address in a URL, for example, http://[::a:b:c:d]:80, HOST returns the address without brackets.

Use the characters X'BA' and X'BB' (code page 37) to represent square brackets when you specify IPv6 addresses.

For information on IP addresses, see IP addresses in Product overview.

#### **HOSTTYPE**(*cvda*)

Returns the address format of the HOST option. CVDA values are as follows:

##### **HOSTNAME**

The HOST option contains a character host name. The IP address that corresponds to the host name is looked up in the domain name server.

**IPV4** The address is a dotted decimal IPv4 address.

**IPV6** The address is a colon hexadecimal IPv6 address.

## **WSACONTEXT BUILD and WSACONTEXT GET**

The CICS translator now verifies that you have specified all of the required EPR options on the WSACONTEXT BUILD or WSACONTEXT GET command. If an application program specifies the EPRFROM, EPRSET, or EPRINTO option on a WSACONTEXT command but omits the EPRTYPE option, an empty WS-Addressing container is created. Alter, re-translate, and recompile any application programs that contain EXEC CICS WSACONTEXT commands with some, but not all, of the EPR options specified.

---

## **New API commands**

CICS Transaction Server for z/OS, Version 5 Release 2 includes some new API commands that you can use to create application programs that use new CICS functions.

### **New API commands added in CICS Transaction Server for z/OS, Version 5 Release 2**

#### **EXEC CICS VERIFY TOKEN**

Verify that a Kerberos token is valid, as determined by an external security manager, and optionally allow the caller to extract the RACF user ID that is associated with the principal in the Kerberos token.

#### **EXEC CICS INVOKE APPLICATION**

Invoke an application entry point program. **EXEC CICS INVOKE APPLICATION** allows invocation of an application by naming an operation that corresponds to one of its program entry points, without having to know the name of the application entry point program and regardless of whether the program is public or private.

### **New API commands added in CICS Transaction Server for z/OS, Version 5 Release 1**

#### **EXEC CICS FREEMAIN64**

Release storage that was acquired by using a GETMAIN or GETMAIN64 request. This command is for use only in non-Language Environment (LE) AMODE(64) assembler language application programs.

#### **EXEC CICS GETMAIN64**

Get 24-bit, 31-bit, or 64-bit storage. This command is for use only in non-Language Environment (LE) AMODE(64) assembler language application programs.

#### **EXEC CICS GET64 CONTAINER**

Retrieve data from a named channel container into 64-bit storage. This command is for use only in non-Language Environment (LE) AMODE(64)

assembler language application programs. CICS business transaction services (BTS) containers are not supported.

**EXEC CICS PUT64 CONTAINER**

Place data from 64-bit storage in a named channel container. This command is for use only in non-Language Environment (LE) AMODE(64) assembler language application programs. CICS business transaction services (BTS) containers are not supported.

**New API commands added in CICS Transaction Server for z/OS, Version 4 Release 2**

**EXEC CICS CHANGE PHRASE**

Change the password or password phrase recorded by an external security manager (ESM) for a specified user ID.

**EXEC CICS VERIFY PHRASE**

Verify that a password or password phrase matches the password or password phrase recorded by an external security manager.

**New API commands added in CICS Transaction Server for z/OS, Version 4 Release 1**

**EXEC CICS BIF DIGEST**

Calculate the SHA-1 digest of a string of data.

**EXEC CICS INVOKE SERVICE**

Call a service from a CICS application. The command specifies the name of a service or the CICS resource, such as a WEBSERVICE resource, that contains information about the service to be called.

**EXEC CICS SIGNAL EVENT**

Identify a place in an application program where one or more events could be emitted.

**EXEC CICS TRANSFORM DATATOXML**

Use the **TRANSFORM DATATOXML** command to convert application data to XML.

**EXEC CICS TRANSFORM XMLTODATA**

Use the **TRANSFORM XMLTODATA** command to convert XML to application data.

**EXEC CICS WEB READ QUERYPARM**

Read name and value pairs from a query string in a URL.

**EXEC CICS WEB STARTBROWSE QUERYPARM**

Start browsing query string data in a URL.

**EXEC CICS WEB READNEXT QUERYPARM**

Retrieve next name and value pair in query string data in a URL.

**EXEC CICS WEB ENDBROWSE QUERYPARM**

Finish browsing query string data in a URL.

**EXEC CICS WSACONTEXT BUILD**

Use the **WSACONTEXT BUILD** command to insert or replace WS-Addressing message addressing properties (MAPs) in the addressing context.

**EXEC CICS WSACONTEXT DELETE**

Use the **WSACONTEXT DELETE** command to delete the addressing context.

#### **EXEC CICS WSACONTEXT GET**

Use the **WSACONTEXT GET** command in a service provider to get the message addressing properties (MAPs) sent by the service requester. Use the **WSACONTEXT GET** command in a service requester to get the MAPs of the reply message.

#### **EXEC CICS WSAEPR CREATE**

Use the **WSAEPR CREATE** command to create an endpoint reference (EPR) to represent a Web service or Web service resource.

---

## **API commands that have been made threadsafe**

These application programming interface commands were not threadsafe when they were first introduced in CICS, but they have now been made threadsafe.

### **API commands that were made threadsafe in CICS Transaction Server for z/OS, Version 5 Release 2**

No existing API commands were made threadsafe in this release.

### **API commands that were made threadsafe in CICS Transaction Server for z/OS, Version 5 Release 1**

**DELETEQ TD:** This command is now threadsafe when it is used with a queue in a local CICS region, and when it is function shipped to a remote CICS region over an IPIC connection only. For other types of connections to remote CICS regions, the command is not threadsafe.

**WRITEQ TD:** In the same way as **DELETEQ TD**, this command is now threadsafe when it is used with a queue in a local CICS region, and when it is function shipped to a remote CICS region over an IPIC connection only.

**READQ TD:** In the same way as **DELETEQ TD**, this command is now threadsafe when it is used with a queue in a local CICS region, and when it is function shipped to a remote CICS region over an IPIC connection only.

### **API commands that were made threadsafe in CICS Transaction Server for z/OS, Version 4 Release 2**

**BIF DEEDIT**

**BIF DIGEST**

**CHANGE PASSWORD**

**DEFINE COUNTER** and **DEFINE DOUNTER**

**DELETE:** before CICS TS for z/OS, Version 4.2, this command was threadsafe when it was used with a file in a local CICS region, but it was not threadsafe when it was used with a file in a remote CICS region. The command is now threadsafe when it is function shipped to a remote CICS region over an IPIC connection only. For other types of connection to remote CICS regions, the command remains nonthreadsafe.

**DELETEQ TS:** before CICS TS for z/OS, Version 4.2, this command was threadsafe when it was used with a queue in main storage or auxiliary storage in a local CICS region, but it was not threadsafe when it was used with a queue in a remote CICS region. The command is now threadsafe when it is function shipped to a remote CICS region over an IPIC connection only. For other types of connection to remote CICS regions, the command remains nonthreadsafe. The command also remains nonthreadsafe when it is used with a queue in a shared temporary storage pool in a z/OS coupling facility managed by a temporary storage data sharing server (TS server).

**DELETE COUNTER** and **DELETE DOUNTER**



**ENDBR:** in the same way as **DELETE**, this command is now threadsafe when it is function shipped to a remote CICS region over an IPIC connection only.

**EXEC DLI**

**EXTRACT CERTIFICATE**

**EXTRACT TCPIP**

**GET COUNTER** and **GET DCOUNTER**

**LINK:** before CICS TS for z/OS, Version 4.2, this command was threadsafe when it was used to link to a program in a local CICS region, but it was not threadsafe when it was used to link to a program in a remote CICS region. The **LINK** command is now threadsafe when it is used to link to a program in a remote CICS region over an IPIC connection only. For other types of connection to remote CICS regions, the command remains nonthreadsafe.

**QUERY COUNTER** and **QUERY DCOUNTER**

**QUERY SECURITY**

**READ:** in the same way as **DELETE**, this command is now threadsafe when it is function shipped to a remote CICS region over an IPIC connection only.

**READQ TS:** in the same way as **DELETEQ TS**, this command is now threadsafe when it is function shipped to a remote CICS region over an IPIC connection only.

**READNEXT:** in the same way as **DELETE**, this command is now threadsafe when it is function shipped to a remote CICS region over an IPIC connection only.

**READPREV:** in the same way as **DELETE**, this command is now threadsafe when it is function shipped to a remote CICS region over an IPIC connection only.

**RESETBR:** in the same way as **DELETE**, this command is now threadsafe when it is function shipped to a remote CICS region over an IPIC connection only.

**REWIND COUNTER** and **REWIND DCOUNTER**

**REWRITE:** in the same way as **DELETE**, this command is now threadsafe when it is function shipped to a remote CICS region over an IPIC connection only.

**SIGNOFF**

**SIGNON**

**STARTBR:** in the same way as **DELETE**, this command is now threadsafe when it is function shipped to a remote CICS region over an IPIC connection only.

**SYNCPPOINT:** the Recovery Manager now processes this command on an open TCB wherever possible to minimize TCB switching.

**SYNCPPOINT ROLLBACK:** the Recovery Manager now processes this command on an open TCB wherever possible to minimize TCB switching.

**UNLOCK:** in the same way as **DELETE**, this command is now threadsafe when it is function shipped to a remote CICS region over an IPIC connection only.

**UPDATE COUNTER** and **UPDATE DCOUNTER**

**VERIFY PASSWORD**

**WRITE:** in the same way as **DELETE**, this command is now threadsafe when it is function shipped to a remote CICS region over an IPIC connection only.

**WRITEQ TS:** in the same way as **DELETEQ TS**, this command is now threadsafe when it is function shipped to a remote CICS region over an IPIC connection only.

## **API commands that were made threadsafe in CICS Transaction Server for z/OS, Version 4 Release 1**

No existing API commands were made threadsafe in this release.



---

## Changes to rounding for ASKTIME, CONVERTTIME, and FORMATTIME commands

Before CICS TS for z/OS, Version 4.1, ABSTIME values and formatted times returned by EXEC CICS commands were rounded up or down to the nearest hundredth of a second, but now they are always truncated, and the time is available in milliseconds. If you require the rounding behavior, you can code your application to perform rounding.

### EXEC CICS ASKTIME ABSTIME

The ABSTIME value that is returned by the **EXEC CICS ASKTIME** command is no longer rounded to the nearest 1/100 second. The absolute time returned is the system time-of-day clock, adjusted for leap seconds and the local timezone offset, truncated to the millisecond, and returned as a packed decimal of length 8 bytes. It therefore represents the number of milliseconds since 00:00 on 1 January 1900 in the local timezone and adjusted for daylight saving time.

### EXEC CICS CONVERTTIME

As for the **EXEC CICS ASKTIME** command, the ABSTIME value that is returned by the **EXEC CICS CONVERTTIME** command is no longer rounded to the nearest 1/100 second, but instead is truncated to the millisecond.

### EXEC CICS FORMATTIME

Before CICS TS 4.1, the **EXEC CICS FORMATTIME** command rounded up a returned time if the number of milliseconds was greater than 500, except in the case where the ABSTIME argument contained a value representing the half-second before midnight, when no rounding was performed, and the TIME option returned 23:59:59. This rounding is no longer carried out, and the returned time (for example, with the TIME option) is given with the number of completed seconds. You can use the new MILLISECONDS option to obtain the number of milliseconds, and you can perform your own rounding if you need to replicate the former behavior of the command.



---

## Chapter 4. Changes to the JCICS application programming interface

The JCICS application programming interface has new methods and other new elements to provide Java support for some of the new functions available through the **EXEC CICS** application programming interface.

The methods in the JCICS API do not map exactly to the functions available through the **EXEC CICS** API. For example, the function of a single **EXEC CICS** command might be provided by multiple JCICS methods, or some functions of an **EXEC CICS** command might not be supported by any JCICS method. This topic lists the changes to the JCICS API with the **EXEC CICS** commands that provide the same functions, but the JCICS method and **EXEC CICS** command do not necessarily provide equivalent functions.

### New JCICS methods in CICS Transaction Server for z/OS, Version 5 Release 2

A new method in the Task class returns the current application context of the task:

```
com.ibm.cics.server.Task.getApplicationContext()
```

The JCICS API provides an equivalent for the following new API command:

**INVOKE APPLICATION**

The support is provided by the following new JCICS class:

**com.ibm.cics.server.Application**

This class is the Java implementation of the **EXEC CICS INVOKE APPLICATION** command.

### New JCICS methods in CICS Transaction Server for z/OS, Version 5 Release 1

To support starting new CICS tasks from a Java application, a new class CICSExecutorService is available in JCICS. The class implements the Java ExecutorService interface that creates threads that can use the JCICS API to access CICS services. This class has a static method called runAsCICS().

### New JCICS methods in CICS Transaction Server for z/OS, Version 4 Release 1

To support functions that are provided by the **EXEC CICS EXTRACT TCP/IP** command, new JCICS methods are available in the TcpipRequest class, as follows:

```
com.ibm.cics.server.TcpipRequest.getClientHostAddress6()
com.ibm.cics.server.TcpipRequest.getServerHostAddress6()
com.ibm.cics.server.TcpipRequest.getClientIpFamily()
com.ibm.cics.server.TcpipRequest.getServerIpFamily()
```

To support functions that are provided by the **EXEC CICS SIGNAL EVENT** command, a new JCICS method is available in the Event and EventErrorException classes, as follows:

```
com.ibm.cics.server.Event
```

## EventErrorException

To support functions that are provided by the **EXEC CICS WEB EXTRACT** command, a new JCICS method is available in the `HttpRequest` and `HttpSession` classes, as follows:

```
com.ibm.cics.server.HttpRequest.getHostType()  
com.ibm.cics.server.HttpSession.getHostType()
```

To support functions that are provided by the **EXEC CICS WEB READ QUERYPARM** command and the associated browsing commands, new JCICS methods are available in the `HttpRequest` class to read and browse query parameters, as follows:

```
com.ibm.cics.server.HttpRequest.getQueryParam()  
com.ibm.cics.server.HttpRequest.startBrowseQueryParam()  
com.ibm.cics.server.HttpRequest.getNextQueryParam()  
com.ibm.cics.server.HttpRequest.endBrowseQueryParam()
```

---

## Chapter 5. Changes to resource definitions

Changes to the resource definitions available in CICS relate to new, changed, or obsolete CICS functions. The changes might involve complete resource definitions or individual attributes. The resource definitions supplied by CICS have corresponding changes, which you can implement by running the UPGRADE function of the CSD utility program (DFHCSDUP).

### Resources that can be defined and installed in CICS bundles

The updated BUNDLE resource has additional features to support the use of CICS bundles as part of applications that are deployed on platforms.

You can now create resource definitions in CICS bundles for the following additional resources:

- FILE
- JVMSERVER
- PIPELINE
- TCPIPService
- WEBSERVICE

The full list of CICS resource types for which you can create resource definitions in CICS bundles is as follows:

- FILE
- JVMSERVER
- LIBRARY
- PIPELINE
- PROGRAM
- TCPIPService
- TRANSACTION
- URIMAP
- WEBSERVICE

For the list of all artifacts that you can define and deploy in CICS bundles, including OSGi bundles and events, see [Artifacts that can be deployed in bundles in Administering](#).

Resources that you define in CICS bundles are dynamically installed in the CICS region when you install the BUNDLE resource. The resource signature for each resource shows the name of the CICS bundle that created and installed the resource.

You can modify the attributes of the dynamically generated resources listed here, but the changes are not cataloged and will not be recovered across a warm restart of CICS. If you want to change an attribute of a resource that was installed by a bundle, you should disable and discard the CICS bundle, and install a new version of the bundle with the required changes.

## Using existing CICS bundles with platforms and applications

CICS bundle projects created in the CICS Explorer® must have an ID and a version number to be included in an application project for deployment on a platform. CICS bundle projects that were created for releases before CICS Transaction Server Version 5 Release 1 did not have an ID and a version number. If you want to include these CICS bundle projects in your applications, use the CICS Bundle Manifest Editor in the CICS Explorer to add an ID and version number to the projects.

## IPIC override for default connections

If both an APPC or MRO connection (a CONNECTION resource definition) and an IPIC connection (an IPCONN resource definition) exist between two CICS regions, and both have the same name, the IPIC connection takes precedence. The following rules apply:

- The IPIC connection, which is defined in the IPCONN resource, overrides any default APPC or MRO connections with the same name, which are defined in the CONNECTION resource.
- If you have not configured an IPCONN resource or the IPCONN is not acquired but is in service, a CONNECTION resource with the same name is used.
- If an APPC or MRO connection is used and the CONNECTION resource is not configured, the command is not sent.

For more information about routing transactions between different levels of CICS using IPIC connections, see Chapter 23, “Communicating over IPIC with different levels of CICS,” on page 217.

---

## Obsolete resource definition types and attributes

Some resource definition types and some attributes are now obsolete. You must replace obsolete resource definitions, and obsolete attributes as appropriate.

### Resource definitions made obsolete in CICS Transaction Server for z/OS, Version 5 Release 2

#### DNSGROUP

The DNSGROUP attribute specifies the group name with which CICS registers to Workload Manager, for connection optimization. In TCPIP SERVICE definitions, DNSGROUP is obsolete and removed from CICS as part of the removal of support for DNS Connection Optimization. DNSGROUP is supported for CSD compatibility for earlier releases of CICS where it is still valid.

#### GRPCRITICAL

The GRPCRITICAL attribute marks the service as a critical member of the DNS group. In TCPIP SERVICE definitions, GRPCRITICAL is obsolete and removed from CICS as part of the removal of support for DNS Connection Optimization. GRPCRITICAL is supported for CSD compatibility for earlier releases of CICS where it is still valid.

## Resource definitions made obsolete in CICS Transaction Server for z/OS, Version 5 Release 1

### CORBASERVER

The CORBASERVER resource, used for defining the execution environment for enterprise beans and stateless CORBA objects, is obsolete and is removed.

**DJAR** The DJAR resource, used for defining a deployed JAR file in the local CICS region, is obsolete and is removed.

### REQUESTMODEL

The REQUESTMODEL resource, used for defining how an Internet Inter-ORB Protocol (IIOP) inbound request is mapped to the CICS transaction that is to be initiated, is obsolete, and is removed.

## Resource definition attributes made obsolete in CICS Transaction Server for z/OS, Version 5 Release 1

### JVMPROFILE in PROGRAM resource

The JVMPROFILE attribute in PROGRAM definitions is obsolete and is removed from CICS as part of the removal of support for JVM pool infrastructure. The attribute is supported for CSD compatibility for earlier releases of CICS where it is still valid.

## Resource definition attributes made obsolete in CICS Transaction Server for z/OS, Version 4 Release 2

### LSRPOOLID in LSRPOOL resource definitions

The LSRPOOLID attribute in LSRPOOL resource definitions is obsolete, but is supported to provide compatibility with earlier releases of CICS. The value specified for LSRPOOLID in existing definitions is transferred to the new option LSRPOOLNUM, which has values in the range 1 - 255, compared to the range 1 - 8 for LSRPOOLID. A value that you set for the new option LSRPOOLNUM is not transferred to the old option LSRPOOLID.

---

## Obsolete CICS-supplied resource definitions

Some CICS-supplied resource definition groups are now obsolete, and they have been removed from the CICS-supplied default startup group list, DFHLIST. If you use customized startup group lists, you must remove any obsolete definition groups from them.

## CICS-supplied resource definitions made obsolete in CICS Transaction Server for z/OS, Version 5 Release 2

No CICS-supplied resource definitions were made obsolete in CICS Transaction Server for z/OS, Version 5 Release 2.

## CICS-supplied resource definitions made obsolete in CICS Transaction Server for z/OS, Version 5 Release 1

### DFH\$CCI

CICS-supplied sample group **DFH\$CCI** is removed. This group contained sample resource definitions for the CICS CCI Connector that you could modify to suit your requirements.

**DFH\$EJB**

CICS-supplied resource definition group **DFH\$EJB** is removed. This group contained sample resource definitions for the EJB "Hello World" sample.

**DFH\$EJB2**

CICS-supplied sample group **DFH\$EJB2** is removed. This group contains sample resource definitions for the EJB "Bank Account" sample that you could modify to suit your requirements.

**DFH\$IIOP**

CICS-supplied sample group **DFH\$IIOP** is removed. This group contained sample resource definitions for the IIOP sample application that you could modify to suit your requirements.

**DFH\$JAVA**

CICS-supplied sample application program group **DFH\$JAVA** is removed. This group contained the resource definitions needed for the sample applications for Java support using VisualAge® for Java, Enterprise Edition for OS/390®. The same sample applications are defined for use with a JVM by the DFH\$JVM group.

**DFH\$JVM**

CICS-supplied sample group **DFH\$JVM** is removed. This group contained resource definitions for the Java sample programs that you could modify to suit your requirements.

**DFHADET**

CICS-supplied sample group **DFHADET** is removed. This group contained all of the definitions needed for the Resource Manager for Enterprise Beans and a file definition for DFHADEM.

**DFHADST**

CICS-supplied sample group **DFHADST** is removed. This group defined CREA, a CICS-supplied transaction that enabled the system programmer to create REQUESTMODEL definitions for the beans in an installed deployed JAR file.

**DFHCOMPB**

CICS-supplied sample group **DFHCOMPB** is removed. This group was required for compatibility with release CICS TS 2.3 .

**DFHEJBU**

CICS-supplied sample group **DFHEJBU** is removed. This group contained the program resource definition needed for the CICS EJB user-replaceable program, DFHEJEP. This program intercepted EJB events for the EJB application development tool.

**DFHIIOP**

CICS-supplied sample group **DFHIIOP** is removed. This group contained program resource definitions needed for using IIOP-based applications in CICS .

---

## Changed resource definitions

Some existing resource definitions have new attributes added, or have changes to the values or scope of existing attributes. You can use the new attributes to add support for new CICS functions. If you have resource definitions that use the changed attributes, check that the value you are using is still the best for your situation.



If you have existing resource definitions that were created before the new attributes for the resources were available, check those resource definitions after you upgrade to this CICS release, to ensure that the default values are suitable for your situation. In some situations, CICS enforces certain values for options if these are required for compatibility with existing options in your resource definition.

## **Changed resource definitions in CICS Transaction Server for z/OS, Version 5 Release 2**

### **DB2CONN resource definition: changed TCBLIMIT attribute**

The CICS-DB2 interface has been enhanced to detect a mismatch between the number of threads defined and the number of TCBs defined. If the sum of the THREADLIMIT value for the pool (specified in the DB2CONN) and the THREADLIMIT values for all the DB2ENTRIES exceeds the TCBLIMIT value in the DB2CONN, then message DFHDB2110 is issued.

### **TSMODEL resource definition: new EXPIRYINTMIN attribute**

A new attribute, EXPIRYINTMIN, specifies the expiry interval, in minutes, for a local temporary storage queue that matches the temporary storage model. For more information, see TSMODEL resources in Reference -> System definition.

### **TSMODEL resource definition: changed USAGE attribute**

Support for expiration of temporary storage queues has been extended to include shared temporary storage queues. The expiry interval specified on the TSMODEL resource definition has also been amended to allow an interval to be specified in minutes rather than hours. Existing models using hours are honored. New models should specify the interval in minutes. CICS rounds the minutes value up to a multiple of ten minutes.

## **Changed resource definitions in CICS Transaction Server for z/OS, Version 5 Release 1**

### **IPCONN resource definition: changed CIPHERS attribute**

The CIPHERS attribute formerly held a string of hexadecimal digits that is interpreted as a list of up to 28 2-digit cipher suite codes. It can now alternatively hold the name of a z/OS UNIX file that contains a list of cipher suites that can be used in an SSL connection.

### **IPCONN resource definition: changed NUMCIPHERS attribute**

If the CIPHERS attribute holds a file name, NUMCIPHERS is set to 0. The value of 0 can indicate either that there are no cipher suites in use, or that they are defined in a file.

### **TCPIPSERVICE resource definition: changed AUTHENTICATE attribute**

The value ASSERTED for the AUTHENTICATE attribute, which is used for authentication when an IIOP client communicates with the target server through an intermediate server, is now obsolete. The value is supported for CSD compatibility for earlier releases of CICS where it is still valid.

### **TCPIPSERVICE resource definition: changed BACKLOG attribute**

The default value was formerly BACKLOG(1); it is now BACKLOG(0). To obtain a backlog size of one request, specify it explicitly.

The attribute BACKLOG(0) formerly had the effect of preventing CICS receiving any connections. The new behavior is to take the backlog value from the value of the TCP/IP configuration attribute SOMAXCONN. To prevent CICS from receiving connections, close the TCPIPSERVICE.

**TCPIPService resource definition: changed CIPHERS attribute**

The CIPHERS attribute formerly held a string of hexadecimal digits that is interpreted as a list of up to 28 2-digit cipher suite codes. It can now alternatively hold the name of a z/OS UNIX file that contains a list of cipher suites that can be used in an SSL connection.

**TCPIPService resource definition: changed NUMCIPHERS attribute**

If the CIPHERS attribute holds a file name, NUMCIPHERS is set to 0. The value of 0 can indicate either that there are no cipher suites in use, or that they are defined in a file.

**TCPIPService resource definition: changed TYPE attribute**

The value IIOP for the TYPE attribute is now obsolete. The value is supported for CSD compatibility for earlier releases of CICS where it is still valid.

**URIMAP resource definition: changed CIPHERS attribute**

The CIPHERS attribute formerly held a string of hexadecimal digits that is interpreted as a list of up to 28 2-digit cipher suite codes. It can now alternatively hold the name of a z/OS UNIX file that contains a list of cipher suites that can be used in an SSL connection.

**URIMAP resource definition: changed NUMCIPHERS attribute**

If the CIPHERS attribute holds a file name, NUMCIPHERS is set to 0. The value of 0 can indicate either that there are no cipher suites in use, or that they are defined in a file.

**URIMAP resource definition: changed USAGE attribute**

The USAGE attribute has a new value of JVMSEVER. This value specifies that the URI map is used to map web requests to a Java servlet or JSP application that is running in a JVM server. For more information, see URIMAP resources in Reference -> System definition.

**Changed resource definitions in CICS Transaction Server for z/OS, Version 4 Release 2****FILE resource definition: new LSRPOOLNUM attribute**

A new attribute, LSRPOOLNUM, specifies the identifier of the local shared resource pool. The value must be in the range 1 - 255. For more information, see FILE resources in Reference -> System definition.

**LSRPOOL resource definition: new LSRPOOLNUM attribute**

A new attribute, LSRPOOLNUM, specifies the identifier of the local shared resource pool. The value must be in the range 1 - 255. For more information, see LSRPOOL resources in Reference -> System definition.

**PROGRAM resource definition: changed CONCURRENCY attribute**

The CONCURRENCY option of the PROGRAM resource now allows you to specify the new option REQUIRED.

**PROGRAM resource definition: new JVMSEVER attribute**

A new attribute, JVMSEVER, specifies the name of the JVMSEVER resource that you want to use to run a Java program. A JVMSEVER resource represents the JVM server runtime environment in CICS. For more information, see JVMSEVER resources in Reference -> System definition.

**TCPIPService resource definition: new MAXPERSIST attribute**

A new attribute, MAXPERSIST, specifies the maximum number of persistent connections from Web clients that the CICS region allows for this port at any one time. For more information, see TCPIPService resources in Reference -> System definition.

**TSMODEL resource definition: new EXPIRYINT attribute**

A new attribute, EXPIRYINT, specifies the expiry interval, in hours, for a local temporary storage queue that matches the temporary storage model. For more information, see TSMODEL resources in Reference -> System definition.

**URIMAP resource definition: new SOCKETCLOSE attribute**

A new attribute, SOCKETCLOSE, specifies if, and for how long, CICS keeps a client HTTP connection open for reuse after the CICS application has finished using it. For more information, see URIMAP resources in Reference -> System definition.

**WEBSERVICE resource definition: new ARCHIVEFILE attribute**

A new attribute, ARCHIVEFILE, specifies the 1- to 255-character fully-qualified file name of an archive that contains one or more WSDL files. The supported format for the archive is .zip. For more information, see WEBSERVICE resources in Reference -> System definition.

**Changed resource definitions in CICS Transaction Server for z/OS, Version 4 Release 1****URIMAP resource definition: additional use for USAGE(CLIENT)**

Delivery of the HTTP EP adapter for event processing in CICS is supported by an additional use for the URIMAP resource definition. When using the HTTP EP adapter, you must specify a URIMAP with USAGE(CLIENT) in your URIMAP definition.

**TERMINAL and TRANSACTION resource definitions: changed REMOTESYSTEM attribute**

The REMOTESYSTEM attribute of the TERMINAL and TRANSACTION resources now allows you to specify information about IP connections.

**IPCONN resource definition: new IDPROP attribute**

A new attribute, IDPROP, specifies whether the distributed identity is transmitted to the connected system by the sender. For more information, see IPCONN resources in Reference -> System definition.

**IPCONN resource definition: changed HOST attribute**

The HOST attribute of the IPCONN resource has been extended to allow IPv6 addresses.

**URIMAP resource definition: new ATOM value for the USAGE attribute, and new ATOMSERVICE and AUTHENTICATE attributes**

When you specify ATOM, you create a URIMAP definition for an Atom feed. The URIMAP resource maps the request URI to an ATOMSERVICE resource, which defines an Atom document.

The attributes in the URIMAP resource definition that can be used for USAGE(ATOM) are ATOMSERVICE, GROUP, DESCRIPTION, STATUS, HOST (which can be specified as an asterisk), PATH, SCHEME, TCPIPSERVICE, TRANSACTION, USERID, REDIRECTTYPE, and LOCATION. For the TRANSACTION attribute, the default alias transaction for USAGE(ATOM) is CW2A, which runs the web 2.0 alias program DFHW2A.

A new attribute ATOMSERVICE specifies the name of the ATOMSERVICE resource definition for the Atom feed.

A new attribute **AUTHENTICATE** specifies whether to send HTTP basic authentication information to the HTTP server. For more information about all these attributes, see URIMAP resources in Reference -> System definition.

#### **URIMAP resource definition: changed HOST and PATH attributes**

The **HOST** attribute of the URIMAP resource has been extended to allow IPv6 addresses to be specified. The **HOST** and **PATH** attributes of URIMAP definitions also now support IRIs (Internationalized Resource Identifiers), which permits the use of characters and formats that are suitable for national languages other than English.

- To accommodate the requirements of domain name servers, web clients convert the host name in an IRI into a format called Punycode. If you want to use an IRI as the link for a web resource or Atom feed that is served by CICS, in the URIMAP resource that defines the web client's request to CICS, you must specify the host name in Punycode. CICS does not provide a tool to carry out this conversion, but free applications are available on the Internet to support the conversion of Unicode to Punycode. If you use an asterisk (\*) instead of a specific host name, to make the URIMAP resource match any host name, you do not need to use Punycode.
- Web clients do not convert the path component of an IRI into Punycode, but they do escape, or percent-encode, Unicode characters in the path. If you are using an IRI for a web resource that is served by CICS, in the URIMAP resource definition, you must percent-encode any Unicode characters in the path that you specify. If you do not have an application that can convert Unicode characters to percent-encoded representations, free applications are available on the Internet to perform this task.

---

## **New resource definitions**

You can use the new resource definitions that are available in CICS Transaction Server for z/OS, Version 5 Release 2 to define support for new CICS functions.

### **New resource definitions in CICS Transaction Server for z/OS, Version 5 Release 2**

No new resource definition types were added in this release.

### **New resource definitions in CICS Transaction Server for z/OS, Version 5 Release 1**

No new resource definition types were added in this release.

### **New resource definitions in CICS Transaction Server for z/OS, Version 4 Release 2**

No new resource definition types were added in this release.

### **New resource definitions in CICS Transaction Server for z/OS, Version 4 Release 1**

#### **New ATOMSERVICE resource definition**

The new **ATOMSERVICE** resource defines an Atom service, feed, collection, or category document, and identifies the Atom configuration file, CICS

resource or application program, and XML binding that are used to supply the data for the feed. For more information, see ATOMSERVICE resources in Reference -> System definition.

#### **New BUNDLE resource definition**

The new BUNDLE resource defines the resources and artifacts associated with a bundle, which is a unit of deployment for an application. For more information, see BUNDLE resources in Reference -> System definition.

#### **New JVMSERVER resource definition**

The new JVMSERVER resource defines the runtime environment for a JVM server. For more information, see JVMSERVER resources in Reference -> System definition.

#### **New MQCONN resource definition**

The new MQCONN resource definition defines the attributes of the connection between CICS and WebSphere MQ. When you install an MQCONN resource definition that includes a setting for the INITQNAME attribute, CICS also installs an implicit MQINI resource definition. For more information, see MQCONN resources in Reference -> System definition.

---

## **New CICS-supplied resource definition groups**

New groups of CICS-supplied resource definitions are added to your CSD when you run the UPGRADE command.

### **DFHEP**

The CICS-supplied group DFHEP, introduced in CICS Transaction Server for z/OS, Version 4 Release 1, contains PROFILE definitions for event processing.

Group DFHEP was added to DFHLIST with profile definitions for programs DFHECEAH, DFHECEAM, DFHECEAS, and DFHECEAT and transactions CEPH, CEPQ, CEPS, and CEPT.

### **DFHFCRL**

The CICS-supplied group DFHFCRL, introduced in CICS Transaction Server for z/OS, Version 5 Release 2, contains definitions for new file control resources.

Group DFHFCRL is in DFHLIST. It contains a TRANSACTION resource definition for transaction CFCR, which is used by CICS to disable files that are defined in CICS bundles, and a PROGRAM resource definition for the program DFHFCRN which it runs.

### **DFHPIVAL**

The CICS-supplied group DFHPIVAL, introduced in CICS Transaction Server for z/OS, Version 5 Release 1, contains the SOAP message validation program, DFHPIVAL.

The DFHPIVAL program definition was previously in the DFHPIPE group. In the new DFHPIVAL group, it can be edited to change the JVM server to which it refers. The default is the sample JVM server, DFHJVMS.

## DFHRL

The CICS-supplied group DFHRL, introduced in CICS Transaction Server for z/OS, Version 4 Release 1, contains the resource definitions for application bundles support.

The group contains the following definitions:

**PROGRAM definitions**

DFHRLMF, DFHRLR, DFHRLSC, and DFHRLVC.

**TRANSACTION definition**

CRLR

## DFHRS

The CICS-supplied group DFHRS, introduced in CICS Transaction Server for z/OS, Version 4 Release 1, contains the resource definitions for region status.

The group contains the following definition:

**PROGRAM definition**

DFHRSFDL

## DFHWEB2

The CICS-supplied group DFHWEB2, introduced in CICS Transaction Server for z/OS, Version 4 Release 1, contains the resource definitions for Atom feed support.

The group contains:

**PROGRAM definitions**

DFHW2A, DFHW2ER, DFHW2FI, DFHW2FR, and DFHW2TS.

**TRANSACTION definition**

CW2A

## DFHWU

The CICS-supplied group DFHWU, introduced in CICS Transaction Server for z/OS, Version 4 Release 1, contains the resource definitions for CMCI.

The group contains the following definitions:

**PROGRAM definitions**

DFHWUIPG, DFHWUIPI, DFHWUIP1, DFHWUIP2, DFHWUIP3,  
DFHWUIP4, DFHWUIP5, DFHWUIP6, and DFHWUSRT

**TRANSACTION definition**

CWWU

**DOCTEMPLATE definitions**

DFHWUIPI, DFHWUIP1, DFHWUIP2, DFHWUIP3, DFHWUIP4,  
DFHWUIP5, and DFHWUIP6

---

## Changed CICS-supplied resource definition groups

Changed groups of CICS-supplied resource definitions are added to your CSD when you run the UPGRADE command.

### Changed CICS-supplied resource definition groups in CICS TS 5.2

**DFHPGAIP**

The resource definitions for programs DFHPGADX, DFHPGAHX, DFHPGALX, and DFHPGAOX now specify CONCURRENCY(THREADSAFE).

For more information, see “DFHPGAIP” on page 46

## **Changed CICS-supplied resource definition groups in CICS TS 5.1**

### **DFH\$AFLA**

All programs are now DATALOCATION(ANY).

All transactions are now TASKDATALOC(ANY).

### **DFH\$DB2**

Programs DFJ\$DSDB, DFJ\$DSPU, and DFJ\$DSRE are removed.

Transactions DSDB, DSPU and DSRE are removed.

### **DFHDB2**

Program DFHD2EDF is marked thread safe.

### **DFHDCTG**

Transient data queues CADS and CMPO are added.

### **DFHEDF**

Program DFHEDFX is marked threadsafe.

Programs DFHEIGDS, DFHEITAB, DFHSMTAB are changed to DATALOCATION(ANY).

### **DFHEP**

Transaction CEPS has been added.

### **DFHEPI**

Program DFHEITSZ is changed to DATALOCATION(ANY).

### **DFHINQUI**

Program DFHEITBS is changed to DATALOCATION(ANY).

### **DFHIPECI**

Transaction CIEP is changed to TASKDATALOC(ANY) and PRIORITY(255).

### **DFHISC**

The storage location is changed for the mirror transactions defined in the CICS-supplied group DFHISC.

For more information, see “DFHISC” on page 47

### **DFHISCIP**

Programs DFHISPHP and DFHISPRP are added.

Transactions CISC and CISS are changed to DTIMOUT(NO).

Transactions CISP and CIS1 are added.

Profile definition DFHCICSC is added

For more information, see “DFHISCIP” on page 47

### **DFHISCQ**

Transaction CQPI and CQPO are changed to TASKDATALOC(ANY).

### **DFHJAVA**

Programs DFHDLLOD, DFHEJDNX, DFHJVCVT, DFHSJGC, DFHSJPI, DFJCICS, DFJCICSB, DFJCZDTC, DFJ1ESN, DFJ1ICS, DFJ1ICSB, DFJ1ZDTC are removed.



Program DFHSJITL is added.

Transactions CJGC and CJPI are removed.

Transactions is CJSA, CJSR are added.

#### **DFHMQ**

Program DFHMQBP3 is added.

Transaction CKBC is added.

#### **DFHOPER**

Transactions CBAM, CEMT, CEOT, CEST, and CETR are now TASKDATALOC(ANY).

#### **DFHPIPE**

Program DFHPIVAL is added.

#### **DFHRMI**

Transaction CRSY is now TASKDATALOC(ANY).

#### **DFHROFA**

All programs are now DATALOCATION(ANY).

All transactions are now TASKDATALOC(ANY).

#### **DFHROFT**

All transactions are now TASKDATALOC(ANY).

#### **DFHSIGN**

All transactions are now TASKDATALOC(ANY).

#### **DFHSTAND**

Program DFHPIITL is added.

Programs DFHEJITL, DFHPIITL, DFHSJITL, DFJDESN are removed.

Transactions CEJR and CJSR are removed.

Transactions CSAC and CXCU are now TASKDATALOC(ANY).

#### **DFHSWIT**

Transaction CMSG is now TASKDATALOC(ANY).

## **DFHPGAIP**

In CICS TS 5.2, the definitions for the CICS-supplied default autoinstall program, in the CICS-supplied group DFHPGAIP, changed to specify CONCURRENCY(THREADSAFE) to avoid TCB switching during program autoinstall.

The resource definitions for the following programs now specify CONCURRENCY(THREADSAFE):

- DFHPGADX, Assembler program
- DFHPGAHX, C program
- DFHPGALX, PL/I program
- DFHPGAOX, COBOL program

If you are using the CICS-supplied default program for program autoinstall, examine any code added to the exit to ensure it is threadsafe. If the code is not threadsafe, you must either make changes to make it threadsafe, or change the resource definition to specify CONCURRENCY(QUASIRENT).



For more information about threadsafe programming techniques, see Threadsafe programs in Developing applications.

## DFHISC

In CICS TS 5.1, the storage location was changed for the mirror transactions defined in the CICS-supplied group DFHISC.

The TRANSACTION resource definitions for the CICS-supplied mirror transactions, CEHP, CEHS, CPMT, CSHR, CSMI, CSM1, CSM2, CSM3, CSM5, and CVMI, are changed to specify TASKDATALOC(ANY) instead of TASKDATALOC(BELOW). The changed resource definitions are included in the compatibility group DFHCOMPF.

The CICS-supplied mirror transactions use 31-bit storage (above 16 MB but below 2 GB). If an **EXEC CICS LINK** command is issued over DPL for an AMODE(24) application, an AEZA or AEZC abend will occur. To avoid this situation, do one of the following:

- Define your own mirror transaction that uses 24-bit storage. For example, you can copy a CICS-supplied mirror transaction, then specify the TASKDATALOC(BELOW) attribute.
- Modify the application so that it is AMODE(31) and update the appropriate program definition.

For more information about programming for mirror transactions, see Application programming for CICS DPL in Developing applications.

## DFHISCIP

In CICS TS 5.1, profile definition DFHCICSC was added to the CICS-supplied group DFHISCIP.

DFHCICSC is a profile definition for IP interconnectivity (IPIC) support and is used by transactions CISC and CISS, which run during IPCONN acquire processing. DFHCICSC has a default value of (0030) for the RTIMOUT parameter so that message transmissions during IPCONN acquire processing are subject to a read timeout of 30 seconds.

In CICS TS 4.2 and earlier releases, the profile DFHCICST is used by transactions CISC and CISS. If any changes for your installation have been made to profile DFHCICST it might be necessary to consider whether you need to change profile DFHCICSC.

---

## Changes to control tables (macro resource definition)

When upgrading to CICS Transaction Server for z/OS, Version 5 Release 2, reassemble all CICS control tables using the CICS TS 5.2 macro libraries, even if the macro externals have no changes. You must also reassemble any DFHCNV data conversion tables that you use, because CICS initialization fails if you try to load DFHCNV tables assembled using macros from an earlier release.

### DFHMCT monitoring control table

The performance class data fields added for CICS Transaction Server for z/OS, Version 5 Release 2, have corresponding new values, which can be defined on the INCLUDE and EXCLUDE operands of the DFHMCT TYPE=RECORD macro. You

can use these values to include or exclude specific fields from performance class monitoring records. Control data recording - DFHMCT TYPE=RECORD in the *CICS Resource Definition Guide* lists all the fields that can now be included or excluded using the macro.

The default for the COMPRESS option on the DFHMCT TYPE=INITIAL macro changed from NO to YES in CICS TS for z/OS, Version 4.1. If monitoring is active the monitor records are compressed automatically.

A new distributed program link option, DPLLIMIT, is available on the DFHMCT TYPE=INITIAL macro. This option specifies the maximum number of DPL requests for which CICS performs transaction resource monitoring.

## **DFHDCT, DFHRCT, DFHTCT, and DFHTST control tables**

Support for the DFHCSDUP MIGRATE command was withdrawn in CICS TS for z/OS, Version 4.1.

In previous versions of CICS, the DFHCSDUP MIGRATE command migrated the eligible DFHDCT, DFHRCT, DFHTCT, and DFHTST macro resource definitions to the CICS system definition data set (CSD).

If you still have eligible but unmigrated definitions, you must migrate them to the CSD before you upgrade to CICS Transaction Server for z/OS, Version 5 Release 2. To do so, you can use the DFHCSDUP MIGRATE command on any supported release up to CICS TS for z/OS, Version 3.2.

## **DFHDCT destination control table**

The DFHDCT macro is no longer shipped with CICS from CICS TS for z/OS, Version 5.1.

---

## Chapter 6. Changes to the system programming interface

CICS Transaction Server for z/OS, Version 5 Release 2 has some new SPI commands to control new system resources, and some existing commands have new options, or new values for existing options. Some system programming commands, options, or values are now obsolete because they relate to obsolete CICS functions.

### Program compatibility

The system programming commands operate on CICS system resources, such as control blocks and tables of resource definitions, and not on user resources, such as data, on which the API operates.

The SPI is also sensitive to the underlying environment in which it is implemented and, as a consequence, compatibility with future releases of CICS cannot be guaranteed.

This section describes the effect on the SPI of the functional changes in CICS, explaining where incompatibilities exist, to enable you to make programming changes where necessary.

Except for the instances given in this section, CICS continues to provide compatibility with future releases, at source and object level, for application programs that use the unaffected SPI commands.

---

## Obsolete SPI commands and options

These system programming interface commands and options are obsolete. Remove these commands and options from your applications, because they represent functions that are no longer available, so the behavior of applications that use these commands changes.

### Obsolete SPI options in CICS Transaction Server for z/OS, Version 5 Release 2

#### INQUIRE TCPIPService

The DNSSTATUS option is obsolete. DNSSTATUS was used to specify the Domain Name System (DNS) and Workload Manager (WLM) registration status of a service.

#### SET TCPIPService

The DNSSTATUS and DNSGROUP options are obsolete. DNSSTATUS was used to specify the Domain Name System (DNS) and Workload Manager (WLM) registration status of a service. DNSGROUP was used to specify the group name with which CICS registered to Workload Manager for connection optimization.

### Obsolete SPI commands in CICS Transaction Server for z/OS, Version 5 Release 1

If you use these obsolete system programming commands in new or existing CICS application programs, CICS returns responses as follows:

- If you translate a program that includes any of the commands, the CICS translator returns a warning.
- If you run a program that includes any of the DISCARD, INQUIRE, or SET commands, CICS returns a NOTFND response.
- If you run a program that includes any of the CREATE commands, CICS returns an INVREQ response with a RESP2 value of 687.

For any commands that support a browse option, a NORMAL condition is returned for the START browse and END browse operations, and the END condition is returned for the NEXT browse operation.

#### **CREATE CORBASERVER**

Define a CorbaServer in the local CICS region.

#### **CREATE DJAR**

Define a deployed JAR file in the local CICS region.

#### **CREATE REQUESTMODEL**

Define a request model in the local CICS region.

#### **DISCARD CORBASERVER**

Remove the definition of a CorbaServer from the system, together with any associated deployed JAR files and beans.

#### **DISCARD DJAR**

Remove the definition of a specified deployed JAR file from the system, together with any associated beans.

#### **DISCARD REQUESTMODEL**

Remove a request model definition.

#### **INQUIRE BEAN**

Retrieve information about an installed enterprise bean.

#### **INQUIRE CLASSCACHE**

Retrieve information about the shared class cache for pooled JVMs in the CICS region, and report the presence of any old shared class caches that are awaiting deletion.

#### **INQUIRE CORBASERVER**

Retrieve information about a particular CorbaServer.

#### **INQUIRE DJAR**

Retrieve information about a DJAR definition.

#### **INQUIRE JVM**

Identify pooled JVMs in a CICS region and report their status.

#### **INQUIRE JVMPOOL**

Retrieve information about the pool of JVMs in the CICS address space.

#### **INQUIRE JVMPROFILE**

Identify JVM profiles that have been used in a CICS region for pooled JVMs.

#### **INQUIRE REQUESTMODEL**

Retrieve information about a request model.

#### **INQUIRE WORKREQUEST**

Retrieve information about work requests in the local CICS region. Use the INQUIRE ASSOCIATION command in place of this command.

**PERFORM CLASSCACHE**

Initialize and terminate the shared class cache that is used by pooled JVMs in the CICS region.

**PERFORM CORBASERVER**

Perform certain actions against a specified CorbaServer.

**PERFORM DJAR**

Perform certain actions against a specified DJAR.

**PERFORM JVMPOOL**

Start and terminate JVMs in the JVM pool.

**SET CLASSCACHE**

Set the status of autostart for the shared class cache that is used by pooled JVMs in the CICS region.

**SET CORBASERVER**

Set various attributes of a specified CorbaServer.

**SET JVMPOOL**

Enable or disable the JVM pool and set JVM tracing options.

**SET WORKREQUEST**

Purge or force purge a specific local task.

**Obsolete SPI options in CICS Transaction Server for z/OS, Version 5 Release 1****COLLECT STATISTICS**

The BEAN, CORBASERVER, JVMPOOL, JVMPROFILE, and REQUESTMODEL options are obsolete. If you run a program that includes any of these options, CICS returns a NOTFND response with a RESP2 value of 0.

**CSD INSTALL**

The CORBASERVER, DJAR, and REQUESTMODEL options are obsolete. If you run a program that includes any of these options for the CSD INSTALL command, CICS returns an INVREQ response with a RESP2 value of 687.

**INQUIRE DISPATCHER**

The ACTJVMTCBS option and the MAXJVMTCBS option are obsolete. ACTJVMTCBS was used to inquire on the number of J8 and J9 mode TCBs currently allocated to user tasks. MAXJVMTCBS was used to inquire on the maximum number of J8 and J9 mode TCBs allowed in the JVM pool.

**PERFORM STATISTICS RECORD**

The BEAN, CORBASERVER, JVMPOOL, JVMPROFILE, and REQUESTMODEL options are obsolete. If you run a program that includes any of these options, CICS returns a normal response but does not record any statistics for those resource types.

**SET DISPATCHER**

The MAXJVMTCBS option is obsolete. MAXJVMTCBS was used to change the maximum number of J8 and J9 mode open TCBs allowed in the JVM pool, which no longer exists.

## Obsolete SPI commands and options in CICS Transaction Server for z/OS, Version 4 Release 2

### CREATE FILE

The LSRPOOLID option is obsolete. Use the new option LSRPOOLNUM instead. If you do use LSRPOOLID in any CICS SPI command, CICS transfers the value that you specify to LSRPOOLNUM.

### CREATE LSRPOOL

The LSRPOOLID option is obsolete, but is supported to provide compatibility with earlier releases of CICS. Use the new option LSRPOOLNUM instead, which has values in the range 1 - 255, compared to the range 1 - 8 for LSRPOOLID. If you do use LSRPOOLID in any CICS SPI command, CICS transfers the value that you specify to LSRPOOLNUM.

### INQUIRE FILE

The LSRPOOLID option is obsolete. Use the new option LSRPOOLNUM instead. If you do use LSRPOOLID in any CICS SPI command, CICS transfers the value that you specify to LSRPOOLNUM.

### SET FILE

The LSRPOOLID option is obsolete. Use the new option LSRPOOLNUM instead. If you do use LSRPOOLID in any CICS SPI command, CICS transfers the value that you specify to LSRPOOLNUM.

---

## Changed SPI commands

A number of existing system programming interface commands have new options or changes to the values that are available for options.

### Inquiring on private resources for applications

A resource that is defined as part of an application installed on a platform is private to that version of that application. For supported resource types, a resource is private if the resource is defined in a CICS bundle that is packaged and installed as part of an application, either as part of the application bundle, or as part of the application binding bundle. A resource that is defined by any other method is publicly available for all tasks, and is known as a public resource.

The following CICS resources are supported as private resources for applications:

- **LIBRARY** resources, which represent one or more data sets, known as dynamic program **LIBRARY** concatenations, from which program load modules can be loaded.
- **PROGRAM** resources, which represent an application program. A program that is auto-installed by a task for an application that is deployed on a platform is also private to that version of the application.

You can inquire on or browse private resources using the **EXEC CICS INQUIRE** system programming command for the resource type. By default, CICS searches for the resources that are available to the program where the **EXEC CICS INQUIRE** command is issued. You can also choose to browse private resources for a specified application.

- When you issue an **EXEC CICS INQUIRE** command from a public program, information is returned about the named public resource. If the resource is not available as a public resource, a “not found” response is returned.

- When you issue an **EXEC CICS INQUIRE** command from a program that is running under a task for an application deployed on a platform, information is returned about the named private resource for that application, if it exists. If the application does not have a private resource with that name, information is returned about a public resource with the specified name. If the resource is not available as a private resource for that application or as a public resource, a “not found” response is returned.
- When you use an **EXEC CICS INQUIRE** command in browse mode from a public program, if you do not specify any other input parameters, the set of public resources of the specified type is returned. If the same browse command is issued from a program that is running under a task for an application deployed on a platform, the browse returns a set of resources consisting of any private resources of the specified type for the application, and the public resources of the specified type.
- To browse the private resources for an application, from either a public program or a private program, issue the **EXEC CICS INQUIRE** command with the **START** option and specify as input the application context, consisting of the platform, application, and application version. The browse returns a set of resources consisting of only the private resources of the specified type for the application. If no application is found with the specified application context, the **APPNOTFOUND** condition is returned.

For more information about browsing private resources, including examples of browsing resources for a different application from the application where you issue the command, see Browsing resource definitions in Developing system programs.

## CREATE TSMODEL

A new option **EXPIRYINTMIN** is added to the **CREATE TSMODEL** command.

### **EXPIRYINTMIN**(**{0|number}**)

Specifies the expiry interval, in minutes, for a temporary storage queue that matches this model. CICS uses the value rounded up to the nearest multiple of 10 minutes. The interval count begins after each use of the temporary storage queue. If the queue is not used again before the expiry interval is reached, the queue becomes eligible for CICS to delete it automatically.

**0** No expiry interval applies to temporary storage queues that match this model, and they are never eligible for automatic deletion. This setting is the default.

*number*

An expiry interval in minutes, in the range 1 - 900000. After this expiry interval, a temporary storage queue that matches this model becomes eligible for automatic deletion if it has not been used again.

Expiry intervals apply to temporary storage queues in the following locations:

- Main temporary storage in the local CICS region.
- Nonrecoverable auxiliary temporary storage (DFHTEMP data set) associated with the local CICS region.
- Temporary storage queues in shared temporary storage pools (CICS TS 5.2 and higher).

Expiry intervals do not apply to the following types of temporary storage queues, so CICS never deletes them automatically:

- Queues in auxiliary temporary storage that are defined as recoverable.



- Queues in a remote CICS region. To make CICS delete remote temporary storage queues, specify an expiry interval in a suitable TSMODEL resource definition in the region that owns the queues.
- Queues that CICS creates for its own use.

If you change the expiry interval in a TSMODEL resource definition, existing temporary storage queues that match the model are not affected. Those queues continue to use the expiry interval that applied when they were created. If all the TSMODEL resource definitions with a nonzero expiry interval are deleted from a CICS region, CICS stops scanning for expired temporary storage queues.

## EXTRACT STATISTICS and COLLECT STATISTICS

When you use the **EXEC CICS EXTRACT STATISTICS** or **EXEC CICS COLLECT STATISTICS** command to request resource statistics for a specific resource of a resource type that is supported as a private resource, the command operates according to the context in which the task is running.

- If the command is issued from a public program, statistics are returned for the named public resource.
- If the command is issued from a program that is part of an application deployed on a platform, so is running with an application context, the private resources for the application are searched first for the named resource. If a private resource is not found, statistics are returned for the named public resource.
- For the **EXEC CICS EXTRACT STATISTICS** command only, you can specify a different application context to be searched for private resources. When you request statistics for a different application, if a private resource is not found for that application, no statistics are returned.

When you use the **EXEC CICS EXTRACT STATISTICS** or **EXEC CICS COLLECT STATISTICS** command to return statistics for a specified program that is declared as an application entry point, only one statistics record is returned. If the command is issued in or for an application context, and the program was defined as a private resource for the application, the DSECT for private resources is used to format the data, even if the program has currently been promoted to a public program in order to make the application entry point available.

The following new options are added to the **EXTRACT STATISTICS** command to specify an application context:

### **APPLICATION** (*data-value*)

Specifies the application name element of the application context. The application name can be up to 64 characters in length.

Specify the application context to return statistics for a private resource that is part of an application deployed on a platform. Statistics for private resources can only be returned as specific, or resource, statistics for a named resource of the JVMPROGRAM, LIBRARY, PROGRAM, or PROGRAMDEF resource types, which are supported as private resources. You must specify a complete application context, including the platform name, application name, and full application version number. If the private resource that you name on the **RESID** option is not found in the specified application context, no statistics are returned.

You do not need to specify an application context if the command is issued from a program that is part of the relevant application. By default, CICS



returns statistics for a private resource from the application where the command is issued, or statistics for a public resource if no private resource can be found.

**APPLMAJORVER**(*data-value*)

Specifies the application major version element of the application context, in fullword binary form.

**APPLMICROVER**(*data-value*)

Specifies the application micro version element of the application context, in fullword binary form.

**APPLMINORVER**(*data-value*)

Specifies the application minor version element of the application context, in fullword binary form.

**PLATFORM**(*data-value*)

Specifies the platform name element of the application context. The platform name can be up to 64 characters in length.

## INQUIRE ASSOCIATION

New attributes ACAPPLNAME, ACMAJORVER, ACMICROVER, ACMINORVER, ACOPERNAME, and ACPLATNAME return the current application context for the application that is associated with the task:

**ACAPPLNAME**(*data-area*)

Returns, in a 64-character area, the name of the application that is associated with the task. If no application context is associated with the task, this option is blank.

**ACMAJORVER**(*data-area*)

Returns, in fullword binary form, the major version number of the application associated with the task. If no application context is associated with the task, this option returns 0.

**ACMICROVER**(*data-area*)

Returns, in fullword binary form, the micro version number of the application associated with the task. If no application context is associated with the task, this option returns 0.

**ACMINORVER**(*data-area*)

Returns, in fullword binary form, the minor version number of the application associated with the task. If no application context is associated with the task, this option returns 0.

**ACOPERNAME**(*data-area*)

Returns, in a 64-character area, the name of the application operation that is associated with the task. If no application context is associated with the task, this option is blank.

**ACPLATNAME**(*data-area*)

Returns, in a 64-character area, the name of the platform that is associated with the task. If no application context is associated with the task, this option is blank.

## INQUIRE BUNDLE and INQUIRE BUNDLEPART

The new AVAILSTATUS option on the **INQUIRE BUNDLE** and **INQUIRE BUNDLEPART** commands returns the availability status for the CICS bundle.

#### **AVAILSTATUS(*cvda*)**

Returns the status of the BUNDLE resource that represents the CICS bundle:

##### **AVAILABLE**

Callers can access all the resources identified in the CICS bundle as application entry points.

##### **UNAVAILABLE**

Callers cannot access any of the resources identified in the CICS bundle as application entry points.

##### **SOMEAVAIL**

Some application entry points are available and some are unavailable.

##### **NONE**

The bundle does not contain any statements of application entry points.

## **INQUIRE JVMSERVER**

The PROFILEDIR option of the **INQUIRE JVMSERVER** command now displays the JVM profile directory for JVM servers that are packaged in CICS bundles.

#### **PROFILEDIR(*data-area*)**

Returns a 240-character data value of the directory on z/OS UNIX that contains the JVM profile for the JVM server. For a JVM server that is defined in a local CICS region, which uses a JVM profile stored in the local CICS region, the value is the directory specified by the JVMPROFILEDIR system initialization parameter in Reference -> System definition system initialization parameter for the CICS region. For a JVM server that is defined in a CICS bundle, which uses a JVM profile packaged in the CICS bundle, the value is the CICS bundle subdirectory where the JVM profile is stored.

## **INQUIRE LIBRARY**

New options are added to the INQUIRE LIBRARY command to specify the application context for browsing private resources.

#### **APPLICATION(*data-area*)**

Specifies the application name element of the application context. The application name can be up to 64 characters in length.

To browse private resources for an application deployed on a platform, use the APPLICATION, APPLMAJORVER, APPLMINORVER, APPLMICROVER, and PLATFORM options with the browse command START to specify the platform, application name, and full version number for the application whose resources you want to browse.

#### **APPLMAJORVER(*data-area*)**

Specifies the application major version element of the application context, in fullword binary form.

#### **APPLMINORVER(*data-area*)**

Specifies the application minor version element of the application context, in fullword binary form.

#### **APPLMICROVER(*data-area*)**

Specifies the application micro version element of the application context, in fullword binary form.

### **PLATFORM**(*data-area*)

Specifies the platform name element of the application context. The platform name can be up to 64 characters in length.

## **INQUIRE PIPELINE**

The **INQUIRE PIPELINE** command now includes a MSGFORMAT parameter for determining the message format processed by a pipeline:

### **MSGFORMAT**(*data-area*)

Returns an 8-byte character string that indicates the message format processed by the PIPELINE.

#### **SOAP11**

The pipeline processes the SOAP 1.1 message format.

#### **SOAP12**

The pipeline processes the SOAP 1.2 message format, and can also process the SOAP 1.1 message format.

#### **JSON**

The pipeline processes the JSON message format.

#### **OTHER**

The pipeline processes other message formats, such as customer-specified formats.

## **INQUIRE PROGRAM**

A new option RESIDENCY is added to the **INQUIRE PROGRAM** command.

### **RESIDENCY**(*cvda*) (**programs only**)

Returns a CVDA value that indicates the program's residency attributes. The CVDA values are as follows:

#### **RESIDENT**

The program is permanently resident. It is defined as RESIDENT(YES).

#### **NONRESIDENT**

The program has been defined as RESIDENT(NO).

New options are added to the **INQUIRE PROGRAM** command to specify the application context for browsing private resources. For the **INQUIRE PROGRAM** command only, the application context is used to specify a different application for browsing private resources, and also to return information for an inquiry on a public PROGRAM resource that is defined as an application entry point. For other resource types that are supported as private resources, the application context is not used to return information.

### **APPLICATION**(*data-area*)

Specifies or returns the application name element of the application context. The application name can be up to 64 characters in length.

To browse private resources for an application deployed on a platform, use the APPLICATION, APPLMAJORVER, APPLMINORVER, APPLMICROVER, and PLATFORM options with the browse command START, to specify the platform, application name, and full version number for the application whose resources you want to browse.

For an inquiry on a public PROGRAM resource, the APPLICATION, APPLMAJORVER, APPLMINORVER, APPLMICROVER, and PLATFORM

options return the name, version number, and platform of the application for which the program is defined as an application entry point. The OPERATION option returns the name of the relevant operation in the application. If the program is not defined as an application entry point, APPLICATION returns 64 blanks.

**APPLMAJORVER**(*data-area*)

Specifies or returns the application major version element of the application context, in fullword binary form. For an inquiry on a public PROGRAM resource, if the program is not defined as an application entry point, APPLMAJORVER returns a value of -1.

**APPLMINORVER**(*data-area*)

Specifies or returns the application minor version element of the application context, in fullword binary form. For an inquiry on a public PROGRAM resource, if the program is not defined as an application entry point, APPLMINORVER returns a value of -1.

**APPLMICROVER**(*data-area*)

Specifies or returns the application micro version element of the application context, in fullword binary form. For an inquiry on a public PROGRAM resource, if the program is not defined as an application entry point, APPLMICROVER returns a value of -1.

**PLATFORM**(*data-area*)

Specifies or returns the platform name element of the application context. The platform name can be up to 64 characters in length. For an inquiry on a public PROGRAM resource, if the resource is not defined as an application entry point, PLATFORM returns 64 blanks.

## INQUIRE URIMAP

New options are added to the **INQUIRE URIMAP** command to return the details of the application entry point for the URIMAP resource, and of the resulting availability status of the URIMAP resource.

**AVAILSTATUS**(*cvda*)

Returns the availability status of the URIMAP resource as an application entry point for an application deployed on a platform.

**AVAILABLE**

The URIMAP resource is declared as an application entry point, and the application entry point controls its availability and is available, so the URIMAP resource is available to callers.

**UNAVAILABLE**

The URIMAP resource is declared as an application entry point, but the application entry point that controls its availability is unavailable, so the URIMAP resource is not available to callers.

**NONE**

The URIMAP resource is available to callers. Either the URIMAP resource is not declared as an application entry point, or it is declared as an application entry point but the application entry point is disabled or does not control the availability of the URIMAP resource.

**APPLICATION**(*data-value*)

Returns a 64-character area containing the application name of the application

for which this URIMAP resource is declared as an application entry point. If the URIMAP resource is not defined as an application entry point, APPLICATION returns blanks.

**APPLMAJORVER**(*data-value*)

Returns the fullword binary form of the major version number of the application for which this URIMAP resource is declared as an application entry point. If the URIMAP resource is not defined as an application entry point, APPLMAJORVER returns -1.

**APPLMINORVER**(*data-value*)

Returns the fullword binary form of the minor version number of the application for which this URIMAP resource is declared as an application entry point. If the URIMAP resource is not defined as an application entry point, APPLMINORVER returns -1.

**APPLMICROVER**(*data-value*)

Returns the fullword binary form of the micro version number of the application for which this URIMAP resource is declared as an application entry point. If the URIMAP resource is not defined as an application entry point, APPLMICROVER returns -1.

**OPERATION**(*data-value*)

Returns a 64-character area containing the operation name of the application for which this URIMAP resource is declared as an application entry point. If the URIMAP resource is not defined as an application entry point, OPERATION returns blanks.

**PLATFORM**(*data-value*)

Returns a 64-character area containing the platform name of the application for which this URIMAP resource is declared as an application entry point. If the URIMAP resource is not defined as an application entry point, PLATFORM returns blanks.

## INQUIRE SYSTEM

Three new keywords have been added to the **INQUIRE SYSTEM** command. These are MESSAGECASE, MVSSMFID and MVSSYSNAME.

**MESSAGECASE**(*cvda*)

Returns a CVDA value that shows how the message domains display mixed case messages, as set by the **MSGCASE** system initialization parameter. CVDA values are as follows:

**MIXED**

All messages displayed by the CICS message domain or the CICSplex SM message domain remain in mixed case.

**UPPER**

The message domain displays all mixed case messages in uppercase only.

**MVSSMFID**(*data-area*)

Returns a 4-byte value indicating the MVS system identification. This field is copied from the SMCASID field of the SMCA MVS control block.

**MVSSYSNAME**(*data-area*)

Returns an 8-byte value indicating the MVS system name. This field is copied from the CVTSNAME field of the MVS CVT control block.

## INQUIRE WEBSERVICE

The **STATE** option of the **INQUIRE WEBSERVICE** command returns two new states, **DISABLING** and **DISABLED**, which apply only for web services that are packaged in CICS bundles.

### DISABLED

This state is only available for **WEBSERVICE** resources that are defined in a CICS bundle. The web service has completed quiescing and is not accepting new work.

### DISABLING

This state is only available for **WEBSERVICE** resources that are defined in a CICS bundle. The web service is quiescing. It is not accepting new work, but is allowing currently-executing work to complete. When the web service is no longer in use, the state of the **WEBSERVICE** resource changes to **DISABLED**.

## PERFORM STATISTICS RECORD

Continue to use the existing keywords on the **EXEC CICS PERFORM STATISTICS RECORD** system programming command to write statistics for program, program definition, JVM program, or library resource types to the SMF data set. If a resource is a public resource, the existing DSECT is used to map its data, and if a resource is a private resource, the new DSECT is used to map its data.

Programs that are declared as application entry points are identified by a field in the DSECTs for public and private program definitions (**PROGRAMDEF** statistics keyword) and JVM programs (**JVMPROGRAM** keyword). When interval statistics, end-of-day statistics, requested statistics, requested reset statistics, or unsolicited statistics are produced for a program definition or JVM program that is declared as an application entry point, two statistics records are written, one mapped by the DSECT for public resources, and one mapped by the DSECT for private resources. For the program statistics that are produced by the loader domain (**PROGRAM** keyword), application entry points are not identified, and only one private program statistics record is written.

## SET BUNDLE

A new option **AVAILSTATUS** on the **SET BUNDLE** command gives or removes access to application entry points that are declared in the CICS bundle. For a CICS bundle that declares application entry points, you must first enable the bundle, then make it available, to give users access to the resources. For a CICS bundle that does not declare application entry points, you only need to enable the bundle.

### AVAILSTATUS(*cvda*)

Changes the status of the **BUNDLE** resource that represents the CICS bundle:

#### AVAILABLE

CICS gives callers access to the resources identified in the CICS bundle as application entry points, so that they can access all the resources in the CICS bundle.

#### UNAVAILABLE

CICS removes access to the resources identified in the CICS bundle as application entry points, so callers cannot access any of the private resources in the CICS bundle.

## SET FILE

To change the status of a FILE resource that was defined and installed in a CICS bundle, change the status of the CICS bundle or the application with which it is deployed. When you perform the disable action on a CICS bundle that defines a FILE resource, the action completes when the file is no longer in use and any retained locks have been resolved.

If you are experiencing a problem with disabling a CICS bundle that defines a FILE resource, you may issue the **EXEC CICS SET FILE DISABLED** or **EXEC CICS SET FILE CLOSED** command with the **FORCE** option against the dynamically generated resource, if this action is required. Follow the troubleshooting procedure in Diagnosing application errors to diagnose the problem and take suitable action.

## SET JVMSERVER

To disable a JVMSERVER resource that is defined in a CICS bundle, you must first disable the CICS bundle or the application with which it is deployed. If the disable process does not complete, because the resource is still in use, you can now use the **SET JVMSERVER PURGE**, **FORCEPURGE**, or **KILL** command on the dynamically generated resource in the CICS region. If you attempt to issue the command before performing the disable action on the CICS bundle, CICS issues error message DFHSJ1203.

## SET TCPIP SERVICE

To disable a TCPIP SERVICE resource that is defined in a CICS bundle, you must first disable the CICS bundle or the application with which it is deployed. If the disable process does not complete, because the resource is still in use, you can now use the **SET TCPIP SERVICE IMMCLOSE** command on the dynamically generated resource in the CICS region. If you attempt to issue the command before performing the disable action on the CICS bundle, CICS issues error message DFHSO0140.

## Changed SPI commands in CICS TS 5.1

These system programming interface commands were changed in CICS Transaction Server for z/OS, Version 5 Release 1.

### ENABLE PROGRAM

A new option, **GALLOCATION**, is added to the **ENABLE PROGRAM** command to choose the storage location for the global work area for global user exits and task related user exits.

#### **GALLOCATION**(*cvda*)

Specifies the location of the storage that CICS provides as a global work area for this exit program. You must also specify the **GALENGTH** option to create the global work area. CVDA values are as follows:

##### **LOC24**

The global work area is in 24-bit storage. This is the default location.

##### **LOC31**

The global work area is in 31-bit storage.



CICS does not return the address of the global work area on the **ENABLE PROGRAM** command. You can use an **EXTRACT EXIT** command to determine the address.

A new option **REQUIRED**, is added to the **ENABLE PROGRAM** command to control which TCB runs a task-related user exit.

#### **REQUIRED (task-related user exits only)**

Specifies that the task-related user exit program is to run on an open TCB. If **OPENAPI** is specified, an L8 open TCB is used. If **OPENAPI** is not specified, any eligible key-8 open TCB can be used: L8, T8, or X8. If **REQUIRED** is not specified, the task-related user exit must use only the CICS API, or perform its own TCB switch to invoke non-CICS services.

The **OPENAPI** option is also changed.

#### **OPENAPI (task-related user exits only)**

Specifies that the task-related user exit program is using non CICS APIs. If the user application program that invokes the task-related user exit is defined as quasi-reentrant, CICS switches the user task to an L8 mode open TCB before passing control to the task-related user exit program. CICS assumes that a task-related user exit enabled with **OPENAPI** does not manage its own private pool of TCBs for non CICS services, and can perform its processing on the L8 mode TCB.

If you specify **OPENAPI** without **REQUIRED**, CICS enforces **REQUIRED** by default. A task-related user exit that specifies **OPENAPI** must be written to threadsafe standards.

For the rules that determine which calls to a task-related user exit cause the exit to be invoked on an L8 mode TCB or the QR TCB, and for other associated information, see Calling an **OPENAPI** task-related user exit in Developing system programs.

**Note:** When a task-related user exit program is enabled **REQUIRED** and **OPENAPI**, it is treated the same as if it were enabled **THREADSAFE** and **OPENAPI**. For compatibility, an **INQUIRE EXITPROGRAM** command for either combination will always return **THREADSAFE**, **OPENAPI**. An **INQUIRE EXITPROGRAM** command will return **REQUIRED**, **CICSAPI** only for a task-related user exit program enabled **REQUIRED** and **CICSAPI**.

## **INQUIRE ASSOCIATION**

The **INQUIRE ASSOCIATION** command has new options to support application context data.

#### **ACAPPLNAME (data-area)**

Returns, in a 64-character area, the name of the application that is associated with the task. If no application context is associated with the task, this option is blank.

#### **ACMAJORVER (data-area)**

Returns, in fullword binary form, the major version number of the application associated with the task. If no application context is associated with the task, this option returns 0.



**ACMICROVER(*data-area*)**

Returns, in fullword binary form, the micro version number of the application associated with the task. If no application context is associated with the task, this option returns 0.

**ACMINORVER(*data-area*)**

Returns, in fullword binary form, the minor version number of the application associated with the task. If no application context is associated with the task, this option returns 0.

**ACOPERNAME(*data-area*)**

Returns, in a 64-character area, the name of the application operation that is associated with the task. If no application context is associated with the task, this option is blank.

**ACPLATNAME(*data-area*)**

Returns, in a 64-character area, the name of the platform that is associated with the task. If no application context is associated with the task, this option is blank.

The existing options FACILTYPE and ODFACILTYPE have a new CVDA value of JVMSERVER to identify tasks that are running in a JVM server. The existing option IPFAMILY has a new CVDA value of UNKNOWN.

**INQUIRE BUNDLE**

The **INQUIRE BUNDLE** command has new options to support bundle ID and version information.

**BUNDLEID(*data-value*)**

Returns the 1 - 64 character ID of the bundle. If no ID is specified, this option returns blanks.

**MGMPART(*data-value*)**

Returns the 8 - byte ID of the management part under which this bundle was installed for an application or platform. If the bundle was not installed for an application or platform, this option returns binary zeros.

**MAJORVERSION(*data-area*)**

Returns the major version number of the bundle. If no major version is specified, this option returns 0.

**MICROVERSION(*data-area*)**

Returns the micro version number of the bundle. If no micro version is specified, this option returns 0.

**MINORVERSION(*data-area*)**

Returns the minor version number of the bundle. If no minor version is specified, this option returns 0.

**INQUIRE BUNDLEPART**

The PARTCLASS option on the **INQUIRE BUNDLEPART** command has a new value:

**ENTRYPOINT**

The resource is an entry point to an application.

**INQUIRE CAPTURESPEC**

The PRIMPREDTYPE option on the **INQUIRE CAPTURESPEC** command has a new value:

## MESSAGEID

The primary predicate is a CICS or CPSM message id of form DFHxxnnnn or EYUxxnnnn.

## INQUIRE DISPATCHER

The MAXOPENTCBS and MAXXPTCBS options on the **INQUIRE DISPATCHER** command are still available, but the values that they return now represent limits set automatically by CICS based on the maximum number of tasks specified for the CICS region.

## INQUIRE DSNAME

The **INQUIRE DSNAME** command has a new option to support replication logging.

### LOGREPSTATUS(*cvda*)

Returns a CVDA value identifying whether the data set was defined with LOGREPLICATE. The valid values are:

#### LOGREPLICATE

All updates to the data set are logged for replication.

#### NOLOGREPLICA

Updates to the data set are not logged for replication.

#### NOTAPPLIC

The data set has not been opened by the CICS region in which the command is issued, or the data set is BDAM .

## INQUIRE EVENTBINDING

The **INQUIRE EVENTBINDING** command is changed to support two new options EPADAPTERRES and EPADAPTERSET.

### EPADAPTERRES (*cvda*)

Returns a CVDA value indicating whether events are emitted to one or multiple EP adapters. CVDA values are as follows:

#### EPADAPTER

Events captured by this event binding will be emitted to an EP adapter.

#### EPADAPTERSET

Events captured by this event binding will be emitted to all EP adapters in an EP adapter set.

### EPADAPTERSET(*data-area*)

Returns the 32-character name of the EP adapter set used by this event binding. If this option is not blank, the option of EPADAPTER will be blank. Or vice versa.

## INQUIRE EXITPROGRAM

The CONCURRENTST option of the **INQUIRE EXITPROGRAM** command is extended to return a third CVDA, REQUIRED.

### CONCURRENTST

returns a CVDA indicating the concurrency status of the global or task-related

user exit program. This is the value of the CONCURRENCY attribute of the PROGRAM definition, or of any override specified by the latest ENABLE command for this program.

CVDA values are:

#### QUASIRENT

The exit program is defined as being quasi-reentrant, and is able to run only under the CICS QR TCB when invoking CICS services through the CICS API. To use any MVS services, a task-related user exit program must switch to a privately-managed TCB.

#### THREADSAFE

The exit program is defined as threadsafe, and is capable of running on an open TCB.

For task-related user exit programs only, if the APIST option returns OPENAPI the program will always be invoked under an open TCB.

For both global and task-related user exit programs, an APIST option of CICSAPI means that the program is invoked under whichever TCB is in use by its user task when the program is given control. This could be either an open TCB or the CICS QR TCB.

#### REQUIRED (task-related user exits only)

The exit program is always run on an open TCB. If OPENAPI is specified, an L8 open TCB is used. If OPENAPI is not specified, then any eligible key 8 open TCB is used, L8, T8, or X8.

**Note:** When a task-related user exit is enabled REQUIRED and OPENAPI, it is treated the same as if it were enabled THREADSAFE and OPENAPI. For compatibility, an **INQUIRE EXITPROGRAM** command for either combination will always return THREADSAFE, OPENAPI. For a task-related user exit enabled REQUIRED and CICSAPI, **INQUIRE EXITPROGRAM** will return REQUIRED, CICSAPI.

## INQUIRE JVMSERVER

The **INQUIRE JVMSERVER** command is changed to support the new option PROFILEDIR.

#### PROFILEDIR(*data-area*)

Returns a 240-character data value of the directory on z/OS UNIX that contains the JVM profile for the JVM server. For a JVM server that is defined in a local CICS region, which uses a JVM profile stored in the local CICS region, the value is the directory specified by the JVMPROFILEDIR system initialization parameter in Reference -> System definition system initialization parameter for the CICS region. For a JVM server that is defined in a CICS bundle, which uses a JVM profile packaged in the CICS bundle, the value is the CICS bundle subdirectory where the JVM profile is stored.

## INQUIRE PROGRAM

The ENTRYPOINT option of the **INQUIRE PROGRAM** command is changed to support non-Language Environment AMODE(64) assembler programs. The **INQUIRE PROGRAM** command is changed to support the new APPLICATION, APPLMAJORVER, APPLMINORVER, APPLMICROVER, OPERATION and PROGRAM options, which tell CICS that the PROGRAM resource is an entry point for an application.

#### **APPLICATION**(*data-area*)

Specifies or returns the application name element of the application context. The application name can be up to 64 characters in length.

To browse private resources for an application deployed on a platform, use the APPLICATION, APPLMAJORVER, APPLMINORVER, APPLMICROVER, and PLATFORM options with the browse command START, to specify the platform, application name, and full version number for the application whose resources you want to browse.

For an inquiry on a public PROGRAM resource, the APPLICATION, APPLMAJORVER, APPLMINORVER, APPLMICROVER, and PLATFORM options return the name, version number, and platform of the application for which the program is defined as an application entry point. The OPERATION option returns the name of the relevant operation in the application. If the program is not defined as an application entry point, APPLICATION returns 64 blanks.

#### **APPLMAJORVER**(*data-area*)

Specifies or returns the application major version element of the application context, in fullword binary form. For an inquiry on a public PROGRAM resource, if the program is not defined as an application entry point, APPLMAJORVER returns a value of -1.

#### **APPLMINORVER**(*data-area*)

Specifies or returns the application minor version element of the application context, in fullword binary form. For an inquiry on a public PROGRAM resource, if the program is not defined as an application entry point, APPLMINORVER returns a value of -1.

#### **APPLMICROVER**(*data-area*)

Specifies or returns the application micro version element of the application context, in fullword binary form. For an inquiry on a public PROGRAM resource, if the program is not defined as an application entry point, APPLMICROVER returns a value of -1.

#### **ENTRYPOINT**(*ptr-ref*)

Returns the entry point of the module, if it is loaded. CICS program load services set the entry point according to the addressing mode of the load module:

- AMODE(24): bit 0 is 0 and bit 31 is 0.
- AMODE(31): bit 0 is 1 and bit 31 is 0.
- AMODE(64): bit 0 is 0 and bit 31 is 1.

If the module is not loaded, or is a remote program, or is a Java program that runs in a JVM, a null pointer (X'FF000000') is returned.

#### **OPERATION**(*data-value*)

Returns, in a 64-character area, the name of the application operation for which this program is defined as an entry point. If the program is not defined as an application entry point, OPERATION returns 64 blanks.

#### **PROGRAM**(*data-value*)

Specifies the name of the program, map set, or partition set about which you are inquiring. The name can be up to 8 characters in length.

## **INQUIRE SYSTEM**

The **INQUIRE SYSTEM** command is changed to support the following new options:

**ETDSASIZE(*data-area*)**

Returns the current size in bytes of the extended trusted dynamic storage area (ETDSA), in fullword binary form. It includes both storage in use and storage available for use. This size is calculated and managed by CICS automatically, within the EDSALIMIT value, that is, the overall limit for dynamic storage areas that reside above 16 MB but below 2 GB (above the line).

**GCDSASIZE(*data-area*)**

Returns the current size in bytes of the above-the-bar CICS dynamic storage area (GCDSA), in doubleword binary form. It includes both storage in use and storage available for use. This size is calculated and managed by CICS automatically.

**GSDSASIZE(*data-area*)**

Returns the current size in bytes of the above-the-bar shared dynamic storage area (GSDSA), in doubleword binary form. It includes both storage in use and storage available for use. This size is calculated and managed by CICS automatically.

**GUDSASIZE(*data-area*)**

Returns the current size in bytes of the above-the-bar user dynamic storage area (GUDSA), in doubleword binary form. It includes both storage in use and storage available for use. This size is calculated and managed by CICS automatically.

The MAXOPENTCBS option on the **INQUIRE SYSTEM** command is still available, but the value that it returns now represents a limit set automatically by CICS based on the maximum number of tasks specified for the CICS region.

**INQUIRE URIMAP**

The USAGE option on the **INQUIRE URIMAP** command has a new value:

**JVMSEVER**

A URIMAP for a JVM server. This type of URIMAP resource maps an incoming request for a Java web application to run under a CICS transaction that has appropriate security.

**SET PROGRAM**

The **SET PROGRAM** command has a new option OPERATION.

**OPERATION(*data-value*)**

Specifies the 64-character name of the application operation for which this program is to be defined as an application entry point. You cannot specify the OPERATION option for CICS programs (programs beginning with 'DFH').

To notify CICS that a program is no longer to be used as an entry point, specify a value of a space character for the OPERATION option.

You cannot use the OPERATION option to specify or remove application operations for programs that are defined in CICS bundles as application entry points. You can use this command only to modify programs that are not being used as an entry point by a CICS bundle.

**SET STATISTICS**

The default value of the INTERVAL option on the **SET STATISTICS** command is decreased from 3 hours to 1 hour.

**INTERVAL(*data-value*)**

Specifies the recording interval for system statistics, as a 4-byte packed decimal field in the format *0hhmmss+*. The interval must be at least 1 minute and no more than 24 hours. When you use the INTERVAL option, or more than one of the separate interval options, the minutes and the seconds portions of the time each must not exceed 59. If you use INTERVALMINS alone, the range is 1 - 1440. If you use INTERVALSECS alone, the range is 60 - 86400.

**SET SYSTEM**

The maximum value of the MAXTASKS option of the **SET SYSTEM** command is increased from 999 to 2000, and the minimum value is increased to 10.

**MAXTASKS(*data-value*)**

Specifies, as a fullword binary value, the maximum number of tasks that can be eligible for dispatch at any one time in this CICS system. Both active and suspended tasks count toward this limit, but tasks that have not reached the point of initial dispatch do not. System tasks, for example terminal and journal control tasks, are not counted. The value can be in the range 10 - 2000.

**Changed SPI commands in CICS TS 4.2**

These system programming interface commands were changed in CICS Transaction Server for z/OS, Version 4 Release 2.

**CREATE FILE**

A new option LSRPOOLNUM is added:

**LSRPOOLNUM({1|*number*|NONE})**

Specifies the identity of the local shared resource pool. The default value for LSRPOOLNUM is 1, unless a value has been specified for the NSRGROUP attribute, in which case the default value for LSRPOOLNUM is NONE.

**NONE**

Specifies that the data set associated with this file uses VSAM nonshared resources (NSR).

You cannot specify NONE for a CICS shared data table (CICS or user-maintained), because these types of data tables must use an LSR pool. However, this restriction does not apply to a coupling facility data table, for which you can specify NONE.

VSAM nonshared resources (NSR) are not supported for transactions that use transaction isolation. Specify ISOLATE(NO) when you define transactions that access VSAM files that use NSR. You can also function ship the file request to a remote region. The DFHMIRS program that carries out the request is defined with an EXECKEY of CICS. A CICS-key program has read and write access to CICS-key and user-key storage of its own task and all other tasks, whether or not transaction isolation is active.

*number*

Identifies the number of the VSAM shared resource pool that is used by the VSAM data set associated with this file. The value must be in the range 1 through 255. The data set is defined as using VSAM local shared resources (LSR). Define the buffers, strings, and other resources explicitly in an LSRPOOL resource definition that corresponds to the assigned LSRPOOLNUM value.

By default, if the file definition specifies RLSACCESS(YES), the LSRPOOLNUM value is ignored when CICS opens the file. However, if you change a file definition that specifies an LSR pool from RLSACCESS(NO) to RLSACCESS(YES), you are advised to keep the LSRPOOLNUM value. LSRPOOLNUM ensures that, if the file is switched at any time from RLS to LSR mode, the file correctly references an LSR pool.

## CREATE LSRPOOL

A new option LSRPOOLNUM is added:

**LSRPOOLNUM**({1}|*number*)

Specifies the identifier of the local shared resource pool that is being defined. The value must be in the range 1 through 255.

## CREATE MQCONN

A new value GROUPRESYNC is added to the RESYNCMEMBER option:

**RESYNCMEMBER**({YES|NO}|**GROUPRESYNC**)

### GROUPRESYNC

CICS connects to any member of the queue-sharing group. The queue manager is chosen by WebSphere MQ and it asks CICS to resolve indoubt units of work on behalf of all eligible queue managers in the queue-sharing group. This function is called *group unit of recovery*. The GROUPRESYNC option can be used only when you are running WebSphere MQ 7.1, or higher, that supports group unit of recovery for CICS and when group unit of recovery is enabled in the queue managers.

The main use of the GROUPRESYNC option is with shared queues, but it can be used with private queues. Messages on shared queues are resolved immediately, but resolution of private queues occurs when the owning queue manager restarts. If using private queues, it can be convenient to define the queues with QSGDISP(GROUP). QSGDISP(GROUP) ensures that an instance of the private queue exists on every manager in the queue sharing group, so that in the event of failure and reconnection to a different queue manager, the application can continue using the new queue instance. The application would need to be able to tolerate using a new queue instance.

Do not change the setting for RESYNCMEMBER when units of work are outstanding in WebSphere MQ, because units of work cannot be resolved. A unit of work held in CICS is identified with a resource manager qualifier. When RESYNCMEMBER(GROUPRESYNC) is used the qualifier is the name of the queue-sharing group, otherwise the qualifier used is the name of the individual queue manager.

## CREATE PROGRAM

A new option JVMSERVER is added:

**JVMSERVER**(*jvmserver*)

Specifies the name (up to 8 characters in length) of the JVMSERVER resource that contains the OSGi service. A JVMSERVER resource represents the JVM server runtime environment in CICS. The JVM server runs all programs in the CICS key.



**Acceptable characters:**

A-Z a-z 0-9 \$ @ # . - \_ % ? ! : | = , ;

A new CVDA value REQUIRED is added to the CONCURRENCY option:

**REQUIRED**

The program is written to threadsafe standards. CICS starts the program on an open TCB and ensures that the program always runs on an open TCB. If CICS switches to the QR TCB to run a CICS command, it returns to the open TCB before handing control back to the application program. The type of open TCB used depends on the API setting and the language of the program.

- Java programs and OSGi bundles that run in a JVM server use a T8 TCB.
- C or C++ XPLink programs operate like OPENAPI programs and use an X8 TCB if CICS key is set, and an X9 TCB if user key is set.
- COBOL, PL/I, non-XPLink C or C++, and assembler language programs that also specify API(CICSAPI) use an L8 TCB because CICS commands can operate on this TCB irrespective of the execution key of the program.

REQUIRED is applicable to user application programs, PLT programs, and user-replaceable programs, and is the preferred option for Java programs. The REQUIRED setting is also suitable for programs that access resource managers like DB2® and WebSphere MQ, which also require an L8 TCB. However, for OPENAPI programs CICS must use an L9 TCB for user key programs and an L8 TCB for CICS key programs so that non-CICS API commands such as MVS requests operate correctly. The CICS-DB2 task-related user exit will use an L8 TCB if it is run with CONCURRENCY(REQUIRED) and API(OPENAPI) or it will run on any eligible key 8 open TCB if run with CONCURRENCY(REQUIRED) and API(OPENAPI).

**CREATE TCPIP SERVICE**

A new option MAXPERSIST is added:

**MAXPERSIST ({NO|number})**

Specifies the maximum number of persistent connections from web clients that the CICS region allows for this port at any one time. This setting applies only for the HTTP protocol.

- The default value NO means that there is no limit on the number of persistent connections.
- In a CICS region that is at risk of being overloaded with persistent connections, you can specify a suitable value (up to a theoretical maximum of 65535) based on the number of persistent connections that the CICS region can handle simultaneously. When this limit is reached and further web clients connect on the port, CICS requires the new clients to close the connection after they receive each response. When the new clients reconnect, if they connect to another CICS region that shares the port and has not reached its limit, they can maintain a persistent connection there instead. An HTTP/1.1 server should normally allow persistent connections, so only set this option in a CICS region that has experienced performance problems due to persistent connections from long-lived web clients.



- If you specify a value of zero for this option, the CICS region does not allow persistent connections and requires every web client to close the connection after they receive each response. A zero setting for MAXPERSIST is not compliant with the HTTP/1.1 specification, so only use that setting if you have a special requirement for it in a CICS region that is not currently handling external requests, for example, in a test environment.

## CREATE TSMODEL

A new option EXPIRYINT is added:

**EXPIRYINT**(**{0|number}**)

Specifies the expiry interval, in hours, for a temporary storage queue that matches this model. The interval count begins after each use of the temporary storage queue. If the queue is not used again before the expiry interval is reached, the queue becomes eligible for CICS to delete it automatically.

**Note:** EXPIRYINTMIN is introduced in 5.2 and is a preferred option.

**0** No expiry interval applies to temporary storage queues that match this model, and they are never eligible for automatic deletion. This setting is the default.

*number*

An expiry interval in minutes, in the range 1 - 15000. After this expiry interval, a temporary storage queue that matches this model becomes eligible for automatic deletion if it has not been used again.

Expiry intervals apply to temporary storage queues in the following locations:

- Main temporary storage in the local CICS region.
- Nonrecoverable auxiliary temporary storage (DFHTEMP data set) associated with the local CICS region.

Expiry intervals do not apply to the following types of temporary storage queues, so CICS never deletes them automatically:

- Queues in auxiliary temporary storage that are defined as recoverable.
- Queues in a remote CICS region. To make CICS delete remote temporary storage queues, specify an expiry interval in a suitable TSMODEL resource definition in the region that owns the queues.
- Queues that CICS creates for its own use.
- Temporary storage queues in shared temporary storage pools.

If you change the expiry interval in a TSMODEL resource definition, existing temporary storage queues that match the model are not affected. Those queues continue to use the expiry interval that applied when they were created. If all the TSMODEL resource definitions with a nonzero expiry interval are deleted from a CICS region, CICS stops scanning for expired temporary storage queues.

## CREATE URIMAP

A new option SOCKETCLOSE is added:

**SOCKETCLOSE**(**{0|hhmmss}**)

This attribute is for USAGE (CLIENT).

SOCKETCLOSE specifies if, and for how long, CICS keeps a client HTTP connection open after the CICS application has finished using it. After use,

CICS checks the state of the connection and then places it in a pool in a dormant state. A dormant connection can be reused by the same application or by another application that connects to the same host and port.

**0** CICS closes each client HTTP connection when the CICS application has finished using it. CICS does not place the connection in a pool for reuse.

*hmmss*

When a CICS application has finished using its client HTTP connection, CICS checks the state of the connection and places it in a pool for reuse. A dormant connection that is not reused is discarded after the length of time that you specify here.

Connection pooling can provide performance benefits for the HTTP EP adapter for CICS event processing, or where multiple invocations of CICS web support applications make connection requests for the same host and port, or where a web services application makes multiple requests and responses. To activate connection pooling, your application programs must specify the URIMAP resource on the **INVOKE SERVICE** or **WEB OPEN** command. For more information about connection pooling, see Connection pooling for HTTP client performance in Improving performance.

## INQUIRE ASSOCIATION

The following options have been added for transaction tracking support:

### **ODADPTRID**(*data-area*)

Returns, in a 64-character area, the data that was added to the origin data by the adapter. This field is created when the originating task is started. If the task was not started by using an adapter, or if it was and the adapter did not set this value, ODADPTRID returns blanks.

### **ODADPTRDATA1**(*data-area*)

Returns, in a 64-character area, the data that was added to the origin data by the adapter. This field is created when the originating task is started. If the task was not started by using an adapter, or if it was and the adapter did not set this value, ODADPTRDATA1 returns blanks. ODADPTRDATA1 also returns blanks if the adapter set a value for this field, but did not set an adapter identifier.

### **ODADPTRDATA2**(*data-area*)

Returns, in a 64-character area, the data that was added to the origin data by the adapter. This field is created when the originating task is started. If the task was not started by using an adapter, or if it was and the adapter did not set this value, ODADPTRDATA2 returns blanks. ODADPTRDATA2 also returns blanks if the adapter set a value for this field, but did not set an adapter identifier.

### **ODADPTRDATA3**(*data-area*)

Returns, in a 64-character area, the data that was added to the origin data by the adapter. This field is created when the originating task is started. If the task was not started by using an adapter, or if it was and the adapter did not set this value, ODADPTRDATA3 returns blanks. ODADPTRDATA3 also returns blanks if the adapter set a value for this field, but did not set an adapter identifier.

### **PHAPPLID**(*data-area*)

Returns the 8-character APPLID from previous hop data. If the specified task was initiated by a task in another CICS region, PHAPPLID contains the

APPLID of the other CICS region, or spaces if it was not initiated in this way. For more information about previous hop data, see Transaction tracking in Getting started.

**PHCOUNT**(*data-area*)

Returns, in fullword binary form, the number of times there has been a request from one CICS region to another to initiate a task with which this task is associated, or zero if there have been no such requests.

**PHNETWORKID**(*data-area*)

Returns the 8-character network qualifier from previous hop data. If the specified task was initiated by a task in another CICS region, PHNETWORKID contains the network qualifier for the APPLID of the other CICS region or spaces if it was not initiated in this way.

**PHSTARTTIME**(*data-area*)

Returns a 21-character representation of the task start time from previous hop data. The time is in GMT and in the form *yyyymmddhhmmss.ssssss*. If the specified task was initiated by a task in another CICS region, PHSTARTTIME contains the start time of the task in the other CICS region, or spaces if it was not initiated in this way.

**PHTASKID**(*data-area*)

Returns the 4-byte packed decimal identifier from previous hop data. If the specified task was initiated by a task in another CICS region, PHTASKID contains the identifier of the task in the other CICS region, or packed decimal zero if it was not initiated in this way.

**PHTRANSID**(*data-area*)

Returns the 4-character name of a transaction from previous hop data. If the specified task was initiated by a task in another CICS region, PHTRANSID contains the transaction name of the task in the other CICS region, or spaces if it was not initiated in this way.

## INQUIRE ATOMSERVICE

New options URIMAP and XMLTRANSFORM are added:

**URIMAP**(*data-area*)

Returns the 8-character URIMAP name that indicates the URI associated with this ATOMSERVICE definition. If there is no auto-generated URIMAP associated with this ATOMSERVICE definition, this field is empty.

**XMLTRANSFORM**(*data-area*)

Returns the 32-character name of the XMLTRANSFORM resource associated with the ATOMSERVICE definition. If the value of ATOMTYPE is SERVICE or CATEGORY, this field is empty.

## INQUIRE CAPTURESPEC

New options are added for event processing:

**CURRPGM**(*data-area*)

Specifies an 8-character data area to receive the value specified by the application context predicate for the current program name. Blanks are returned if no application context predicate for the current program name is defined for this capture specification.

**CURRPGMOP**(*cvda*)

Returns a CVDA value that defines the operator that is used, together with the

value in the CURRPGM option, to evaluate the application context predicate on the current program name. Possible CVDA values are as follows:

**ALLVALUES**

The predicate always evaluates true; that is, there is no filtering based on the name of the current program.

**DOESNOTEQUAL**

The predicate evaluates true when the name of the current program is not equal to the value of the CURRPGM option.

**DOESNOTSTART**

The predicate evaluates true when the name of the current program does not start with the value of the CURRPGM option.

**EQUALS**

The predicate evaluates true when the name of the current program is equal to the value of the CURRPGM option.

**GREATERTHAN**

The predicate evaluates true when the name of the current program is greater than the value of the CURRPGM option.

**ISNOTGREATER**

The predicate evaluates true when the name of the current program is equal to or less than the value of the CURRPGM option.

**ISNOTLESS**

The predicate evaluates true when the name of the current program is equal to or greater than the value of the CURRPGM option.

**LESSTHAN**

The predicate evaluates true when the name of the current program is less than the value of the CURRPGM option.

**STARTSWITH**

The predicate evaluates true when the name of the current program starts with the value of the CURRPGM option.

**CURRTRANID**(*data-area*)

Specifies a 4-character data area to receive the value specified by the application context predicate for the current transaction name.

**CURRTRANIDOP**(*cvda*)

Returns a CVDA value that defines the operator that is used, together with the value in the CURRTRANID option, to evaluate the application context predicate on the current transaction name. Possible CVDA values are as follows:

**ALLVALUES**

The predicate always evaluates true; that is, there is no filtering based on the name of the current transaction.

**DOESNOTEQUAL**

The predicate evaluates true when the name of the transaction that is running is not equal to the value of the CURRTRANID option.

**DOESNOTSTART**

The predicate evaluates true when the name of the transaction that is running does not start with the value of the CURRTRANID option.

**EQUALS**

The predicate evaluates true when the name of the current transaction is equal to the value of the CURRTRANID option.

**GREATERTHAN**

The predicate evaluates true when the name of the current transaction is greater (that is, higher in the collating sequence of possible transaction IDs) than the value of the CURRTRANID option.

**ISNOTGREATER**

The predicate evaluates true when the name of the current transaction is equal to or less (that is, lower in the collating sequence of possible transaction IDs) than the value of the CURRTRANID option.

**ISNOTLESS**

The predicate evaluates true when the name of the current transaction is equal to or greater (that is, higher in the collating sequence of possible transaction IDs) than the value of the CURRTRANID option.

**LESSTHAN**

The predicate evaluates true when the name of the current transaction is less (that is, lower in the collating sequence of possible transaction IDs) than the value of the CURRTRANID option.

**STARTSWITH**

The predicate evaluates true when the name of the current transaction starts with the value of the CURRTRANID option.

**CURRUSERID(*data-area*)**

Specifies an 8-character data area to receive the value specified by the application context predicate for the user ID that is associated with the current transaction.

**CURRUSERIDOP(*cvda*)**

Returns a CVDA value that defines the operator that is used, together with the value in the CURRUSERID option, to evaluate the application context predicate on the user ID. Possible CVDA values are as follows:

**ALLVALUES**

The predicate always evaluates true; that is, there is no filtering based on the user ID.

**DOESNOTEQUAL**

The predicate evaluates true when the user ID of the current user is not equal to the value of the CURRUSERID option.

**DOESNOTSTART**

The predicate evaluates true when the user ID of the current user does not start with the value of the CURRUSERID option.

**EQUALS**

The predicate evaluates true when the user ID of the current user is equal to the value of the CURRUSERID option.

**GREATERTHAN**

The predicate evaluates true when the user ID of the current user is greater (that is, higher in the collating sequence of possible user IDs) than the value of the CURRUSERID option.

**ISNOTGREATER**

The predicate evaluates true when the user ID of the current user is equal to or less (that is, lower in the collating sequence of possible user IDs) than the value of the CURRUSERID option.

**ISNOTLESS**

The predicate evaluates true when the user ID of the current user is

equal to or greater (that is, higher in the collating sequence of possible user IDs) than the value of the CURRUSERID option.

#### **LESSTHAN**

The predicate evaluates true when the user ID of the current user is less (that is, lower in the collating sequence of possible user IDs) than the value of the CURRUSERID option.

#### **STARTSWITH**

The predicate evaluates true when the user ID of the current user starts with the value of the CURRUSERID option.

#### **NUMDATAPRED** (*data-area*)

Specifies a fullword binary field that is set to the number of application data predicates that are defined for this capture specification.

#### **NUMINFOSRCE** (*data-area*)

Specifies a fullword binary field that is set to the number of information sources that are defined for this capture specification.

#### **NUMOPTPRED** (*data-area*)

Specifies a fullword binary field that is set to the number of application command option or system event option predicates that are defined for this capture specification. The total number of predicates includes the primary predicate.

#### **PRIMPRED** (*data-area*)

Specifies a 32-character data area to receive the value of the primary predicate for this capture specification. The primary predicate for a capture specification is the predicate to specify with the EQUALS operator; it helps to avoid a performance impact as more capture specifications are added for a particular capture point. Blanks are returned if there is no named primary predicate defined for this capture point.

#### **PRIMPREDOP** (*cvda*)

Returns a CVDA value that defines the operator that is used, together with the value in the PRIMPRED option, to evaluate the primary predicate. Possible CVDA values are as follows:

#### **ALLVALUES**

The predicate always evaluates true; that is, there is no filtering based on the name of the resource for the command.

#### **DOESNOTEQUAL**

The predicate evaluates true when the resource that is specified by the command is not equal to the value of the PRIMPRED option.

#### **DOESNOTSTART**

The predicate evaluates true when the resource that is specified by the command does not start with the value of the PRIMPRED option.

#### **EQUALS**

The predicate evaluates true when the resource that is specified by the command is equal to the value of the PRIMPRED option.

#### **GREATERTHAN**

The predicate evaluates true when the resource that is specified by the command is greater than the value of the PRIMPRED option.

#### **ISNOTGREATER**

The predicate evaluates true when the resource that is specified by the command is equal to or less than the value of the PRIMPRED option.

**ISNOTLESS**

The predicate evaluates true when the resource specified by the command is equal to or greater than the value of the PRIMPRE option.

**LESSTHAN**

The predicate evaluates true when the resource that is specified by the command is less than the value of the PRIMPRE option.

**STARTSWITH**

The predicate evaluates true when the resource that is specified by the command starts with the value of the PRIMPRE option.

**PRIMPREDTYPE(*cvda*)**

Returns a CVDA value that identifies the type of the primary predicate for this capture specification. Possible CVDA values are as follows:

**CONTAINER**

The primary predicate is a container.

**CURRENTPGM**

The primary predicate is the current program name.

**EVENT**

The primary predicate is a CICS event.

**FILE** The primary predicate is a CICS file.

**MAP** The primary predicate is a CICS basic mapping support (BMS) map.

**MESSAGEID**

The primary predicate is a CICS or CPSM message id of form DFHxxxxnn or EYUxxxxnn.

**NONE**

The capture specification has no primary predicate.

**PROGRAM**

The primary predicate is a CICS program name.

**SERVICE**

The primary predicate is a CICS service or a WEBSERVICE resource.

**TDQUEUE**

The primary predicate is a CICS transient data queue.

**TRANCLASS**

The primary predicate is a CICS transaction class name.

**TRANSACTION**

The primary predicate is a CICS transaction identifier.

**TSQUEUE**

The primary predicate is a CICS temporary storage queue.

**INQUIRE DB2CONN**

A new option REUSELIMIT is added:

**REUSELIMIT(*data-area*)**

Returns a value in the range 0 - 10000 representing the maximum number of times a thread can be reused before it is terminated. The default is 1000. A value of 0 means that there is no limit on the number of times that a thread can be reused. Long-running CICS DB2 threads that are constantly being reused build up resources in DB2 that can cause storage problems.



The reuse limit applies to unprotected threads both in the pool and on a DB2ENTRY, and to protected DB2ENTRY threads.

## INQUIRE EVENTBINDING

A new option EPADAPTER is added:

### EPADAPTER(*data-area*)

Specifies the name (1 - 32 characters) of an EP adapter. You must specify this option to retrieve details of a particular EP adapter by name. On the browse form of this command, you must provide a 32-character data area to receive the name of the EP adapter.

## INQUIRE EVENTPROCESS

A new option SCHEMALEVEL is added:

### SCHEMALEVEL(*data-area*)

Returns a 4-character value (*vvrr*) indicating the highest version and release of event binding schema that is supported by CICS, where *vv* is the version and *rr* is the release; for example, 0201 indicates version 2 release 1 of the event binding schema.

## INQUIRE FILE

A new option LSRPOOLNUM is added:

### LSRPOOLNUM(*data-area*) (VSAM only)

Returns a fullword binary field indicating the number of the VSAM LSR pool associated with this file, in the range 1 through 255. If the file does not share buffers, the LSRPOOLNUM value is 0.

## INQUIRE IPCONN

A new option MIRRORLIFE is added:

### MIRRORLIFE(*cvda*)

Returns the minimum lifetime of the mirror task for function-shipped file control, transient data, and temporary storage requests received by this region. CVDA values are as follows:

#### REQUEST

The mirror task terminates as soon as possible. This is the default value.

**TASK** The mirror task remains available to the application that issues the remote request until the task of the application ends.

**UOW** The mirror transaction remains available to the application that issues the remote request until the next sync point is issued.

## INQUIRE JVMSERVER

New options are added to report statistics on the JVM server:

### CURRENTHEAP(*data-area*)

Returns a doubleword binary value indicating the current size of the heap in bytes that is allocated to the JVM server.



**GCPOLICY**(*data-area*)

Returns a 32-character value indicating the garbage collection policy that is being used by the JVM server.

**INITHEAP**(*data-area*)

Returns a doubleword binary value that indicates the initial size of the heap in bytes that is allocated to the JVM server. This value is set by the **-Xms** option in the JVM profile.

**MAXHEAP**(*data-area*)

Returns a doubleword binary value that indicates the maximum size of the heap in bytes that is allocated to the JVM server. This value is set by the **-Xmx** option in the JVM profile.

**OCCUPANCY**(*data-area*)

Returns a doubleword binary value that indicates the size of the heap in bytes after the last garbage collection ran in the JVM server.

**PID**(*data-area*)

Returns a fullword value that indicates the process ID (PID) of the JVM.

**INQUIRE MQCONN**

A new CVDA value GROUPRESYNC is added to the RESYNCMEMBER option:

**GROUPRESYNC**

CICS connects to any member of the queue-sharing group. The queue manager is chosen by WebSphere MQ and it asks CICS to resolve indoubt units of work on behalf of all eligible queue managers in the queue-sharing group. This function is called *group unit of recovery*.

**INQUIRE PROGRAM**

A new option JVMSERVER is added:

**JVMSERVER**(*data-area*) (**Java programs only**)

Returns the name of the JVM server in which this Java program runs. The name can be up to 8 characters in length.

A new CVDA value REQUIRED is added to the CONCURRENCY option:

**REQUIRED**

The program is defined as threadsafe, and must run on an open TCB. The type of open TCB used depends on the API setting.

**INQUIRE TCPIPService**

A new option MAXPERSIST is added:

**MAXPERSIST**(*data-area*)

Returns, in fullword binary form, the setting for the maximum number of persistent connections from web clients that the CICS region allows for this port at any one time. This setting applies only for the HTTP protocol. A null setting (-1) means that there is no limit on the number of persistent connections. A zero setting means that no persistent connections are allowed. A zero setting is not compliant with the HTTP/1.1 specification and must not be set in a CICS region that is handling external requests.

## INQUIRE TSMODEL

A new option EXPIRYINT is added: Note: EXPIRYINTMIN is introduced in CICS TS V5.2 and is now preferred:

### EXPIRYINT(*data-area*)

Returns a fullword binary field giving the expiry interval, in hours, for temporary storage queues matching this model. The value returned is derived from the EXPIRYINTMIN value rounded up to the next hour, or if minutes are not specified from any EXPIRYINT value defined in the model from a previous release. If a temporary storage queue is not referenced during its expiry interval, it becomes eligible to be deleted automatically by CICS. A value of zero means that no expiry interval applies to queues matching this model, so they are never eligible for automatic deletion. CICS does not apply an expiry interval to recoverable, remote or temporary storage queues created by CICS. Starting with CICS TS 5.2, the expiry interval now also applies to shared temporary storage queues.

## INQUIRE TSQUEUE / TSQNAME

A new option EXPIRYINT is added. Note: EXPIRYINTMIN is introduced in CICS TS V5.2 and is now preferred:

### EXPIRYINT(*data-area*)

Returns a fullword binary field that gives the expiry interval, in hours, that is defined for the temporary storage queue in its TSMODEL resource definition.

The value returned is derived from the EXPIRYINTMIN value rounded up to the next hour, or, if minutes are not specified, from any EXPIRYINT value defined in the model from a previous release. If the temporary storage queue is not referenced during the expiry interval, it becomes eligible to be deleted automatically by CICS.

A value of zero means that no expiry interval applies to the temporary storage queue, so it is never eligible for automatic deletion. In addition, the following types of temporary storage queues are never deleted automatically by CICS, even if a nonzero expiry interval is set in the matching TSMODEL resource definition:

- Queues in auxiliary temporary storage that are defined as recoverable.
- Queues in a remote CICS region.
- Queues that CICS creates for its own use.

From CICS TS 5.2, the expiry interval also applies to shared temporary storage queues.

## INQUIRE URIMAP

New options SOCKETCLOSE and SOCKPOOLSIZE are added:

### SOCKETCLOSE(*data-area*)

Returns, in fullword binary form, the maximum length of time in seconds that CICS keeps a client HTTP connection open for reuse after the CICS application has finished using it. If the value is 0, CICS does not keep connections open for reuse. This attribute is for USAGE(CLIENT). For other usage types, CICS returns a null value (-1).

### SOCKPOOLSIZE(*data-area*)

Returns, in fullword binary form, the number of client HTTP connections that CICS is currently holding in a pool in a dormant state. The connections can be

reused by any CICS application that connects as a Web client to the same host and port. This attribute is for USAGE(CLIENT). For other usage types, CICS returns a null value (-1).

## INQUIRE WEBSERVICE

A new option ARCHIVEFILE is added:

### ARCHIVEFILE(*data-area*)

Returns the name of an archive file that contains one or more WSDL files. The name can be up to 255 characters in length.

## SET DB2CONN

A new option REUSELIMIT is added:

### REUSELIMIT(*data-value*)

Specifies, as a fullword binary value, a value in the range 0 - 10000 representing the maximum number of times a thread can be reused before it is terminated. The default is 1000. A value of 0 means that there is no limit on the number of times that a thread can be reused.

The reuse limit applies to unprotected threads both in the pool and on a DB2ENTRY, and to protected DB2ENTRY threads.

## SET FILE

A new option LSRPOOLNUM is added:

### LSRPOOLNUM(*data-value*) (VSAM only)

Specifies, as a fullword binary value, the number of the LSR pool associated with this file. LSR pool IDs are in the range 1 through 255.

If the file cannot share buffers, set this value to 0.

For a CICS-maintained or user-maintained data table, the value must be 1 or greater. Both these types of CICS shared data tables must use LSR access mode (unless the file is defined to be opened in RLS access mode).

For a coupling facility data table, you can set this value to 0.

## SET MQCONN

A new value GROUPRESYNC is added to the RESYNCMEMBER option:

### GROUPRESYNC

CICS connects to any member of the queue-sharing group. The queue manager is chosen by WebSphere MQ and it asks CICS to resolve indoubt units of work on behalf of all eligible queue managers in the queue-sharing group. This function is called *group unit of recovery*. The GROUPRESYNC option can be used only when you are running a release of WebSphere MQ that supports group unit of recovery for CICS and when the GROUPPUR attribute has been enabled in the WebSphere MQ queue managers.

When an attempt is made to connect CICS to WebSphere MQ by using an **EXEC CICS SET MQCONN CONNECTED** command and RESYNCMEMBER(GROUPRESYNC) is set but WebSphere MQ does not support group unit of recovery, or group unit of recovery is not

enabled, then WebSphere MQ rejects the connection attempt. The connection attempt results in the SET command failing with INVREQ and RESP2=9 (connection error).

Do not change the setting for RESYNCMEMBER when units of work are outstanding in WebSphere MQ because this means that units of work cannot be resolved. A unit of work held in CICS is identified with a resource manager qualifier. When RESYNCMEMBER(GROUPRESYNC) is used the qualifier is the name of the queue-sharing group, otherwise the qualifier used is the name of the individual queue manager.

## Resource signature options added to INQUIRE SPI command

The **INQUIRE** command has new options to support the resource signature.

### Changed command, INQUIRE

The definition and installation signature options are added to the **INQUIRE** command for the following resource types:

- ATOMSERVICE
- BUNDLE
- CONNECTION
- DB2CONN
- DB2ENTRY
- DB2TRAN
- DOCTEMPLATE
- ENQMODEL
- EPADAPTER
- EPADAPTERSET
- EVENTBINDING
- FILE
- IPCONN
- JOURNALMODEL
- JVMSERVER
- LIBRARY
- MQCONN
- MQINI
- OSGIBUNDLE
- PIPELINE
- PROFILE
- PROCESSTYPE
- PROGRAM
- TCPIPSERVICE
- TDQUEUE
- TRANCLASS
- TRANSACTION
- TSMODEL
- URIMAP

WEBSERVICE  
XMLTRANSFORM

The list of possible values for each resource type **CHANGEAGENT** and **INSTALLAGENT** can vary and depends on how the resource was defined and installed. For details of a specific INQUIRE command, see the *CICS System Programming Reference*.

**CHANGEAGENT** (*cvda*)

Returns a CVDA value that identifies the agent that made the last change to the resource definition. The possible values are as follows:

**AUTOINSTALL**

The resource was autoinstalled.

**AUTOINSTALL**

The resource was autoinstalled as a result of specifying an initiation queue name on a CKQC START command, and the previously installed MQCONN definition did not specify a value for INITQNAME.

**CREATESPI**

The resource definition was last changed by an **EXEC CICS CREATE** command.

**CSDAPI**

The resource definition was last changed by a CEDA transaction or the programmable interface to DFHEDAP.

**CSDBATCH**

The resource definition was last changed by a DFHCSDUP job.

**DREPAPI**

The resource definition was last changed by a CICSplex SM BAS API command.

**DYNAMIC**

The resource definition was last changed by a PIPELINE scan.

**DYNAMIC**

The resource was defined as a result of the installation of a DB2ENTRY with TRANSID specified.

**DYNAMIC**

The resource was defined by the CICS scanning mechanism.

**DYNAMIC**

The resource was defined by the CICS system for a template being used through the CICS template manager, DFHWBTL.

**DYNAMIC**

The resource was defined by an ATOMSERVICE resource.

**DYNAMIC**

The resource was defined as a result of an MQCONN resource definition with INITQNAME specified.

**SYSTEM**

The resource definition was last changed by the CICS or CICSplex system.

**TABLE**

The resource definition was last changed by a table definition.

**CHANGEAGREL** (*data-area*)

Returns a 4-digit number of the CICS release that was running when the resource definition was last changed.

**CHANGETIME** (*data-area*)

Returns an ABSTIME value that represents the time stamp when the resource definition was last changed. For more information about the format of the ABSTIME value, see FORMATTIME in Reference -> Application development.

**CHANGEUSRID** (*data-area*)

Returns the 8-character user ID that ran the change agent.

**DEFINETIME** (*data-area*)

Returns an ABSTIME value that represents the time stamp when the resource definition was created.

**DEFINESOURCE** (*data-area*)

Returns the 8-character source of the resource definition. The DEFINESOURCE value depends on the CHANGEAGENT value. For more information, see Summary of the resource signature field values in Product overview.

**INSTALLAGENT** (*cvda*)

Returns a CVDA value that identifies the agent that installed the resource. The possible values are as follows:

**AUTOINSTALL**

The resource was autoinstalled.

**AUTOINSTALL**

The resource was autoinstalled as a result of specifying an initiation queue name on a CKQC START command, and the previously installed MQCONN definition did not specify a value for INITQNAME.

**BUNDLE**

The resource was installed by a bundle deployment.

**CREATESPI**

The resource was installed by an **EXEC CICS CREATE** command.

**CSDAPI**

The resource was installed by a CEDA transaction or the programmable interface to DFHEDAP.

**DYNAMIC**

The resource was installed by using a PIPELINE scan.

**DYNAMIC**

The resource was installed as a result of the installation of a DB2ENTRY with TRANSID specified.

**DYNAMIC**

The resource was installed by the CICS scanning mechanism.

**DYNAMIC**

The resource was installed by the CICS system for a template being used through the CICS template manager, DFHWBTL.

**DYNAMIC**

The resource was installed as a result of the installation of an MQCONN with INITQNAME specified.

**DYNAMIC**

The resource was installed by an ATOMSERVICE resource.

**GRPLIST**

The resource was installed by **GRPLIST INSTALL**.

**MGMTPART**

The resource was installed by an application or platform deployment.

**SYSTEM**

The resource was installed by the CICS or CICSplex SM system.

**TABLE**

The resource was installed by using a table definition.

**INSTALLTIME**(*data-area*)

Returns an ABSTIME value that represents the time stamp when the resource was installed.

**INSTALLUSRID**(*data-area*)

Returns the 8-character user ID that installed the resource.

## Changed SPI commands in CICS TS 4.1

These system programming interface commands were changed in CICS Transaction Server for z/OS, Version 4 Release 1.

### CREATE TCPIP SERVICE

A new option, HOST, replaces IPADDRESS for new programs:

**HOST**( { ANY | **DEFAULT** | *hostname* } )

Specifies the 116-character IPv4 or IPv6 address or host name on which CICS listens for incoming connections. Use HOST instead of IPADDRESS when you define new resources. Do not specify both HOST and IPADDRESS, because HOST always takes precedence over IPADDRESS. IPADDRESS is supported for existing programs that specify IPv4 function.

Possible values are as follows:

**ANY** The ANY option has the same function as the ANY and INADDR\_ANY options of IPADDRESS. The ANY option specifies that CICS listens on any of the addresses known to TCP/IP for the host system. You can have multiple IP addresses defined for a host. By specifying ANY, you also allow for the TCPIP SERVICE definition to be shared among CICS servers. If you specify ANY, CICS attempts to bind to the port on every stack where it is defined. If, in addition, you want more than one CICS region to bind to the port, you must specify the SHAREPORT option in every stack where the port is defined. If you do not do so, only one CICS region can bind to the port number in those stacks that do not have the SHAREPORT option. Subsequent attempts by other regions to bind to every stack fail, and CICS issues a message indicating that the port is in use.

If you specify the ANY option in a dual-mode (IPv4 and IPv6) environment, CICS attempts to reuse the most recent IPv4 or IPv6 address. If this is the first connection, and CICS cannot retrieve an address, 0.0.0.0 is returned, and no affinity is assigned.

**DEFAULT**

The DEFAULT option assigns affinity to the TCP/IP stack that is defined as the default in a multistack CINET environment.



If the DEFAULT option is used in a dual-mode (IPv4 and IPv6) environment, affinity is assigned to the IPv4 environment because the DEFAULT option is applied to the IPv4 environment.

If DEFAULT is used in a non-CINET environment or no default TCP/IP stack exists, an exception trace is written, 0.0.0.0 is returned, and no affinity is assigned.

If you are operating in a dual-mode (IPv4 and IPv6) environment, specifying HOST(DEFAULT) forces all traffic to pass across the IPv4 network connection.

#### *hostname*

*hostname* can be a character host name, an IPv4 address, or an IPv6 address.

You can specify an address as a character name that can be looked up on the domain name server. The host name can be entered in uppercase, lowercase, or mixed case, but if a host name is specified instead of an IP address, the host name is converted to lowercase in the TCPIP SERVICE definition.

Do not use a character host name if you have a list of addresses at the domain name server, because *hostname* resolves against the first IP address only in the list (that is, the server does not listen on any of the IP addresses in the list for this host name). If you require a particular IP address in a list at the domain name server, define the IP address explicitly in *hostname*.

If you specify an IPv6 address (or a host name that resolves to an IPv6 address), ensure that you are operating in a dual-mode (IPv4 and IPv6) environment and that the client or server that you are communicating with is also operating in a dual-mode (IPv4 and IPv6) environment. For more information about IPv6, see Understanding IPv6 and CICS in Product overview.

You can specify IPv4 and IPv6 addresses in a number of acceptable formats. See IP addresses in Product overview for more information about address formats.

## INQUIRE ASSOCIATION

A new option, CLIENTLOC, returns information about z/OS Communication Server socket options. A new option, SRVRIPFAMILY, replaces the IPFAMILY option for new programs. A new option, CLNTIPFAMILY, is also available. The ODIPFAMILY option now includes IPv6 values. The CLIENTIPADDR, ODCLNTIPADDR, and SERVERIPADDR options now return IPv6 addresses. New options, DNAME and REALM, display the distinguished name and realm name returned for the specified task.

### **CLIENTIPADDR**(*data-area*)

Returns, into a 39-character area, the IP address of the TCP/IP client that requested this task to start. When the CLNTIPFAMILY option returns IPV4, the returned address is a 15-character dotted decimal IPv4 address, padded with blanks. When CLNTIPFAMILY returns IPV6, the address returned is a 3- to 39-character colon hexadecimal IPv6 address, padded with blanks. If this task was not started from a TCP/IP client, CLIENTIPADDR returns 0.0.0.0 and CLNTIPFAMILY returns NOTAPPLIC.



**CLIENTLOC(*data-area*)**

Returns a 32-character area that represents the SO\_CLUSTERCONNTYPE socket option returned by z/OS Communications Server for the facility in the FACILNAME option. The binary format of SO\_CLUSTERCONNTYPE is converted to characters in CLIENTLOC and displayed as either zeros or ones. The CLIENTLOC option represents the current socket, unless the value in the FACILTYPE option is IPIC, in which case CLIENTLOC is taken from the CLIENTLOC value for the IPCONN. For details, see INQUIRE IPCONN in Reference > System programming. For a description of SO\_CLUSTERCONNTYPE and an explanation of the bit settings, see z/OS Communications Server IP Sockets Application Programming Interface Guide and Reference.

**CLNTIPFAMILY(*cvda*)**

Returns a value indicating the form of TCP/IP addressing used by this task. The CVDA values are as follows:

**IPV4** The address is specified in IPv4 dotted decimal address format.

**IPV6** The address is specified in IPv6 colon hexadecimal address format.

**NOTAPPLIC**

0.0.0.0 is specified in the CLIENTIPADDR option and the task was not started from a TCP/IP client.

**DNAME(*data-area*)**

Returns the 1- to 246-character distinguished name padded with trailing ASCII blanks. Distinguished names are represented in UTF-8 encoding. If a distinguished name is not available for the task, DNAME returns ASCII blanks.

**ODCLNTIPADDR(*data-area*)**

Returns, into a 39-character area, the IP address of the TCP/IP client that requested the originating task to start. When ODIPFAMILY returns IPV6, the address returned is a 3- to 39-character colon hexadecimal IPv6 address, padded with blanks. If the originating task was not started from a TCP/IP client, ODCLNTIPADDR returns 0.0.0.0 and ODIPFAMILY returns NOTAPPLIC.

**ODIPFAMILY(*cvda*)**

Returns a value indicating the form of TCP/IP addressing used by the originating task. CVDA values are as follows:

**IPV4** The address is specified in IPv4 dotted decimal address format.

**IPV6** The address is specified in IPv6 colon hexadecimal address format.

**NOTAPPLIC**

0.0.0.0 is specified in the ODCLNTIPADDR option and the task was not started from a TCP/IP client.

**REALM(*data-area*)**

Returns the 1- to 255-character realm name in UTF-8 encoding, padded with trailing ASCII blanks. The realm is a component of a distributed identity and defines the region where a security ID applies.

**SERVERIPADDR(*data-area*)**

Returns, into a 39-character area, the IP address of the IP service that scheduled this task. When the IPFAMILY option returns IPV4, the returned address is a 15-character dotted decimal IPv4 address, padded with blanks. When SRVRIPFAMILY returns IPV6, it is a 3- to 39-character colon hexadecimal IPv6 address, padded with blanks. If this task was not started by an IP service, SERVERIPADDR returns 0.0.0.0 and SRVRIPFAMILY returns NOTAPPLIC.

**SRVRIPFAMILY(*cvda*)**

Replaces the IPFAMILY option. SRVRIPFAMILY returns a value indicating the form of IP addressing used by this task. CVDA values are as follows:

**IPV4** The address is specified in IPv4 dotted decimal address format.

**IPV6** The address is specified in IPv6 colon hexadecimal address format.

**NOTAPPLIC**

0.0.0.0 is specified in the SERVERIPADDR option and the task was not started from a TCP/IP client.

**INQUIRE ASSOCIATION LIST**

New options, DNAME and REALM, display the distinguished name search filter and realm name returned for the specified list of tasks. New filtering options apply to the DNAME and REALM options. New options, DNAMELEN and REALMLEN, display the length of the distinguished name search filter and realm name fields.

**DNAME(*data-value*)**

Specifies UTF-8 character field, up to a maximum of 246 characters, including 2 characters for opening and closing parentheses. You must specify parentheses in the DNAME option. DNAME is a filter to return a list of distinguished names for the realm specified in the REALM option. Distinguished names are represented in UTF-8 encoding, therefore null values are represented with ASCII blanks. An empty list is returned if you specify this option and you do not have the correct z/OS release.

The following search forms are accepted:

(attr=value)  
(attr=value\*)

where:

- attr is the first attribute in the distinguished name for the realm, specified in the REALM option. This attribute is case-sensitive.
- value is the first value in the distinguished name, which can be a generic name if value\* is specified. \* represents zero or more characters. This attribute is case-sensitive.

For example, if a distinguished name is in the following format:

CN=John Smith

the search argument can be in this format:

(CN=John Smith)

or a generic form can be in this format:

(CN=John S\*)

If a generic filter, for example, (CN=\*), is specified, only the tasks that have distinguished names with the first attribute specified are included.

If you are filtering on a name that is greater than 244 characters in length, you must use a generic filter.

If value is not specified, or DNAME is not set, all distinguished names for the specified realm are included.

**DNAMELEN(*data-value*)**

Specifies the length of the DNAME option. DNAMELEN is a numeric value, up to a maximum of 246.

**REALM(*data-value*)**

Specifies the realm name in UTF-8 encoding, therefore null values are represented with ASCII blanks. The realm is a component of a distributed identity and defines the region where a security ID applies. If you are using WebSphere Application Server, the realm name can be the service that provides access to the registry where the user is defined. The LDAP server configuration listen statement provides the realm name in URL format.

An empty list is returned if you specify this option and you do not have the correct z/OS release.

If a value is not specified, or REALM is not set, all realms are included.

**REALMLEN(*data-value*)**

Specifies the length of the REALM option. REALMLEN is a numeric value, up to a maximum of 255.

**INQUIRE DISPATCHER**

Two new options are added:

**ACTTHRDTCBS(*data-area*)**

Returns a fullword binary field giving the total number of T8 mode open TCBs currently allocated to enabled JVM servers.

The T8 mode TCBs are allocated from a pool of open TCBs. One pool is used by one JVM server. CICS dispatcher maintains the pools of T8 mode TCBs for use in the JVM server runtime environment.

**MAXTHRDTCBS(*data-area*)**

Returns a fullword binary field giving the maximum number of T8 mode open TCBs that can exist concurrently in the CICS region for all enabled and disabled JVMSERVER resources; that is, the total number of threads reserved for all the JVM servers in the region. The number of threads reserved for each JVM server is the THREADLIMIT value on the JVMSERVER resource, plus 1 (the TCB that is reserved for the JVM server). For more information about THREADLIMIT, see JVMSERVER attributes in Reference -> System definition.

The difference between MAXTHRDTCBS and ACTTHRDTCBS represents the number of TCBs that are free. If you initialize another JVM server, one TCB is reserved for the JVM server.

**INQUIRE IPCONN**

The HOST option is updated and new options, HOSTTYPE, IPRESOLVED, IPFAMILY, return IPv6 information. A new option, CLIENTLOC, returns information about z/OS Communications Server socket options, and a new option, PARTNER, returns information about the product token of a partner system. A new option, IDPROP, displays whether the sender will include the distributed identity in attach requests over the IPIC connection.

**CLIENTLOC(*data-area*)**

Returns a 32-character area that represents an evaluation of the SO\_CLUSTERCONNTYPE options returned by z/OS Communications Server, for all the sockets used by the IPIC connection. For a description of SO\_CLUSTERCONNTYPE and an explanation of the bit settings, see z/OS Communications Server IP Sockets Application Programming Interface Guide and Reference. Multiple sockets might provide the IPIC connection with a number of different paths to the partner system. Each character in

CLIENTLOC is displayed as either zero or one. CLIENTLOC represents the most diverse route between the CICS region and its partner system.

**HOST**(*data-area*)

Returns the 116-character host name of the remote system or its IPv4 or IPv6 address. The HOST option can be a character host name, an IPv4 address, or an IPv6 address. HOST is specified in the resource definition. HOST displays all IPv4 addresses as native IPv4 dotted decimal addresses, for example, 1.2.3.4, irrespective of which type of address format is used. You can specify IPv4 and IPv6 addresses in a number of acceptable formats. See IP addresses in Product overview for more information on address formats.

**HOSTTYPE**(*cvda*)

Returns the address format of the HOST option. HOSTTYPE is set by the domain when the IPIC connection is installed. CVDA values are as follows:

**HOSTNAME**

The HOST option contains a character host name. The IP address that corresponds to the host name is looked up in the domain name server.

**IPV4** The address is an IPv4 address.

**IPV6** The address is an IPv6 address.

**NOTAPPLIC**

An incorrect host address was returned (HOST=0.0.0.0).

**IDPROP**(*cvda*)

Indicates whether the sender includes the distributed identity in requests over the IPIC connection. The IDPROP option is meaningful only if a connection extends outside a sysplex and is used primarily to prevent distributed identities being transmitted between enterprises. If the connection is between systems in the same sysplex, the value returned by this option is ignored, and the connection operates as if IDPROP(OPTIONAL) is specified.

CDVA values are as follows:

**NOTALLOWED**

A user ID associated with the sending transaction is sent for requests using this connection. NOTALLOWED is the default value.

**OPTIONAL**

A distributed identity is sent, if available. The user ID associated with the sending transaction is also sent.

**REQUIRED**

A distributed identity is required for requests using this connection. If REQUIRED is specified, the receiving system must support distributed identities. The user ID associated with the sending transaction is not sent.

**IPFAMILY**(*cvda*)

Returns the address format of the IPRESOLVED option. IPFAMILY is set only when the IPIC connection is acquired. CDVA values are as follows:

**IPV4** The address is specified in IPv4 dotted decimal address format.

**IPV6** The address is specified in IPv6 colon hexadecimal address format.

**UNKNOWN**

The IPRESOLVED option is not yet in use or the address cannot be resolved. UNKNOWN is the default when IPRESOLVED is 0.0.0.0.

### **IPRESOLVED(*data-area*)**

Returns a 39-character field that specifies the IPv4 or IPv6 address of the HOST option. If the IPCONN resource has not yet been acquired or has been released, or the address cannot be resolved, a default value of 0.0.0.0 is returned. After the IPIC connection is acquired, IPRESOLVED displays the last resolved IP address that was used by the IPCONN resource. IPRESOLVED is reset to 0.0.0.0 when the resource is out of service and released. The content of IPRESOLVED is not recoverable after a warm or emergency restart.

For HA IPCONNnS that are acquired, the value will be that of the specific region in the HA cluster this IPCONN connected to.

### **PARTNER(*data-area*)**

Returns a 64-character field indicating the product token of the partner system. The field is blank when the connection is not acquired or if the partner system does not indicate a product type when the connection is established. For example, the partner system is IBM\_CICS\_Transaction\_Server/4.1.0(zOS) for a CICS TS 4.1 partner.

## **INQUIRE MONITOR**

The default setting for the COMPRESSST option has changed. Data compression is now the default option. A new option, DPLLIMIT, returns the maximum number of DPL requests allowed for transaction resource monitoring. A new option, IDNTYCLASS, specifies whether identity class monitoring is enabled.

### **COMPRESSST(*cvda*)**

Returns a CVDA value indicating whether data compression is active for the CICS SMF 110 monitoring records produced by the CICS monitoring facility. CVDA values are as follows:

#### **COMPRESS**

Data compression is being performed for the monitoring records. Data compression is the default.

#### **NOCOMPRESS**

Data compression is not being performed for the monitoring records.

### **DPLLIMIT(*data-area*)**

Returns the maximum number of distributed program link requests for which CICS is to perform transaction resource monitoring.

### **IDNTYCLASS(*cvda*)**

Returns a CVDA value indicating whether the identity class of monitoring data is recorded when monitoring is active. CVDA values are as follows:

#### **IDNTY**

Identity data is recorded.

#### **NOIDNTY**

Identity data is not recorded.

## **INQUIRE SYSTEM**

A new MQCONN option is added:

### **MQCONN(*data-area*)**

Returns the 1- to 8-character name of the MQCONN resource definition that is currently installed for the CICS region, or blanks if no MQCONN definition is

currently installed. Only one MQCONN definition can be installed at a time. The MQCONN resource definition specifies the attributes of the connection between CICS and WebSphere MQ.

## INQUIRE TCIPSERVICE

A new option, HOST, returns the host name, IPv4, or IPv6 address of the remote system, which replaces the IPADDRESS option for new programs. A new option, HOSTTYPE, returns the format of the contents of the HOST option or of the IPADDRESS option, if HOST is not specified. A new option, IPRESOLVED, returns the IP address of the host and a new option, IPFAMILY, returns the format of the IPRESOLVED option.

### HOST(*data-area*)

Returns the 116-character host name of the remote system or its IP address.

HOST displays character host name, an IPv4 address, an IPv6 address, ANY, or DEFAULT. The HOST option provides the same function as IPADDRESS for defined hostnames and defined IPv4 addresses, but also supports defined IPv6 format addresses. However, it differs from IPADDRESS in that DEFAULT and ANY are returned instead of an IP address, because this information is available in IPRESOLVED. If you are using IPv6 connections, use the HOST option for your queries, instead of IPADDRESS. HOST displays all IPv4 addresses as native IPv4 dotted decimal addresses; for example, 1.2.3.4, regardless of the type of address format used.

You can specify IPv4 and IPv6 addresses in a number of acceptable formats. See IP addresses in Product overview for more information about address formats.

HOST is specified in the resource definition.

### HOSTTYPE(*cvda*)

Returns the address format of HOST, or if HOST is not specified the IPADDRESS option. HOSTTYPE is set by the domain when the TCIPSERVICE is installed. The CVDA values are as follows:

**ANY** The ANY option is specified for the HOST option.

#### DEFAULT

The DEFAULT option is specified for the HOST option.

#### HOSTNAME

The HOST option contains a character host name. The IP address that corresponds to the host name is looked up in the domain name server.

**IPv4** The HOST option contains a dotted decimal IPv4 address.

**IPv6** The HOST option contains a colon hexadecimal IPv6 address.

#### NOTAPPLIC

0.0.0.0 is specified in the HOST option.

### IPFAMILY(*cvda*)

Returns the address format of the IPRESOLVED option. The CVDA values are as follows:

#### UNKNOWN

IPRESOLVED is not yet used or the address cannot be resolved.

UNKNOWN is the default when IPRESOLVED is 0.0.0.0.

**IPv4** The IPRESOLVED option contains a dotted decimal IPv4 address.

**IPV6** The IPRESOLVED option contains a colon hexadecimal IPv6 address.

**IPRESOLVED(*data-area*)**

Returns, in a 39-character area, the IPv4, or IPv6 address of the HOST option. If the OPENSTATUS option is not set to OPEN, or the address cannot be resolved, a value of 0.0.0.0 is returned. If the HOST option is set to ANY, IPRESOLVED always returns the IPv4 address for the system on which CICS is running, even if other IPv4 or IPv6 addresses are available.

The content of IPRESOLVED is not recoverable after a warm or emergency restart.

## INQUIRE TERMINAL

New option REMOTESYSTEM is added. The REMOTESYSTEM option now provides information about IP connections.

**REMOTESYSTEM(*data-area*)**

Returns the first four characters of a connection, if the subject of the inquiry is a remote terminal. The named connection can be either a connection entry that links towards the TOR or an indirect connection that provides the netname of the TOR.

Otherwise this field is blank.

## INQUIRE TRACETYPE

A new option FLAGSET is added:

**FLAGSET(*cvda*)**

Indicates whether the standard or special flags for the specified component are to be returned. CVDA values are as follows:

**SPECIAL**

Indicates that CICS returns the trace levels for special tracing.

**STANDARD**

Indicates that CICS returns the trace levels for standard tracing.

## INQUIRE TRANSACTION

The REMOTESYSTEM option now provides information about IP connections.

**REMOTESYSTEM(*data-area*)**

Returns the first four characters of the remote system on which this transaction is defined, if it is defined as a remote transaction.

If the remote transaction is defined as DYNAMIC=YES, and the REMOTESYSTEM option is omitted, CICS returns the name of the local region.

Blanks are returned if the transaction is not remote.

## INQUIRE URIMAP

A new option, AUTHENTICATE, provides information about whether the host specified in the USAGE(CLIENT) URIMAP resource requires authentication.

**AUTHENTICATE(*cvda*)**

Returns a CVDA value indicating whether to provide authentication information to a web services provider. This attribute is for USAGE(CLIENT). CVDA values are as follows:



## **BASICAUTH**

The web services provider requires HTTP basic authentication. You can supply credentials to the web services requester (a user ID and password) to the global user exit, XWBAUTH, which, if enabled, sends the credentials to the web services provider.

## **NOAUTHENTIC**

The web services provider does not require authentication.

A new option, ATOMSERVICE, returns the resource definition name for an Atom feed. The USAGE option has a new value, ATOM.

### **ATOMSERVICE** (*data-area*)

Returns the 1- to 8-character name of an ATOMSERVICE resource definition for an Atom feed. The ATOMSERVICE resource definition defines an Atom service, feed, collection, or category document, and identifies the Atom configuration file, CICS resource or application program, and XML binding that are used to supply the data for the feed. This attribute is for USAGE(ATOM).

### **USAGE** (*cvda*)

Returns a CVDA value indicating the purpose of this URIMAP definition.

## **ATOM**

A URIMAP resource for an Atom feed. This type of URIMAP resource is used for an incoming request for data that CICS makes available as an Atom feed. The URIMAP resource maps the request URI to an ATOMSERVICE resource definition, which defines an Atom document.

The HOST option now allows IPv6 addresses and a new option, HOSTTYPE, returns the format of the contents of the HOST option. A new option, IPRESOLVED, returns the IP address of the host and a new option, IPFAMILY, returns the format of the IPRESOLVED option. A new option, PORT, returns the port number used for the connection.

### **HOST** (*data-area*)

Returns the 116-character host name or its IPv4 or IPv6 address. The HOST option can be a character host name, an IPv4 address, or an IPv6 address. HOST is specified in the resource definition. HOST displays all IPv4 addresses as native IPv4 dotted decimal addresses, for example, 1.2.3.4, regardless of the type of address format used. You can specify IPv4 and IPv6 addresses in a number of acceptable formats. See IP addresses in Product overview for more information about address formats.

For USAGE(CLIENT), the port number is also displayed in the HOST option if HOST contains a native IPv4 address or a host name; however, if you specify a hostname that is greater than 110 characters in length, port information is not displayed in the HOST option. This rule also applies if you specify an IPv4 address in IPv6 format. Use the PORT option to view the port number.

### **HOSTTYPE** (*cvda*)

Returns the address format of the HOST option. HOSTTYPE is set by CICS when the URIMAP is installed. CVDA values are as follows:

#### **HOSTNAME**

The HOST option contains a character host name. The IP address that corresponds to the host name is looked up in the domain name server.

**IPv4** The address is specified in IPv4 dotted decimal address format.

**IPv6** The address is specified in IPv6 colon hexadecimal address format.



## **NOTAPPLIC**

An incorrect host address was returned (HOST=0.0.0.0 or HOST=\*), or the HOSTTYPE option is used with URIMAP(ATOM), URIMAP(JVMSEVER), URIMAP(PIPELINE), or URIMAP(SERVER).

## **IPFAMILY**(*cvda*)

Returns the address format of the IPRESOLVED option. CVDA values are as follows:

**IPv4** The address is specified in IPv4 dotted decimal address format.

**IPv6** The address is specified in IPv6 colon hexadecimal address format.

## **UNKNOWN**

IPRESOLVED is not yet in use or the address cannot be resolved.

UNKNOWN is the default when IPRESOLVED is 0.0.0.0, or if the IPFAMILY option is used with USAGE(ATOM), USAGE(JVMSEVER), USAGE(PIPELINE), or USAGE(SERVER).

## **IPRESOLVED**(*data-area*)

Returns a 39-character field that specifies the IPv4 or IPv6 address of the HOST option. This attribute is for all types except USAGE(SERVER) and USAGE(JVMSEVER). If the URIMAP is installed but has not yet been used to establish a connection, or the address cannot be resolved, a default value of 0.0.0.0 is returned. When the URIMAP establishes a connection, IPRESOLVED displays the resolved IP address that was used by the resource to connect. IPRESOLVED is reset to 0.0.0.0 when the resource is disabled. The content of IPRESOLVED is not recoverable after a warm or emergency restart.

## **PORT**(*value*)

Displays the numeric port number value used by USAGE(CLIENT) for the connection to the server, in the range 1 - 65535. The port number is also displayed in the HOST option if HOST contains a native IPv4 address or a host name. For USAGE(CLIENT), the PORT attribute always contains the port number that is being used for the communication, even if PORT(NO) is specified on the URIMAP at define time. For USAGE(ATOM), USAGE(SERVER), or USAGE(PIPELINE), the PORT option displays ().

## **INQUIRE VTAM®**

**Note:** VTAM is now the z/OS Communications Server.

A new option PSTYPE is added:

## **PSTYPE**(*cvda*)

Returns a CVDA value indicating the type of Communications Server persistent sessions support for the CICS region. CVDA values are as follows:

**SNPS** Single-node persistent sessions. Communications Server sessions can be recovered after a CICS failure and restart.

## **MNPS**

Multinode persistent sessions. Communications Server sessions can also be recovered after a Communications Server or z/OS failure in a sysplex.

**NOPS** Communications Server persistent sessions support is not used for this CICS region.

## SET MONITOR

New options DPLLIMIT, FILELIMIT, IDNTYCLASS, and TSQUEUELIMIT are added.

### **DPLLIMIT**(*data-value*)

Specifies the maximum number of distributed program link requests for which CICS is to perform transaction resource monitoring, as a halfword binary value. The value specified must be in the range 0 - 64.

### **FILELIMIT**(*data-value*)

Specifies the maximum number of files for which CICS is to perform transaction resource monitoring, as a halfword binary value. The value specified must be in the range 0 - 64.

### **IDNTYCLASS**(*cvda*)

Specifies whether the identity class of monitoring data is to be recorded when monitoring is active. CVDA values are as follows:

#### **IDNTY**

Identity data is to be recorded.

#### **NOIDNTY**

Identity data is not to be recorded.

### **TSQUEUELIMIT**(*data-value*)

Specifies the maximum number of temporary storage queues for which CICS is to perform transaction resource monitoring, as a halfword binary value. The value specified must be in the range 0 - 64.

## SET TRACETYPE

A new option FLAGSET is added:

### **FLAGSET**(*cvda*)

Indicates whether the standard or special flags, for the specified component, are to be set. CVDA values are as follows:

#### **SPECIAL**

Specifies that you want to set levels for special tracing, for the components listed.

#### **STANDARD**

Specifies that you want to set levels for standard tracing, for the components listed.

## SET VTAM

This command does not allow you to change PSDINTERVAL, PSDINTHRS, PSDINTMINS, or PSDINTSECS to a nonzero value when the system initialization parameter PSTYPE=NOPS is in effect.

---

## New SPI commands

CICS Transaction Server for z/OS, Version 5 Release 2 includes some new SPI commands that you can use to control new system resources or to work in new ways with existing resources.

## **New system programming commands added in CICS Transaction Server for z/OS, Version 5 Release 2**

No new system programming commands were added in CICS Transaction Server for z/OS, Version 5 Release 2.

## **New system programming commands added in CICS Transaction Server for z/OS, Version 5 Release 1**

### **PERFORM SSL REBUILD**

Refresh the SSL environment and the cache of certificates for the CICS region.

### **INQUIRE EPADAPTERSET**

Retrieve information about a specified event processing adapter set.

### **INQUIRE EPADAPTINSET**

Retrieve the names of all EP adapters that are specified in an EP adapter set or check whether or not a named EP adapter set contains a named EP adapter.

### **SET EPADAPTERSET**

Set the status of a specified EP adapter set to enabled or disabled.

## **New system programming commands added in CICS Transaction Server for z/OS, Version 4 Release 2**

### **INQUIRE CAPDATAPRED**

Retrieve information about an application data predicate that is defined for a capture specification.

### **INQUIRE CAPINFOSRCE**

Retrieve information about an information source that is defined for a capture specification.

### **INQUIRE CAPOPTPRED**

Retrieve information about an application command option predicate that is defined for a capture specification.

### **INQUIRE EPADAPTER**

Retrieve information about a specified event processing adapter.

### **INQUIRE OSGIBUNDLE**

Retrieve information about an OSGi bundle that is installed in a JVM server.

### **INQUIRE OSGISERVICE**

Retrieve information about OSGi services that are registered in a CICS region.

### **INQUIRE TEMPSTORAGE**

Retrieve information about storage used by temporary storage queues in the CICS region.

### **SET EPADAPTER**

Set the status of a specified EP adapter to enabled or disabled.

### **SET TEMPSTORAGE**

Set the amount of storage that is available to temporary storage queues in the CICS region.

## New system programming commands added in CICS Transaction Server for z/OS, Version 4 Release 1

### **CREATE ATOMSERVICE**

Define an ATOMSERVICE resource definition in the local CICS region.

### **CREATE BUNDLE**

Define a BUNDLE resource definition in the local CICS region.

### **CREATE JVMSERVER**

Define a JVMSERVER resource definition in the local CICS region.

### **CREATE MQCONN**

Define an MQCONN resource in the local CICS region.

### **CSD ADD**

Add a group to a list on the CSD.

### **CSD ALTER**

Change the attributes of an existing resource definition on the CSD.

### **CSD APPEND**

Append the groups in one list on the CSD to the end of another list.

### **CSD COPY**

Copy a resource definition in a group to a different group, or copy an entire group.

### **CSD DEFINE**

Create a new resource definition on the CSD.

### **CSD DELETE**

Delete a list, a group, or a single resource definition in a group from the CSD.

### **CSD DISCONNECT**

Disconnect the current task from the CSD.

### **CSD ENDBRGROUP**

End the current browse of the groups in the CSD or of the groups in a list.

### **CSD ENDBRLIST**

End the current browse of the lists in the CSD.

### **CSD ENDBRRSRCE**

End the current browse of the resources in a specified group.

### **CSD GETNEXTGROUP**

Get the next group in a group browse.

### **CSD GETNEXTLIST**

Get the next list in a list browse.

### **CSD GETNEXTRSRCE**

Get the details of next resource in a resource browse.

### **CSD INQUIREGROUP**

Inquire on a group in the CSD, or on a group in a specified list in the CSD.

### **CSD INQUIRELIST**

Inquire on a list in the CSD.

### **CSD INQUIRERSRCE**

Inquire on the attributes of a resource in a specified group in the CSD.

**CSD INSTALL**

Install in the CSD a list, a group, or a single resource definition in a group.

**CSD LOCK**

Restrict update and delete access for a group or list to a single operator identifier.

**CSD REMOVE**

Remove a group from a list on the CSD.

**CSD RENAME**

Rename a resource definition on the CSD.

**CSD STARTBRGROUP**

Start a browse of the groups in the CSD or of the groups in a list.

**CSD STARTBRLIST**

Start a browse of the lists in the CSD.

**CSD STARTBRRSRCE**

Start a browse of the resources in a specified group.

**CSD UNLOCK**

Remove the lock from a group or list of definitions.

**CSD USERDEFINE**

Create a new resource definition with user-specified default values on the CSD.

**DISCARD ATOMSERVICE**

Remove an ATOMSERVICE resource definition from the system.

**DISCARD BUNDLE**

Remove a BUNDLE resource definition from the system.

**DISCARD JVMSERVER**

Remove a JVMSERVER resource definition from the system.

**DISCARD MQCONN**

Remove an MQCONN resource definition. Any implicit MQINI resource definition is also discarded.

**INQUIRE ATOMSERVICE**

Retrieve information about ATOMSERVICE resources.

**INQUIRE BUNDLE**

Retrieve information about installed BUNDLE resources.

**INQUIRE BUNDLEPART**

Retrieve information about the resources that are contained in an installed BUNDLE resource.

**INQUIRE CAPTURESPEC**

Retrieve information about a capture specification.

**INQUIRE EVENTBINDING**

Retrieve information about an EVENTBINDING resource.

**INQUIRE EVENTPROCESS**

Retrieve the status of event processing in the CICS region.

**INQUIRE JVMSERVER**

Retrieve information about a JVM server in the CICS region.

**INQUIRE MQCONN**

Retrieve information about the connection between CICS and WebSphere MQ.

**INQUIRE MQINI**

Retrieve information about the default initiation queue that is used for the connection between CICS and WebSphere MQ.

**INQUIRE XMLTRANSFORM**

Retrieve information about an installed XMLTRANSFORM resource.

**SET ATOMSERVICE**

Enables or disables an ATOMSERVICE resource.

**SET BUNDLE**

Enables or disables a BUNDLE resource.

**SET EVENTBINDING**

Enables or disables an EVENTBINDING resource.

**SET EVENTPROCESS**

Enables or disables event processing in the CICS region.

**SET JVMSERVER**

Enables or disables a JVMSERVER resource.

**SET MQCONN**

Change the attributes of the connection between CICS and WebSphere MQ. You can also start or stop the connection.

**SET XMLTRANSFORM**

Enables or disables an XMLTRANSFORM resource.

---

## **SPI commands that have been made threadsafe**

These system programming interface commands were not threadsafe when they were first introduced in CICS, but they have now been made threadsafe.

### **SPI commands that were made threadsafe in CICS Transaction Server for z/OS, Version 5 Release 2**

DISCARD PROGRAM  
 DISCARD TRANSACTION  
 EXTRACT STATISTICS  
 INQUIRE DISPATCHER  
 INQUIRE MONITOR  
 INQUIRE MVSTCB  
 INQUIRE PROGRAM  
 INQUIRE STATISTICS  
 INQUIRE SYSTEM  
 INQUIRE TRANSACTION  
 SET DISPATCHER  
 SET MONITOR  
 SET PROGRAM  
 SET STATISTICS  
 SET SYSTEM  
 SET TRANSACTION

**SPI commands that were made threadsafe in CICS Transaction Server for z/OS, Version 5 Release 1**

INQUIRE TRACEDEST  
INQUIRE TRACEFLAG  
INQUIRE TRACETYPE  
SET TASK  
SET TRACEDEST  
SET TRACEFLAG  
SET TRACETYPE

**SPI commands that were made threadsafe in CICS Transaction Server for z/OS, Version 4 Release 2**

RESYNC ENTRYNAME

**SPI commands that were made threadsafe in CICS Transaction Server for z/OS, Version 4 Release 1**

No existing SPI commands were made threadsafe in this release.





---

## Chapter 7. Changes to CEMT

The commands available in the CEMT transaction have been modified to reflect changes to resource definitions and new functions.

### Layout change for CEMT INQUIRE command

Before CICS Transaction Server for z/OS, Version 4 Release 1, the CEMT INQUIRE command returned information about the attributes of certain resources (such as DB2CONN) on a single screen, arranged in the following four-column layout:

**Column 1**

Field name

**Column 2**

Field value

**Column 3**

Field name

**Column 4**

Field value

From CICS Transaction Server for z/OS, Version 4 Release 1, the data is arranged in the following two-column layout:

**Column 1**

Field name

**Column 2**

Field value

To view the field names and field values that were previously displayed in Column 3 and Column 4, use the scroll key. The resource name is also now added to the start of the column.

In CICS TS Version 5.1, the storage location was changed for the CICS-supplied transaction CEMT. The TRANSACTION resource definition for CEMT was changed to specify TASKDATALOC(ANY) instead of TASKDATALOC(BELOW). The CEMT transaction therefore uses virtual storage above the 16 MB line. If you use CEMT to shut down CICS and have PLTSD programs that are AMODE(24), an AEZC abend will occur. To avoid this situation, modify the shutdown program so that it is AMODE(31) and update the appropriate program definition.

---

## Obsolete CEMT commands and options

These CEMT commands and options represent functions that are no longer available, so are no longer displayed in the CEMT transaction.

### Obsolete CEMT commands and options in CICS Transaction Server for z/OS, Version 5 Release 2

CEMT INQUIRE TSMODEL, CEMT INQUIRE TSQUEUE, and CEMT INQUIRE TSQNAME

The EXPIRYINT option is obsolete. EXPIRYINT was used to set the expiry

interval for temporary storage queues in hours. It has been superseded by the EXPIRYINTMIN option, which sets the expiry interval for temporary storage queues in minutes.

### **Obsolete CEMT commands in CICS Transaction Server for z/OS, Version 5 Release 1**

#### **CEMT INQUIRE JVM**

Identifies the pooled JVMs in a CICS region and reports their status.

#### **CEMT INQUIRE JVMPOOL**

Retrieves information about the JVM pool in the CICS region.

#### **CEMT INQUIRE CLASSCACHE**

Retrieves information about the shared class cache for pooled JVMs.

#### **CEMT SET JVMPOOL**

Enable or disable the Java virtual machine (JVM) pool.

#### **CEMT SET CLASSCACHE**

Set the status of autostart for the shared class cache.

#### **CEMT PERFORM CLASSCACHE**

Initialize and terminate the shared class cache that is used by pooled JVMs in the CICS region.

#### **CEMT PERFORM JVMPOOL**

Start and terminate JVMs in the JVM pool.

### **Obsolete CEMT options in CICS Transaction Server for z/OS, Version 5 Release 1**

#### **CEMT INQUIRE DISPATCHER**

The ACTJVMTCBS option and the MAXJVMTCBS option are obsolete. ACTJVMTCBS was used to inquire on the number of J8 and J9 mode TCBs currently allocated to user tasks. MAXJVMTCBS was used to inquire on the maximum number of J8 and J9 mode TCBs allowed in the JVM pool.

#### **CEMT PERFORM STATISTICS**

The BEAN, CORBASERVER, JVMPOOL, JVMPROFILE, and REQUESTMODEL options are obsolete. These options were used to request statistics for enterprise beans, CorbaServer entries, pooled JVMs and their profiles, and request models, which CICS no longer supports.

#### **CEMT SET DISPATCHER**

The MAXJVMTCBS option is obsolete. MAXJVMTCBS was used to change the maximum number of J8 and J9 mode open TCBs allowed in the JVM pool, which no longer exists.

### **Obsolete CEMT options in CICS Transaction Server for z/OS, Version 4 Release 1**

#### **CEMT INQUIRE CLASSCACHE**

The PROFILE option is obsolete. PROFILE was used to specify the JVM profile for the master JVM, which is no longer required.

---

## **Changed CEMT commands**

These CEMT commands have new options or new values for options.

## Inquiring on private resources for applications

A resource that is defined as part of an application installed on a platform is private to that version of that application. For supported resource types, a resource is private if the resource is defined in a CICS bundle that is packaged and installed as part of an application, either as part of the application bundle, or as part of the application binding bundle. A resource that is defined by any other method is publicly available for all tasks, and is known as a public resource.

The following CICS resources are supported as private resources for applications:

- **LIBRARY** resources, which represent one or more data sets, known as dynamic program **LIBRARY** concatenations, from which program load modules can be loaded.
- **PROGRAM** resources, which represent an application program. A program that is auto-installed by a task for an application that is deployed on a platform is also private to that version of the application.

Private **LIBRARY** and **PROGRAM** resources cannot be viewed using the **CEMT INQUIRE LIBRARY** and **CEMT INQUIRE PROGRAM** commands. To inquire on or browse these resources, use the CICS Explorer, or the **EXEC CICS INQUIRE LIBRARY** and **EXEC CICS INQUIRE PROGRAM** CICS system programming commands.

**LIBRARY** concatenations and programs that are defined as a dependency or import for an application bundle or an application binding bundle, and **LIBRARY** concatenations and programs that are defined to CICS using any other method, remain publicly available for all tasks. These **LIBRARY** concatenations and programs can be viewed using the **CEMT** commands.

## CEMT INQUIRE BUNDLE

The new **AVAILSTATUS** option for the **CEMT INQUIRE BUNDLE** command returns the availability status for the CICS bundle.

### **AVAILSTATUS**(*value*)

Displays the availability status of the bundle. The possible values are as follows:

#### **AVAILABLE**

Callers can access all the resources identified in the CICS bundle as application entry points.

#### **UNAVAILABLE**

Callers cannot access any of the resources identified in the CICS bundle as application entry points.

#### **SOMEAVAIL**

Some application entry points are available and some are unavailable.

#### **NOTAPPLIC**

The bundle does not contain any statements of application entry points.

## CEMT INQUIRE JVMSERVER

The **PROFILEDIR** option for the **CEMT INQUIRE JVMSERVER** command now displays the JVM profile directory for JVM servers that are packaged in CICS bundles.

### **PROFILEDIR**(*directory*)

Displays the directory on z/OS UNIX that contains the JVM profile for the JVM server. For a JVM server that is defined in a local CICS region, which uses

a JVM profile stored in the local CICS region, this is the directory specified by the JVMPROFILEDIR system initialization parameter for the CICS region. For a JVM server that is defined in a CICS bundle, which uses a JVM profile packaged in the CICS bundle, this is the CICS bundle subdirectory where the JVM profile is stored.

## CEMT INQUIRE PROGRAM

The **CEMT INQUIRE PROGRAM** command has a new option **RESIDENCY**.

### **RESIDENCY**(*value*)

Displays the program's residency attributes:

#### **RESIDENT**

The program is permanently resident. It is defined as **RESIDENT**(YES).

#### **NONRESIDENT**

The program is defined as **RESIDENT**(NO).

## CEMT INQUIRE URIMAP

New options are added to the **CEMT INQUIRE URIMAP** command to return the details of the application entry point for the URIMAP resource, and of the resulting availability status of the URIMAP resource.

### **AVAILSTATUS**(*value*)

Displays the availability status of the URIMAP resource as an application entry point for an application deployed on a platform.

#### **AVAILABLE**

The URIMAP resource is declared as an application entry point, and the application entry point controls its availability and is available, so the URIMAP resource is available to callers.

#### **UNAVAILABLE**

The URIMAP resource is declared as an application entry point, but the application entry point that controls its availability is unavailable, so the URIMAP resource is not available to callers.

#### **NOTAPPLIC**

The URIMAP resource is available to callers. Either the URIMAP resource is not declared as an application entry point, or it is declared as an application entry point but the application entry point is disabled or does not control the availability of the URIMAP resource.

### **APPLICATION**(*data-value*)

Displays the application name of the application for which this URIMAP resource is declared as an application entry point. If the URIMAP resource is not declared as an application entry point, **APPLICATION** displays blanks.

### **APPLMAJORVER**(*data-value*)

Displays the major version number of the application. If the URIMAP resource is declared as an application entry point, the major version number of this application is returned. If the URIMAP resource is not declared as an application entry point, **APPLMAJORVER** returns -1.

### **APPLMINORVER**(*data-value*)

Displays the minor version number of the application. If the URIMAP resource is declared as an application entry point, the minor version number of this application is returned. If the URIMAP resource is not declared as an application entry point, **APPLMINORVER** returns -1.

#### **APPLMICROVER**(*data-value*)

Displays the micro version number of the application. If the URIMAP resource is declared as an application entry point, the micro version number of this application is returned. If the URIMAP resource is not declared as an application entry point, APPLMICROVER returns -1.

#### **OPERATION**(*data-value*)

Displays the operation name of the application for which this URIMAP resource is declared as an application entry point. If the URIMAP resource is not declared as an application entry point, OPERATION displays blanks.

#### **PLATFORM**(*data-value*)

Displays the platform name of the application for which this URIMAP resource is declared as an application entry point. If the URIMAP resource is not declared as an application entry point, PLATFORM displays blanks.

### **CEMT INQUIRE WEBSERVICE**

The STATE option of the **CEMT INQUIRE WEBSERVICE** command displays two new states, **DISABLING** and **DISABLED**, which apply only for web services that are packaged in CICS bundles.

#### **DISABLED**

This state is only available for WEBSERVICE resources that are defined in a CICS bundle. The web service has completed quiescing and is not accepting new work.

#### **DISABLING**

This state is only available for WEBSERVICE resources that are defined in a CICS bundle. The web service is quiescing. It is not accepting new work, but is allowing currently-executing work to complete. When the web service is no longer in use, the state of the WEBSERVICE resource changes to **DISABLED**.

### **CEMT PERFORM DUMP and CEMT PERFORM SNAP**

A new DUMPCODE parameter has been added to the **CEMT PERFORM DUMP** and **CEMT PERFORM SNAP** commands to specify a dump code for the dump request.

#### **DUMPCODE** (*data-value*)

Specifies a maximum 8-character dump code for this dump request. The value is a user defined code which can be any character string that does not contain leading or imbedded blank characters. If a dump code is not specified, CICS uses a default dump code of MT0001.

### **CEMT SET BUNDLE**

New **AVAILABLE** and **UNAVAILABLE** options on the **SET BUNDLE** command give or remove access to application entry points that are declared in the CICS bundle. For a CICS bundle that declares application entry points, you must first enable the bundle, then make it available, to give users access to the resources. For a CICS bundle that does not declare application entry points, you only need to enable the bundle.

#### **AVAILABLE**

Make one or more **BUNDLE** resources available. CICS gives callers access to the resources identified in the CICS bundle as application entry points.

#### **UNAVAILABLE**

Make one or more **BUNDLE** resources unavailable. CICS removes access to the

resources identified in the CICS bundle as application entry points, so callers cannot access any of the private resources in the CICS bundle.

## CEMT SET FILE

To disable a file that is defined in a CICS bundle, you must first disable the CICS bundle or the application with which it is deployed. If you are experiencing a problem with disabling a CICS bundle that defines a FILE resource, you can now issue the **CEMT SET FILE** command with the **FORCECLOSE** option against the dynamically generated resource, if this action is required. Follow the troubleshooting procedure in Diagnosing application errors to diagnose the problem and take suitable action.

## CEMT SET JVMSERVER

To disable a JVMSERVER resource that is defined in a CICS bundle, you must first disable the CICS bundle or the application with which it is deployed. If the disable process does not complete, because the resource is still in use, you can now use the **CEMT SET JVMSERVER PURGE**, **FORCEPURGE**, or **KILL** command on the dynamically generated resource in the CICS region.

## CEMT SET TCPIPService

To disable a TCPIPService resource that is defined in a CICS bundle, you must first disable the CICS bundle or the application with which it is deployed. If the disable process does not complete, because the resource is still in use, you can now use the **CEMT SET TCPIPService IMMCLOSE** command on the dynamically generated resource in the CICS region.

## Changed CEMT commands in CICS TS 5.1

These CEMT commands were changed in CICS Transaction Server for z/OS, Version 5 Release 1.

### CEMT INQUIRE BUNDLE

The **CEMT INQUIRE BUNDLE** command is changed to return bundle ID and version information.

#### **BUNDLEID**(*value*)

Displays the ID of the bundle, if specified in the bundle manifest.

#### **MAJORVERSION**(*value*)

Displays the major version number of the bundle. If no version is specified in the bundle, 0 is displayed.

#### **MICROVERSION**(*value*)

Displays the micro version number of the bundle. If no version is specified in the bundle, 0 is displayed.

#### **MINORVERSION**(*value*)

Displays the minor version number of the bundle. If no version is specified in the bundle, 0 is displayed.

### CEMT INQUIRE DSAS

The **CEMT INQUIRE DSAS** command is changed to return the following new values:

**ETDSASIZE(*value*)**

Displays the size, in bytes, of the extended trusted dynamic storage area (ETDSA) above 16 MB but below 2 GB (above the line). CICS calculates and manages the size of this storage area automatically, within the overall limits specified for all the DSAs that reside above the line.

**GCDSASIZE(*value*)**

Displays the size of the above-the-bar CICS dynamic storage area (GCDSA). The value is displayed in gigabytes followed by the letter G. CICS calculates and manages the size of this storage area automatically.

**GSDSASIZE(*value*)**

Displays the size of the above-the-bar shared dynamic storage area (GSDSA). The value is displayed in gigabytes followed by the letter G. CICS calculates and manages the size of this storage area automatically.

**GUDSASIZE(*value*)**

Displays the size of the above-the-bar user dynamic storage area (GUDSA). The value is displayed in gigabytes followed by the letter G. CICS calculates and manages the size of this storage area automatically.

**CEMT INQUIRE DISPATCHER**

The MAXOPENTCBS and MAXXPTCBS options on the **CEMT INQUIRE DISPATCHER** command are still available, but the values that they return now represent limits set automatically by CICS based on the maximum number of tasks specified for the CICS region.

**CEMT INQUIRE DSNAME**

The **CEMT INQUIRE DSNAME** command has a new option LOGREPSTATUS to support replication logging.

**LOGREPSTATUS (*cvda*)**

Returns a CVDA value that identifies whether the data set was defined with LOGREPLICATE. Valid values are as follows:

**LOGREPLICATE**

All updates to the data set are logged for replication.

**NOLOGREPLICA**

Updates to the data set are not logged for replication.

**NOTAPPLIC**

The data set has not been opened by the CICS region in which the command is issued, or the data set is BDAM .

**CEMT INQUIRE EVENTBINDING**

The **CEMT INQUIRE EVENTBINDING** command is changed to support two new options, EPADAPTERRES and EPADAPTERSET.

**EPADAPTERRES(*cvda*)**

Displays the type of the EP adapter resource.

**EPADAPTERSET(*data-area*)**

Displays the 32-character name of an EP adapter set. If this option is not blank, the option of EPADAPTER will be blank. Or vice versa.



## CEMT INQUIRE JVMSERVER

The **CEMT INQUIRE JVMSERVER** command is changed to support a new option, **PROFILEDIR**.

### **PROFILEDIR**(*directory*)

Displays the directory on z/OS UNIX that contains the JVM profile for the JVM server. For a JVM server that is defined in a local CICS region, which uses a JVM profile stored in the local CICS region, this is the directory specified by the **JVMPROFILEDIR** system initialization parameter for the CICS region. For a JVM server that is defined in a CICS bundle, which uses a JVM profile packaged in the CICS bundle, this is the CICS bundle subdirectory where the JVM profile is stored.

## CEMT INQUIRE PROGRAM

The following new attributes can be inquired upon:

### **APPLICATION**

Displays the name of the application for which this program is defined as an entry point. If the program is not defined as an application entry point, the field is blank.

### **APPLMAJORVER**

Displays the major version number of the application for which this program is defined as an entry point. If the program is not defined as an application entry point, the field is blank.

### **APPLMICROVER**

Displays the micro version number of the application for which this program is defined as an entry point. If the program is not defined as an application entry point, the field is blank.

### **APPLMINORVER**

Displays the minor version number of the application for which this program is defined as an entry point. If the program is not defined as an application entry point, the field is blank.

### **OPERATION**

Displays the name of the application operation for which this program is defined as an entry point. If the program is not defined as an application entry point, the field is blank.

### **PLATFORM**

Displays the platform name of the application for which this program is defined as an entry point. If the program is not defined as an application entry point, the field is blank.

## CEMT INQUIRE URIMAP

The **USAGE** option of the **CEMT INQUIRE URIMAP** command has a new **CVDA** value:

### **JVMSERVER**

The **URIMAP** resource is for a JVM server. It maps incoming requests for a Java web application to run under a CICS transaction that has appropriate security.



## CEMT SET PROGRAM

The **CEMT SET PROGRAM** command is changed to support a new **OPERATION** option. The new option specifies the name of the application operation for which the program is defined as an entry point.

## CEMT SET STATISTICS

The default value of the **INTERVAL** option of the **CEMT SET STATISTICS** command is decreased from 030000 (3 hours) to 010000 (1 hour).

### **INTERVAL** (*hhmmss*)

Specifies the length of time during which the statistics counters are incremented. At the end of each interval, the accumulated statistics are recorded and the statistics counters are reset.

## CEMT SET SYSTEM

The maximum value of the **MAXTASKS** option of the **CEMT SET SYSTEM** command is increased from 999 to 2000, and the minimum value is increased to 10.

### **MAXTASKS** (*value*)

Specifies the maximum number of tasks, both active and suspended, allowed at any one time in the CICS system. The value must be in the range 10 - 2000.

**Note:** The value assigned to **MAXTASKS** might be less than the requested value, because of CICS storage constraints. If this occurs, the message **CEILING REACHED** is displayed when the request is made.

## Changed CEMT commands in CICS TS 4.2

These CEMT commands were changed in CICS Transaction Server for z/OS, Version 4 Release 2.

## INQUIRE ATOMSERVICE

New options **URIMAP** and **XMLTRANSFORM** are added:

### **URIMAP**

Displays the 8-character **URIMAP** name that indicates the URI associated with this **ATOMSERVICE** definition. If there is no dynamically generated **URIMAP** associated with this **ATOMSERVICE** definition, this field is empty.

### **XMLTRANSFORM**

Displays the 32-character name of the **XMLTRANSFORM** resource associated with the **ATOMSERVICE** definition. If the value of **ATOMTYPE** is **SERVICE** or **CATEGORY**, this field is empty.

## INQUIRE EVENTBINDING

A new option **EPADAPTER** is added:

### **EPADAPTER**(*value*)

Displays the 32-character name of an EP adapter. If this option is not blank, the option of **EPADAPTERSET** will be blank. Or vice versa.

## INQUIRE EVENTPROCESS

A new option **SCHEMALEVEL** is added:

**SCHEMALEVEL (vvrr)**

Returns a 4-character value (*vvrr*) indicating the highest version and release of event binding schema that is supported by CICS, where *vv* is the version and *rr* is the release; for example, 0201 indicates version 2 release 1 of the event binding schema.

**INQUIRE IPCONN**

A new option MIRRORLIFE is added:

**MIRRORLIFE (value)**

Indicates the minimum lifetime of the mirror task for function-shipped file control, transient data, and temporary storage requests received by this region. This parameter only takes affect when it is specified on the IPCONN definition on the resource-owning region. It is not valid for function shipping interval control or link requests. The possible values are as follows:

**REQUEST**

The mirror task terminates as soon as possible.

**TASK** The mirror task remains available to the application that issues the remote request the until the application task ends.

**UOW** The mirror transaction remains available to the application that issues the remote request until the next sync point is issued.

**INQUIRE JVMSERVER**

New options are added to return statistics for the JVM server.

**CURRENTHEAP (number)**

Displays the current heap size in bytes that is allocated to the JVM server.

**GCPOLICY (value)**

Displays the garbage collection policy that is being used by the JVM server.

**INITHEAP (number)**

Displays the initial heap size in bytes that is allocated to the JVM server.

**MAXHEAP (number)**

Displays the maximum heap size in bytes that is allowed in the JVM server.

**OCCUPANCY (number)**

Displays the heap size in bytes after the last garbage collection ran in the JVM server.

**PID (number)**

Displays the process ID (PID) of the JVM.

**INQUIRE MQCONN**

A new value GROUPRESYNC is added to the RESYNCMEMBER option:

**GROUPRESYNC**

CICS connects to any member of the queue-sharing group. The queue manager is chosen by WebSphere MQ and it asks CICS to resolve indoubt units of work on behalf of all eligible queue managers in the queue-sharing group. This function is called *group unit of recovery*.

## INQUIRE PROGRAM

A new option JVMSERVER is added:

### JVMSERVER

Displays the name of the JVMSERVER resource that is used to run this OSGi service in a JVM server.

The CONCURRENCY option has a new value:

### OREQUIRED

The program is defined as threadsafe, and must run on an open TCB. The type of open TCB used depends on the API setting.

A value of CONCURRENCY(OREQUIRED) is equivalent to CONCURRENCY(REQUIRED) on the program definition. CEMT uses a value of OREQUIRED to distinguish it from a value of REQUIRED on the option COPYSTATUS. You can use the filter OREQUIRED to return all programs with the concurrency setting of REQUIRED.

## INQUIRE TCPIPService

A new option MAXPERSIST is added:

### MAXPERSIST(*value*)

Returns a fullword value that contains the maximum number of persistent connections from web clients that the CICS region allows for this port at any one time. This setting applies only for the HTTP protocol. NO means that there is no limit on the number of persistent connections. A zero setting means that no persistent connections are allowed. A zero setting is not compliant with the HTTP/1.1 specification and must not be set in a CICS region that is handling external requests.

## INQUIRE URIMAP

New options SOCKETCLOSE and SOCKPOOLSIZE are added:

### SOCKETCLOSE(*value*)

Displays the maximum length of time in seconds that CICS keeps a client HTTP connection open for reuse after the CICS application has finished using it. If the value is 0, CICS does not keep connections open for reuse. A value is only displayed when the URIMAP definition has a usage type of CLIENT. For other usage types, SOCKETCLOSE displays ().

### SOCKPOOLSIZE(*value*)

Displays the number of client HTTP connections that CICS is currently holding in a pool in a dormant state. The connections can be reused by any CICS application that connects as a Web client to the same host and port. A value is only displayed when the URIMAP definition has a usage type of CLIENT. For other usage types, SOCKPOOLSIZE displays ().

## INQUIRE WEBSERVICE

A new option ARCHIVEFILE is added:

### ARCHIVEFILE(*value*)

Displays the name and location (1-255 characters) of the archive that is associated with the web service. The archive contains one or more WSDL files. The name can be up to 255 characters long.

## SET MQCONN

A new value GROUPRESYNC is added to the RESYNCMEMBER option:

### GROUPRESYNC

CICS connects to any member of the queue-sharing group. The queue manager is chosen by WebSphere MQ and it asks CICS to resolve indoubt units of work on behalf of all eligible queue managers in the queue-sharing group. This function is called *group unit of recovery*. The GROUPRESYNC option can be used only you are when running a release of WebSphere MQ that supports group unit of recovery for CICS and when the GROUPUR attribute has been enabled in the WebSphere MQ queue managers.

When an attempt is made to connect CICS to WebSphere MQ by using an EXEC CICS SET MQCONN CONNECTED command and RESYNCMEMBER(GROUPRESYNC) is set but WebSphere MQ does not support group unit of recovery, or group unit of recovery is not enabled, then WebSphere MQ rejects the connection attempt. The connection attempt results in the SET command failing with INVREQ and RESP2=9 (connection error).

Do not change the settings for RESYNCMEMBER when units of work are outstanding in WebSphere MQ because the units of work cannot then be resolved. A unit of work held in CICS is identified with a resource manager qualifier. When RESYNCMEMBER(GROUPRESYNC) is used, the qualifier is the name of the queue-sharing group, otherwise the qualifier used is the name of the individual queue manager.

## Resource signature options added to CEMT INQUIRE command

### Changed command, INQUIRE

The definition and installation signature options are added to the **INQUIRE** command for the following resource types:

- ATOMSERVICE
- BUNDLE
- CONNECTION
- DB2CONN
- DB2ENTRY
- DB2TRAN
- DOCTEMPLATE
- ENQMODEL
- EPADAPTER
- EPADAPTERSET
- EVENTBINDING
- FILE
- IPCONN
- JOURNALMODEL
- JVMSERVER
- LIBRARY
- MQCONN
- MQINI
- OSGIBUNDLE

PIPELINE  
PROFILE  
PROCESSTYPE  
PROGRAM  
TCPIPSERVICE  
TDQUEUE  
TRANCLASS  
TRANSACTION  
TSMODEL  
URIMAP  
WEBSERVICE  
XMLTRANSFORM

The list of possible values for each resource type **CHANGEAGENT** and **INSTALLAGENT** can vary and depends on the how the resource is defined and installed. For details of a specific INQUIRE command, see *CICS Supplied Transactions*.

**CHANGEAGENT** (*value*)

Displays a value that identifies the agent that made the last change to the resource definition. You cannot use CEMT to filter on some of these values because they are duplicated. The possible values are as follows:

**AUTOINSTALL**

The resource was autoinstalled.

**AUTOINSTALL**

The resource was autoinstalled as a result of specifying an initiation queue name on a CKQC START command, and the previously installed MQCONN definition did not specify a value for INITQNAME.

**CREATESPI**

The resource definition was last changed by an **EXEC CICS CREATE** command.

**CSDAPI**

The resource definition was last changed by a CEDA transaction or the programmable interface to DFHEDAP.

**CSDBATCH**

The resource definition was last changed by a DFHCSDUP job.

**DREPAPI**

The resource definition was last changed by a CICSplex SM BAS API command.

**DYNAMIC**

The resource definition was last changed by a PIPELINE scan.

**DYNAMIC**

The resource was defined as a result of the installation of a DB2ENTRY with TRANSID specified.

**DYNAMIC**

The resource was defined by the CICS scanning mechanism.

**DYNAMIC**

The resource was defined by the CICS system for a template being used through the CICS template manager, DFHWBTL.

**DYNAMIC**

The resource was defined as a result of an MQCONN resource definition with INITQNAME specified.

**DYNAMIC**

The resource was defined by an ATOMSERVICE resource.

**SYSTEM**

The resource definition was last changed by the CICS or CICSplex system.

**TABLE**

The resource definition was last changed by a table definition.

**TABLE**

The resource definition was last changed by a File Control table definition.

**CHANGEAGREL**(*value*)

Displays the 4-digit number of the CICS release that was running when the resource definition was last changed.

**CHANGETIME**(*date time*)

Displays the date and time when the resource definition was last changed. The format of the date depends on the value that you selected for the DATFORM system initialization parameter for your CICS region. The format of the time is hh:mm:ss.

**CHANGEUSRID**(*value*)

Displays the 8-character user ID that ran the change agent.

**DEFINESOURCE**(*value*)

Displays the source of the resource definition. The DEFINESOURCE value depends on the CHANGEAGENT option. For details, see Summary of the resource signature field values in Product overview.

**DEFINETIME**(*date time*)

Displays the date and time when the resource was created. The format of the date depends on the value that you selected for the DATFORM system initialization parameter for your CICS region. The format of the time is hh:mm:ss.

**INSTALLAGENT**(*cvda*)

Displays a value that identifies the agent that installed the resource. You cannot use CEMT to filter on some of these values because they are duplicated. The possible values are as follows:

**AUTOINSTALL**

The resource was autoinstalled.

**AUTOINSTALL**

The resource was autoinstalled as a result of specifying an initiation queue name on a CKQC START command, and the previously installed MQCONN definition did not specify a value for INITQNAME.

**BUNDLE**

The resource was installed by a bundle deployment.

**CREATESPI**

The resource was installed by an **EXEC CICS CREATE** command.

**CSDAPI**

The resource was installed by a CEDA transaction or the programmable interface to DFHEDAP.

**DYNAMIC**

The resource was installed by using a PIPELINE scan.

**DYNAMIC**

The resource was installed as a result of the installation of a DB2ENTRY with TRANSID specified.

**DYNAMIC**

The resource was installed by the CICS scanning mechanism.

**DYNAMIC**

The resource was installed by the CICS system for a template being used through the CICS template manager, DFHWTBL.

**DYNAMIC**

The resource was installed as a result of the installation of an MQCONN with INITQNAME specified.

**DYNAMIC**

The resource was installed by an ATOMSERVICE resource.

**GRPLIST**

The resource was installed by **GRPLIST INSTALL**.

**MGMTPART**

The resource was installed by an application or platform deployment.

**SYSTEM**

The resource was installed by the CICS or CICSplex SM system.

**TABLE**

The resource was installed by using a table definition.

**TABLE**

The resource was installed by using a File Control table definition.

**INSTALLTIME**(*date time*)

Displays the date and time when the resource was installed. The format of the date depends on the value that you selected for the DATFORM system initialization parameter for your CICS region. The format of the time is hh:mm:ss.

**INSTALLUSRID**(*value*)

Displays the 8-character user ID that installed the resource.

## Changed CEMT commands in CICS TS 4.1

These CEMT commands were changed in CICS Transaction Server for z/OS, Version 4 Release 1.

### INQUIRE CORBASERVER

The HOST option now displays IPv6 addresses. The values HOSTNAME, IPV4HOST, IPV6HOST, and NOTAPPLIC filter the contents of the new HOST option. A new option, IPRESOLVED, displays the IPv4 or IPv6 address of the host. The values IPV4FAMILY, IPV6FAMILY, and UNKNOWN filter the contents of the new IPRESOLVED option.

**HOST(*value*)**

Displays the host name, IPv4, or IPv6 address of the logical EJB/CORBA server. All IPv4 addresses are displayed as native IPv4 dotted decimal addresses, for example, 1.2.3.4, regardless of the type of address format used. For information on accepted IPv4 formats, see IP addresses in Product overview.

**HOSTTYPE(*value*)**

Displays the address format of the HOST option. The HOSTTYPE option is available using an expanded query only. The possible values are as follows:

**HOSTNAME**

The HOST option contains a character host name.

**IPV4HOST**

The address is an IPv4 address.

**IPV6HOST**

The address is an IPv6 address.

**IPFAMILY(*value*)**

Displays the address format of the IPRESOLVED option. The IPFAMILY option is available using an expanded query only. Filtering interacts with the IPFAMILY option when you filter using wildcard characters. For example, if the value in IPFAMILY is IPV6FAMILY, you must use the colon character to retrieve an IP address. The possible values are as follows:

**IPV4FAMILY**

The address is an IPv4 address.

**IPV6FAMILY**

The address is an IPv6 address.

**UNKNOWN**

The IPRESOLVED option is not yet in use, or the address cannot be resolved.

**IPRESOLVED(*value*)**

Displays the IPv4 or IPv6 address of the host. The IPRESOLVED option is available using an expanded query only.

**INQUIRE DISPATCHER**

Two new options are added:

**ACTTHRDTCBS(*value*)**

Displays the number of T8 mode open TCBs that are currently allocated to tasks.

**MAXTHRDTCBS(*value*)**

Displays the maximum number of T8 mode open TCBs that can exist concurrently in the CICS region for all enabled and disabled JVMSERVER resources; that is, the total number of threads reserved for all the JVM servers in the region. The number of threads reserved for each JVM server is the THREADLIMIT value on the JVMSERVER resource, plus 1 (the TCB that is reserved for the JVM server). For more information about THREADLIMIT, see JVMSERVER attributes in Reference -> System definition. For more information about open TCBs, see Open TCB management in Improving performance.



## INQUIRE IPCONN

The HOST option now displays IPv6 addresses. The values HOSTNAME, IPV4HOST, IPV6HOST, and NOTAPPLIC filter the contents of the new HOST option. A new option, IPRESOLVED, displays the IPv4 or IPv6 address of the host. The values IPV4FAMILY, IPV6FAMILY, and UNKNOWN filter the contents of the new IPRESOLVED option. A new option, PARTNER, displays the product token of a partner system. A new option, IDPROP, displays whether the sender will include the distributed identity in attach requests over the IPIC connection.

### HOST(*value*)

Displays the host name, IPv4, or IPv6 address of the remote system. All IPv4 addresses are displayed as native IPv4 dotted decimal addresses, for example, 1.2.3.4, regardless of which type of address format is used. For information about accepted IPv4 formats, see IP addresses in Product overview.

### HOSTTYPE(*value*)

Displays the address format of the HOST option. The HOSTTYPE option is available using an expanded query only. The possible values are as follows:

#### HOSTNAME

The HOST option contains a host name.

#### IPV4HOST

The address is an IPv4 address.

#### IPV6HOST

The address is an IPv6 address.

### IDPROP(*value*)

Displays whether the sender includes the distributed identity in requests over the IPIC connection. The IDPROP option is meaningful only if a connection extends outside a sysplex and is used primarily to prevent distributed identities being transmitted between enterprises. If the connection is between systems in the same sysplex, the value returned by this option is ignored, and the connection operates as if IDPROP(OPTIONAL) is specified.

The possible values are as follows:

#### NOTALLOWED

A user ID associated with the sending transaction is sent for requests using this connection. NOTALLOWED is the default value.

#### OPTIONAL

A distributed identity is sent, if available. The user ID associated with the sending transaction is also sent.

#### REQUIRED

A distributed identity is required for requests using this connection. If REQUIRED is specified, the receiving system must support distributed identities. The user ID associated with the sending transaction is not sent.

### IPFAMILY(*value*)

Displays the address format of the IPRESOLVED option. The IPFAMILY option is available using an expanded query only. Filtering interacts with the IPFAMILY option when you filter using wildcard characters. For example, if the value in IPFAMILY is IPV6FAMILY, you must use the colon character to retrieve an IP address. The possible values are as follows:

#### IPV4FAMILY

The address is an IPv4 address.

## **IPV6FAMILY**

The address is an IPv6 address.

## **UNKNOWN**

IPRESOLVED is not yet in use, or the address cannot be resolved.

## **IPRESOLVED(*value*)**

Displays the IPv4 or IPv6 address of the host. The IPRESOLVED option is available using an expanded query only.

For HA IPCONNs that are acquired, the value will be that of the specific region in the HA cluster this IPCONN connected to.

## **PARTNER(*value*)**

Displays a 64-character string indicating the product token of the partner system. The field is blank when the connection is not acquired or if the partner system does not indicate a product type when the connection is established. For example, the partner system is IBM\_CICS\_Transaction\_Server/4.1.0(zOS) for a CICS TS 4.1 partner.

## **INQUIRE MONITOR**

The default setting for the COMPRESSST option has changed. Data compression is now the default option. A new option, DPLLIMIT, returns the maximum number of DPL requests allowed for transaction resource monitoring. A new option, IDNTYCLASS, specifies whether identity class monitoring is enabled.

## **COMPRESSST(*value*)**

Displays whether data compression is performed for monitoring records. The values are as follows:

### **COMPRESS**

Data compression is performed. The default is for monitoring records to be compressed.

### **NOCOMPRESS**

Data compression is not performed.

You can reset this value by overtyping it with a different value.

## **DPLLIMIT (*value*)**

Displays the maximum number of distributed program link requests for which transaction resource class monitoring data is being collected.

## **IDNTYCLASS(*value*)**

Displays whether the identity class of monitoring data is being collected. The values are as follows:

### **IDNTY**

Identity class monitoring data is being collected.

### **NOIDNTY**

Identity class monitoring data is not being collected.

## **INQUIRE SYSTEM**

A new option MQCONN is added:

## **MQCONN(*value*)**

Displays the name of the MQCONN resource definition that is currently installed for the CICS region. If no MQCONN resource definition is currently installed, the field is blank. Only one MQCONN resource definition can be

installed at a time in a CICS region. The MQCONN resource definition specifies the attributes of the connection between CICS and WebSphere MQ.

## INQUIRE TCIPSERVICE

A new option, HOST, displays the host name, IPv4, or IPv6 address of the remote system. This option is an alternative to IPADDRESS. The values HOSTNAME, ANY, DEFAULT, IPV4HOST, IPV6HOST, and NOTAPPLIC filter the contents of the IPADDRESS option and the new HOST option. A new option, IPRESOLVED, displays the IPv4 or IPv6 address of the host. The values IPV4FAMILY, IPV6FAMILY, and UNKNOWN filter the contents of the new IPRESOLVED option.

### HOST(*value*)

Displays the host name, IPv4, or IPv6 address of the remote system. All IPv4 addresses are displayed as IPv4 dotted decimal addresses, for example, 1.2.3.4, regardless of the type of address format used. For information about accepted IPv4 formats, see IP addresses in Product overview.

### HOSTTYPE(*value*)

Displays the address format of the HOST option. The HOSTTYPE option is available by using an expanded query only. The possible values are as follows:

#### HOSTNAME

The HOST option contains a character host name.

**ANY** The ANY option is specified for the HOST option.

#### DEFAULT

The DEFAULT option is specified for the HOST option.

#### IPV4HOST

The address is an IPv4 address.

#### IPV6HOST

The address is an IPv6 address.

### IPFAMILY(*value*)

Displays the address format of the IPRESOLVED option. The IPFAMILY option is available by using an expanded query only. Filtering interacts with the IPFAMILY option when you filter by using wildcard characters. For example, if the value in IPFAMILY is IPV6FAMILY, you must use the colon character to retrieve an IP address. The possible values are as follows:

#### IPV4FAMILY

The address is an IPv4 address.

#### IPV6FAMILY

The address is an IPv6 address.

#### UNKNOWN

The IPRESOLVED option is not yet in use, or the address cannot be resolved.

### IPRESOLVED(*value*)

Displays the IPv4 or IPv6 address of the host. The IPRESOLVED option is available by using an expanded query only.

## INQUIRE TERMINAL

The REMOTESYSTEM option now provides information about IP connections.

## INQUIRE TRANSACTION

The REMOTESYSTEM option now provides information about IP connections.

## INQUIRE URIMAP

A new option, AUTHENTICATE, displays information about whether the host specified in the USAGE(CLIENT) URIMAP resource requires authentication.

### AUTHENTICATE(*value*)

Displays whether to provide authentication information to a web services provider. The possible values are as follows:

#### BASICAUTH

The web services provider requires HTTP basic authentication. You can supply credentials to the web services requester (a user ID and password) to the global user exit, XWBAUTH, which, if enabled, sends the credentials to the web services provider.

#### NOAUTHENTIC

The web services provider does not require authentication.

A new option, ATOMSERVICE, displays the name of the ATOMSERVICE resource definition and the USAGE option has a new value, ATOM. The HOST option has been extended to display IPv6 addresses. The values HOSTNAME, IPV4HOST, IPV6HOST, and NOTAPPLIC filter the contents of the new HOST option. A new option, IPRESOLVED, displays the IPv4 or IPv6 address of the host. The values IPV4FAMILY, IPV6FAMILY, and UNKNOWN filter the contents of the new IPRESOLVED option. A new option, PORT, displays the numeric port number of the connection.

### ATOMSERVICE(*value*)

Displays the 1- to 8-character name of an ATOMSERVICE resource definition for an Atom feed. The ATOMSERVICE resource definition defines an Atom service, feed, collection, or category document, and identifies the Atom configuration file, CICS resource or application program, and XML binding that are used to supply the data for the feed.

### HOST(*value*)

Displays the host name, IPv4, or IPv6 address of the URL. All IPv4 addresses are displayed as native IPv4 dotted decimal addresses; for example, 1.2.3.4, regardless of the type of address format used. If you are using a URIMAP definition relating to CICS as an HTTP client, USAGE(CLIENT), and a native IPv4 address or host name is used, the address or host name and port number are displayed; for example, 1.2.3.4:80 or hostname.com:443. If you specify a hostname that is greater than 110 characters in length, port information is not displayed in the HOST option. Use the PORT option to view the port number.

### HOSTTYPE(*value*)

Displays the address format of the HOST option. The HOSTTYPE option is available using an expanded query only. The possible values are as follows:

#### HOSTNAME

The HOST option contains a character host name.

#### IPV4HOST

The address is an IPv4 address.

#### IPV6HOST

The address is an IPv6 address.

**IPFAMILY(*value*)**

Displays the address format of the IPRESOLVED option. The IPFAMILY option is available using an expanded query only. Filtering interacts with the IPFAMILY option when you filter using wildcard characters. For example, if the value in IPFAMILY is IPV6FAMILY, you must use the colon character to retrieve an IP address. The possible values are as follows:

**IPV4FAMILY**

The address is an IPv4 address.

**IPV6FAMILY**

The address is an IPv6 address.

**UNKNOWN**

The IPRESOLVED option is not yet in use, or the address cannot be resolved.

**IPRESOLVED(*value*)**

Displays the IPv4 or IPv6 address of the host. The IPRESOLVED option is available using an expanded query only. This option is for all types except USAGE(SERVER) and USAGE(JVMSEVER).

**PORT(*value*)**

Displays the numeric port number value used by USAGE(CLIENT) for the connection to the server, in the range 1 - 65535. The port number is also displayed in the HOST option if HOST contains a native IPv4 address or a host name. For USAGE(CLIENT), the PORT attribute always contains the port number that is being used for the communication, even if PORT(NO) is specified on the URIMAP at define time. For USAGE(ATOM), USAGE(SERVER), or USAGE(PIPELINE), the PORT option displays ().

**USAGE(*value*)**

Displays the usage for the URIMAP definition.

**ATOM**

The URIMAP resource is for an Atom feed. It is used for an incoming request for data that CICS makes available as an Atom feed.

**INQUIRE VTAM**

**Note:** VTAM is now the z/OS Communications Server.

A new option PSTYPE is added:

**PSTYPE(*value*)**

Displays the type of Communications Server persistent sessions support for the CICS region. The values are as follows:

**SNPS** Single-node persistent sessions. Communications Server sessions can be recovered after a CICS failure and restart.

**MNPS**

Multinode persistent sessions. Communications Server sessions can also be recovered after a Communications Server or z/OS failure in a sysplex.

**NOPS** Communications Server persistent sessions support is not used for this CICS region.

## SET MONITOR

New options DPLLIMIT, FILELIMIT, IDNTYCLASS, and TSQUEUELIMIT are added.

### **DPLLIMIT**(*value*)

The maximum number of distributed program link requests for which CICS performs transaction resource monitoring. The value specified must be in the range 0 - 64.

### **FILELIMIT**(*value*)

The maximum number of files for which CICS performs transaction resource monitoring. The value specified must be in the range 0 - 64.

### **IDNTY**

The identity class of monitoring data is to be collected.

### **NOIDNTY**

The identity class of monitoring data is not to be collected.

### **TSQUEUELIMIT**(*value*)

The maximum number of temporary storage queues for which CICS performs transaction resource monitoring. The value specified must be in the range 0 - 64.

---

## New CEMT commands

These CEMT commands support new CICS functions.

For detailed information on all the new and changed CEMT transactions and options, see the *CICS Supplied Transactions*.

### **New CEMT commands in CICS Transaction Server for z/OS, Version 5 Release 2**

No new CEMT commands were added in CICS Transaction Server for z/OS, Version 5 Release 2.

### **New CEMT commands in CICS Transaction Server for z/OS, Version 5 Release 1**

#### **PERFORM SSL REBUILD**

Refresh the SSL environment and the cache of certificates for the CICS region.

#### **INQUIRE EPADAPTERSET**

Retrieve information about an EP adapter set.

#### **SET EPADAPTERSET**

Enable or disable an EP adapter set.

### **New CEMT commands in CICS Transaction Server for z/OS, Version 4 Release 2**

#### **INQUIRE EPADAPTER**

Retrieve information about an EP adapter.

#### **INQUIRE TEMPSTORAGE**

Retrieve information about storage used by temporary storage queues in the CICS region.

**SET EPADAPTER**

Enable or disable an EP adapter.

**SET TEMPSTORAGE**

Set the amount of storage that is available to temporary storage queues in the CICS region.

**New CEMT commands in CICS Transaction Server for z/OS, Version 4 Release 1****DISCARD ATOMSERVICE**

Remove an ATOMSERVICE resource definition.

**DISCARD BUNDLE**

Remove a BUNDLE resource definition. Any resources that were dynamically created by the bundle are also discarded.

**DISCARD JVMSERVER**

Remove a JVMSERVER resource definition.

**DISCARD MQCONN**

Remove an MQCONN resource definition. If there is an implicit MQINI resource definition, it is also discarded.

**INQUIRE ATOMSERVICE**

Retrieve information about ATOMSERVICE resource definitions.

**INQUIRE BUNDLE**

Retrieve information about a BUNDLE resource.

**INQUIRE EVENTBINDING**

Retrieve information about an event binding.

**INQUIRE EVENTPROCESS**

Retrieve the status of event processing.

**INQUIRE JVMSERVER**

Retrieve information about the status of a JVM server.

**INQUIRE MQCONN**

Retrieve information about the connection between CICS and WebSphere MQ.

**INQUIRE MQINI**

Retrieve the name of the default initiation queue used for the connection between CICS and WebSphere MQ.

**INQUIRE XMLTRANSFORM**

Retrieve information about an installed XMLTRANSFORM resource.

**SET ATOMSERVICE**

Enable or disable an ATOMSERVICE resource.

**SET BUNDLE**

Enable or disable a BUNDLE resource.

**SET EVENTBINDING**

Enable or disable an EVENTBINDING resource.

**SET EVENTPROCESS**

Change the status of event processing in the CICS region.

**SET JVMSERVER**

Change the attributes of a JVM server.

**SET MQCONN**

Change information about the attributes of the connection between CICS and WebSphere MQ. You can also start and stop the connection.

**SET XMLTRANSFORM**

Change the validation status of an XMLTRANSFORM resource.



---

## Chapter 8. Changes to the CICS management client interface (CMCI)

The CICS management client interface (CMCI) supports additional CICSplex SM and CICS resources, and you can query the resources using external resource names.

The 256-byte limitation on the length of URIs passed across the CMCI is relaxed. The PATH component of the URI is still limited to 256 bytes, but the URI in total can now be up to 64 KB long.

### New CICSplex SM resources supported in CICS Transaction Server for z/OS, Version 5 Release 2

No new CICSplex SM resources were added in CICS Transaction Server for z/OS, Version 5 Release 2.

### New CICSplex SM resources supported in CICS Transaction Server for z/OS, Version 5 Release 1

The new supported resources, together with their external resource names for use in CMCI queries, are as follows:

CICSplex SM resource name	External resource name	Description
APPLCTN	CICSApplication	CICS application
APPLDEF	CICSApplicationDefinition	Definition of a CICS application resource
CRESEPAS	CICSTopologyEPAdapterSet	Event processing adapter set
EPADSET	CICSEPAadapterSet	CICS event processing adapter set
EPAINSET	CICSEPAadapterinSet	CICS event processing adapters in an event processing adapter set
PLATFORM	CICSPlatform	CICS platform
PLATDEF	CICSPlatformDefinition	Definition of a CICS platform resource
RULE	CICSRule	Policy rule information

### New CICSplex SM resources supported in CICS Transaction Server for z/OS, Version 4 Release 2

The new supported resources together with their external resource names for use in CMCI queries, are as follows:

CICSplex SM resource name	External resource name	Description
CMLPMLNK	CICSCMASToMASLink	CMAS to MAS link
CRESEVCS	CICSTopologyCaptureSpecification	Event Processing capture specification
CRESEPAD	CICSTopologyEPAdapter	Event processing adapter
CRESEVBD	CICSTopologyEventBinding	Event Binding in a CICS system
EPADAPT	CICSEPAadapter	CICS event processing adapter

<b>CICSplex SM resource name</b>	<b>External resource name</b>	<b>Description</b>
EVCSDATA	CICSCaptureSpecificationDataPredicate	CICS event capture specification data predicates
EVCSINFO	CICSCaptureSpecificationInformationSource	CICS event capture specification information sources
EVCSOPT	CICSCaptureSpecificationOptionPredicate	CICS event capture specification command option predicates
LNKSMSCG	CICSMonitorSpecificationsToSystemGroup	Monitor specifications to system group links
LNKSMSCS	CICSMonitorSpecificationsToSystem	Monitor specifications to CICS system links
MASHIST	CICSTaskHistoryCollection	CICS task history collection
MONDEF	CICSMonitorDefinition	Monitor definitions
MONGROUP	CICSMonitorGroup	Monitor groups
MONINGRP	CICSMonitorResourceInGroup	Monitor definitions in groups
MONINSPC	CICSMonitorGroupInSpecification	Monitor groups in monitor specifications
MONSPEC	CICSMonitorSpecification	Monitor specifications
OSGIBUND	CICSOSGIBundle	OSGi bundles
OSGISERV	CICSOSGIService	OSGi services
SYSARM	CICSSystemParameter	CICS system parameter
WLMAROUT	CICSWLMActiveRouter	CICS router region in an active workload

---

## Chapter 9. Changes to the CICS-supplied transactions

Some CICS-supplied transactions are new, or have changed to support new functions.

---

### Obsolete transactions

Some supplied transactions are obsolete and are no longer supplied with CICS.

*Table 1. List of obsolete transactions*

Transaction	Description
CIRP	Request processor transaction for CorbaServers
CIRR	Request receiver transaction for CorbaServers
CJGC	CICS JVM garbage collection transaction
CJPI	Started JVMs following a <b>PERFORM JVMPOOL</b> command
CREA	Generated REQUESTMODEL definitions dynamically or saved them in the CSD
CREC	Generated REQUESTMODEL definitions but could not update the CSD

---

### Changes to CETR

The CETR transaction has new options.

The CETR transaction now includes controls for setting the MP domain standard and special trace levels.

The CETR transaction now includes the TA domain keyword to provide support for the new CICS transition assistant search (CTAS) facility.

The Pooled JVMs Trace Options screen has been removed from the CETR transaction, as this function is obsolete.

---

### Changes to CKQC

When you use the CKQC transaction from the CICS-MQ adapter control panels or call it from the CICS command line or a CICS application, the default settings in the transaction are now taken from the MQCONN resource definition for the CICS region, rather than from an INITPARM system initialization parameter.

The default values supplied on the CICS-MQ adapter control panels for the queue manager name and initiation queue name are taken from the MQCONN resource definition and its implied MQINI resource definition.

When CICS is connected to WebSphere MQ, the field "QMgr name" in the Display Connection panel shows the name of the queue manager to which CICS is connected, or to which CICS is waiting to connect (if resynchronization is in progress). When CICS is not connected to WebSphere MQ, the field is blank. The new field "Mqname" in the Display Connection panel shows the name of the default WebSphere MQ queue-sharing group or queue manager for the connection,

which you specified using the MQNAME attribute in the MQCONN resource definition. The value for the Mqname field is displayed whether or not CICS is connected to WebSphere MQ.

You can issue the CKQC START command without specifying a queue manager name, and CICS connects to the queue manager or a member of the queue-sharing group that you have specified in the MQCONN resource definition. You can also specify the name of a queue-sharing group on the CKQC START command in place of the name of a single queue manager. If you specify the name of a queue manager or queue-sharing group on the CKQC START command, the name that you specify replaces the setting for MQNAME in the installed MQCONN resource definition.

The following table summarizes the operator actions that you can perform for the CICS-WebSphere MQ connection, and whether you can perform these actions using **EXEC CICS** and CEMT commands, the CKQC transaction, the CICS Explorer, or CICSplex SM.

*Table 2. Operator actions for CICS-WebSphere MQ connection*

Operator action	EXEC CICS, CEMT	CKQC	CICS Explorer or CICSplex SM
Start CICS-WebSphere MQ connection	Yes, using SET MQCONN, but you cannot specify the default initiation queue name	Yes	Yes
Stop CICS-WebSphere MQ connection	Yes, using SET MQCONN	Yes	Yes
Display connection status and settings	Yes, using INQUIRE MQCONN	Yes	Yes
Display connect and disconnect time	Yes, using CICS statistics commands	No	Yes
Display and reset detailed connection statistics including call types	Yes, using CICS statistics commands (resets all statistics)	Yes (resets CICS-WebSphere MQ connection statistics only)	No
Display tasks that are using the CICS-WebSphere MQ connection	Yes, but only the number of tasks, using INQUIRE MQCONN	Yes, full listing of tasks	No
Purge individual tasks that are using the CICS-WebSphere MQ connection	Yes, using SET TASK FORCEPURGE	No	No
Enable or disable CICS-WebSphere MQ API-crossing exit	No	Yes	No
Start instances of CKTI (CICS-WebSphere MQ trigger monitor or task initiator)	No	Yes	No

---

## Changes to CRTE

The routing transaction, CRTE, now supports transaction routing over an IPIC connection.

---

## Changes to CSFE

The CSFE terminal and system test transaction can now be used to check on the status of a previous debug request.

CSFE now allows the status of DEBUG parameters to be queried, so for example to report if the global trap is active, or whether storage violation checking is active.

This transaction is mainly intended to be used by system programmers and IBM field engineers.

---

## Changes to CEMN

The CEMN transaction has new and changed options.

The CEMN transaction now includes the new distributed program link resource limit and a new identity class field. The CEMN transaction has been split into a primary panel and a second options panel. Also, you can change the DPLLIMIT, FILELIMIT, and TSQUEUELIMIT values using the CEMN transaction.

---

## New transaction CEPH

CEPH, the HTTP EP adapter for event processing, was introduced in CICS Transaction Server for z/OS, Version 4 Release 2.

CEPH is defined in the supplied resource definition group DFHEP. It is defined with RESSEC(YES) and CMDSEC(YES). CEPH runs the CICS program DFHECEAH, the HTTP EP adapter for event processing program. You can use an alternative transaction to run DFHECEAH.

CEPH is a RACF Category 2 transaction.

---

## New transaction CEPQ

CEPQ, the WebSphere MQ EP adapter for event processing, was introduced in CICS Transaction Server for z/OS, Version 4 Release 1.

CEPQ is defined in the supplied resource definition group DFHEP. It is defined with RESSEC(YES) and CMDSEC(YES). CEPQ runs the CICS program DFHECEAM, the WebSphere MQ EP adapter program. You can use an alternative transaction that runs DFHECEAM.

CEPQ is a RACF Category 2 transaction.

---

## New transaction CEPS

CEPS, the start transaction adapter for event processing, was introduced in CICS Transaction Server for z/OS, Version 5 Release 1.

CEPS is defined in the supplied resource definition group DFHEP. It is defined with RESSEC(YES) and CMDSEC(YES). CEPS runs the CICS program DFHECEAS, the start transaction adapter program. You can use an alternative transaction that runs DFHECEAS.

CEPS is a RACF Category 2 transaction.

---

## New transaction CEPT

CEPT, the TSQ adapter for event processing transaction, was introduced in CICS Transaction Server for z/OS, Version 4 Release 1.

CEPT is defined in the supplied resource definition group DFHEP. It is defined with RESSEC(YES) and CMDSEC(YES). CEPT runs the CICS program DFHECEAT, the TSQ adapter for event processing program. You can use an alternative transaction that runs DFHECEAT.

CEPT is a RACF Category 2 transaction.

---

## New transaction CESL

CESL, the sign-on long transaction, was introduced in CICS Transaction Server for z/OS, Version 4 Release 2.

With CESL, you can sign on to CICS with a password phrase of 9 to 100 characters or a standard password of up to 8 characters. In other respects CESL operates in the same way as the CESN sign-on transaction.

CESL is a RACF Category 3 transaction.

---

## New transaction CFCR

CFCR was introduced in CICS Transaction Server for z/OS, Version 5 Release 2. CICS uses this transaction to disable files that are defined in CICS bundles.

CFCR, and the program DFHFERN that it runs, are defined in the new CICS-supplied resource definition group DFHFERN. When you perform the disable action on a CICS bundle that contains a definition for a FILE resource, CICS attaches CFCR to manage the disable process for the file.

CFCR is a RACF Category 1 transaction.

---

## New transaction CKBC

CKBC was introduced in CICS Transaction Server for z/OS, Version 5 Release 1. Specify CKBC, or your own transaction based on CKBC, to use channels and containers with the CICS-WebSphere MQ DPL Bridge.

CKBC runs program DFHMQB3. This program passes and receives data using the DFHMQBR\_CHANNEL channel and the DFHREQUEST and DFHRESPONSE containers.

To continue to pass and receive data using a COMMAREA, allow the transaction code to default to CKBP, or specify CKBP (or a transaction code modeled on CKBP), to run program DFHMQB0.

CKBC is a RACF category 2 transaction.

---

## New transaction **CJSA**

CJSA was introduced in CICS Transaction Server for z/OS, Version 5 Release 1 for JVM servers. It is the default transaction to start CICS tasks that run new threads in the JVM server for a Java application. You can override it using a URIMAP resource.

CJSA is defined in the CICS-supplied resource definition group DFHJAVA. The JVM server has a listener that runs as a long-running task. The listener runs the CJSA transaction to create CICS tasks when an application requests a new thread. These threads can use JCICS to access CICS services.

CJSA is a RACF category 2 transaction.

---

## New transaction **CWWU**

CWWU was introduced in CICS Transaction Server for z/OS, Version 4 Release 1 for the CICS management client interface. It calls the alias program DFHWBA to analyze CICS Web requests.

CWWU is defined in the CICS-supplied resource definition group DFHCURDI. The CICS management client interface uses CWWU instead of CWBA to run the CICS alias program DFHWBA, to distinguish CICS management client interface requests from other types of Web requests.

CWWU is a RACF Category 2 transaction.

---

## New transaction **CW2A**

CW2A, the default alias transaction for Atom feeds, was introduced in CICS Transaction Server for z/OS, Version 4 Release 1. It is used for processing with ATOMSERVICE resource definitions.

CW2A is defined in the new CICS-supplied resource definition group DFHWEB2. It is defined with RESSEC(YES) and CMDSEC(YES). CW2A runs the CICS program DFHW2A, the W2 domain alias program. You may use an alternative transaction that executes DFHW2A.

CW2A is a RACF Category 2 transaction.





---

## Chapter 10. Changes to global user exits and task-related user exits

CICS Transaction Server for z/OS, Version 5 Release 2 has changes to some existing global user exit programs and task-related user exit programs. Check your existing global user exit programs against the changes summarized here.

### Reassembling global user exit programs

The CICS global user exit programming interface is product-sensitive, and depends on the facilities that are set up in your CICS system. It is advisable to reassemble global user exit programs for each CICS release, because changes to CICS internals might affect structures used by the CICS global user exit programming interface, even if there are no changes to the externals of the programming interface.

In CICS TS for z/OS, Version 5.1, there were changes to the parameter list structure for functions on the KEDS gate. If you have global user exit programs that use the kernel domain XPI functions, which are the DFHKEDSX calls START\_PURGE\_PROTECTION and STOP\_PURGE\_PROTECTION, then you must reassemble those exit programs.

For other areas of the XPI, check the changes to externals that are summarized in this section, and modify your global user exit programs to allow for changes to relevant parameters. After you complete your program changes, reassemble the affected global user exit programs against the CICS Transaction Server for z/OS, Version 5 Release 2 libraries.

A global user exit or task-related user exit might be assembled using CICS libraries from one CICS release and make an XPI call on a system that runs a different CICS release. In this situation, whether or not control is successfully transferred from the exit to the correct CICS module to handle that XPI call depends on the combination of CICS releases, and whether the XPI call is a release-sensitive call. For the user exit to succeed, you must also check other factors, for example whether XPI parameters have changed between releases.

If a user exit fails, an error message is issued and the transaction that called the exit might abend.

The following table summarizes the effect of different CICS releases on user exits. Release-sensitive XPI calls are not available in releases before CICS TS 4.1.

*Table 3. User exits with different CICS releases*

CICS release of the libraries used to assemble the XPI call	Release-sensitive XPI call?	CICS system that the XPI call is made on	Result
CICS TS 5.2, CICS TS 5.1, CICS TS 4.2, or CICS TS 4.1	Yes	All currently supported CICS releases	Control transfers to the correct CICS module for the XPI call

Table 3. User exits with different CICS releases (continued)

CICS release of the libraries used to assemble the XPI call	Release-sensitive XPI call?	CICS system that the XPI call is made on	Result
CICS TS 5.2, CICS TS 5.1 or CICS TS 4.2	No	CICS TS 5.2, CICS TS 5.1 or CICS TS 4.2	Control transfers to the correct CICS module for the XPI call
CICS TS 5.2, CICS TS 5.1 or CICS TS 4.2	No	CICS TS 4.1, CICS TS 3.2, and CICS TS 3.1	Unpredictable result
CICS TS 4.1	No	CICS TS 5.2, CICS TS 5.1, CICS TS 4.2, or CICS TS 4.1	Control transfers to the correct CICS module for the XPI call
CICS TS 4.1	No	CICS TS 3.2 and CICS TS 3.1	Unpredictable result
CICS TS 3.2 or CICS TS 3.1	No	CICS TS 5.2, CICS TS 5.1, CICS TS 4.2, or CICS TS 4.1	Back level XPI call detected, and user exit fails
CICS TS 3.2	No	CICS TS 3.2	Control transfers to the correct CICS module for the XPI call
CICS TS 3.2	No	CICS TS 3.1	Unpredictable result
CICS TS 3.1	No	CICS TS 3.2 or CICS TS 3.1	Control transfers to the correct CICS module for the XPI call

## Changes to the DFHUEPAR standard parameter list

DFHUEPAR is a standard parameter list of TCB 2-character codes and symbolic values addressed by the global user exit task indicator field, UEPGIND. TCB modes are represented in DFHUEPAR as both a 2-character code and a symbolic value.

No changes were made to the DFHUEPAR standard parameter list in CICS Transaction Server for z/OS, Version 5 Release 2.

The following changes were made in earlier releases:

Table 4. TCB indicators changed in DFHUEPAR

Symbolic value	2-byte code	Change	Description
UEPTJ8	J8	Obsolete	The J8 open TCB, used for pooled JVMs in CICS key.
UEPTJ9	J9	Obsolete	The J9 open TCB, used for pooled JVMs in user key.

Table 4. TCB indicators changed in DFHUEPAR (continued)

Symbolic value	2-byte code	Change	Description
UEPTJM	JM	Obsolete	The JM TCB, used with the IBM SDK for z/OS for shared class cache management purposes.
UEPTTP	TP	Addition	A TP open TCB, used to own the Language Environment® enclave and THRD TCB pool for a JVM server.
UEPTT8	T8	Addition	A T8 open TCB, used by a JVM server to attach pthreads for system processing.

## Changes to global user exits

Some existing global user exits have new parameters, new values or return codes, or changes to how the exits are used.

### Resource management installation and discard exit: XRSINDI

The new **UEPAPCTXT** and **UEPAPPTK** parameters of the XRSINDI global user exit now supply the application context information for private resources for applications that are deployed on platforms.

#### UEPAPCTXT

For private resources for applications that are deployed on platforms, this parameter contains the address of a variable-length list, which corresponds to the list in UEPIDNAM, containing the application context information for the resource. The information is listed in the following order:

1. The private resource name, padded with spaces to 8 characters.
2. The platform name, padded with spaces to 64 characters.
3. The application name, padded with spaces to 64 characters.
4. The major version number for the application, which is a fullword binary value.
5. The minor version number for the application, which is a fullword binary value.
6. The micro version number for the application, which is a fullword binary value.

CICS supplies a DSECT named **DFHUEACD** which maps this information. For more information about **DFHUEACD**, see UEACD - User exit application context in Data Areas.

#### UEPAPPTK

Address of a variable-length list, containing an 8-character token representing the application instance to which this resource belongs. For public resources, this address is zero.

## Changed global user exits in CICS TS 5.1

These existing global user exits were extended or changed in CICS Transaction Server for z/OS, Version 5 Release 1.

## Choice of global work area storage location

You can now specify the GALLOCATION option on the ENABLE PROGRAM command to select 24-bit storage or 31-bit storage for the global work area for a global user exit program.

The normal maximum size for a global work area is 32 KB, although it is possible to obtain a larger global work area when you issue the ENABLE PROGRAM command from a program. If you require additional storage for use by an exit program, you can use the techniques demonstrated in the DFH\$PCPI sample program for global user exits. Remember that you can now also add the GALLOCATION option when you enable exit programs, and obtain the global work areas from 31-bit storage.

## Increase to UEPXSTOR storage

The LIFO storage that CICS provides for a global user exit program to use when calling the XPI is increased from 320 bytes to 1024 bytes. The global user exit program can access this storage using parameter UEPXSTOR of the DFHUEPAR parameter list.

## Backout exit programs enabled with TBEXITS system initialization parameter

The **TBEXITS** system initialization parameter enables specified global user exit programs as backout exit programs. The backout exit programs are used during emergency restart backout for user log record recovery and file control recovery. Before CICS TS for z/OS, Version 5.1, these global user exit programs were enabled with a global work area of 4 bytes in 24-bit storage (below the 16 MB line). In CICS TS for z/OS, Version 5.1, these global user exit programs are enabled with a global work area of 4 bytes in 31-bit storage (above 16 MB but below 2 GB).

You can use the **TBEXITS** system initialization parameter to specify programs to be invoked at the following global user exit points:

- User log record recovery program exits: XRCINIT and XRCINPT
- File control backout failure exit: XFCBFAIL
- File control backout exit: XFCBOUT
- File control backout override exit: XFCBOVER
- File control logical delete exit: XFCLDEL

## Program control program exit: XPCFTCH

The XPCFTCH exit is invoked before a program that is defined to CICS receives control, and can be used to modify the entry address used when linking to the program. This exit now indicates the addressing mode of the program that has been loaded. The information that is indicated by the UEPPCDS parameter now includes the following DFHPCUE fields:

### PCUE\_AMOD

The addressing mode of the program is AMODE(31). This field is provided for compatibility with existing exit programs.

### PCUE\_AMOD\_31

The addressing mode of the program is AMODE(31). Use this field in preference to PCUE\_AMOD.

## **PCUE\_AMOD\_64**

The addressing mode of the program is AMODE(64).

## **Resource management installation and discard exit: XRSINDI**

A new parameter is added to the XRSINDI global user exit to support the EPADAPTERSET resource and the EPADAPTERSET resource signature parameter.

## **UEIDEPAS**

An EPADAPTERSET resource.

The obsolete UEIDBEAN enterprise bean parameter is removed from the XRSINDI global user exit.

## **System recovery program exit: XSRAB**

Exit XSRAB is invoked when the system recovery program (DFHSRP) finds a match in the system recovery table (SRT) for an operating system abend code. The error data structure, SRP\_ERROR\_DATA, that is indicated by the UEPERROR parameter now includes the following SRP\_CICS\_ERROR\_DATA field:

### **SRP\_CICS\_PSW16**

16-character field that contains the 128-bit PSW

The UEPERROR parameter also includes the following SRP\_SYSTEM\_ERROR\_DATA field:

### **SRP\_SYSTEM\_PSW16**

16-character field that contains the 128-bit PSW

## **Transient data exits: XTDEREQ, XTDEREQC, XTDREQ, XTDIN, and XTDOUT**

The CICS transient data facility is now threadsafe, so CICS can process transient data requests on an open TCB. Transient data requests are also threadsafe when you function ship them to a remote region over an IPIC connection. To optimize TCB switching and gain the performance benefits of the open transaction environment, programs that run at XTDEREQ, XTDEREQC, XTDREQ, XTDIN, and XTDOUT must be coded to threadsafe standards and defined to CICS as threadsafe.

The XTDEREQ exit is invoked before CICS processes a transient data API request, and the XTDEREQC exit is invoked after processing a transient data API request. The XTDREQ exit intercepts a transient data request before request analysis. The XTDOUT and XTDIN exits are invoked before and after data is exchanged with QSAM or VSAM.

## **Changed global user exits in CICS TS 4.2**

These existing global user exits were extended or changed in CICS Transaction Server for z/OS, Version 4 Release 2.

## **File control domain exits: XFCFRIN and XFCFROUT**

The UEPTERM parameter is a zero value for file control requests that have been function shipped over an IPIC connection. To use IPIC connections for function shipping file control requests, ensure that XFCFRIN and XFCFROUT check that the UEPTERM parameter is a non-zero value before trying to use it as an address.

XFCFRIN and XFCFROUT must be coded to threadsafe standards and declared threadsafe to get the benefits of threadsafe remote file support using an IPIC connection.

### **Managing IPIC intersystem queues exit: XISQUE**

XISQUE controls the requests and commands that are queued on an IPIC connection. XISQUE must be coded to threadsafe standards and declared threadsafe to get the benefits of threadsafe distributed program link (DPL) support, and threadsafe function shipping file control and temporary storage support, using an IPIC connection.

### **Temporary storage exits domain exits: XTSQRIN, XTSQROUT, XTSP TIN, and XTSP TOUT**

The UEPTERM parameter is a zero value for temporary storage requests that have been function shipped over an IPIC connection. To use IPIC connections for temporary storage requests, ensure that XTSQRIN, XTSQROUT, XTSP TIN, and XTSP TOUT check that the UEPTERM parameter is a non-zero value before trying to use it as an address.

The CICS temporary storage facility is threadsafe, so CICS can process temporary storage requests on an open TCB. Temporary storage requests are also threadsafe when you function ship them to a remote region over an IPIC connection. To optimize TCB switching and gain the performance benefits of the open transaction environment, programs that run at XTSQRIN, XTSQROUT, XTSP TIN, and XTSP TOUT must be coded to threadsafe standards and defined to CICS as threadsafe.

### **HTTP client authorization and send exits: XWBAUTH and XWBSNDO**

XWBAUTH and XWBSNDO now support the HTTP EP adapter. If your target system requires basic authentication or security policies when using the HTTP EP adapter, you must implement XWBSNDO and XWBAUTH user exits to provide the required credentials.

## **Changed global user exits in CICS TS 4.1**

These existing global user exits were extended or changed in CICS Transaction Server for z/OS, Version 4 Release 1.

### **Global user exits, XPCTA, XPCABND, and XPCHAIR**

The transaction abend control block, TACB, now includes the breaking event address register information, BEAR. The XPCTA, XPCABND, and XPCHAIR global user exits are passed a pointer to the TACB parameter. These exits have to be reassembled only if the new information is to be processed by the exit or the ABNDMSGT field is not referenced by its address in field ABNDAMSG.

The TACB also includes additional GP and FP register information. Again, these exits have to be reassembled only if the new information is to be processed by the exit or the ABNDMSGT field is not referenced by its address in field ABNDAMSG.

## Changed global user exit, XSRAB

New fields in the system recovery program exit, XSRAB, support the extended z/Architecture® MVS linkage support.

### SRP\_ADDITIONAL\_REG\_INFO

An area that contains additional register information.

### SRP\_ADDITIONAL\_REGS\_FLAG

1 byte that contains flags:

#### SRP\_CICS\_GPR64\_AVAIL

The 64-bit CICS GP registers are available.

#### SRP\_SYSTEM\_GPR64\_AVAIL

The 64-bit system GP registers are available.

#### SRP\_ADDITIONAL\_FPR\_AVAIL

Additional FP registers are available.

### SRP\_CICS\_GP64\_REGS

128-byte area that contains the CICS 64-bit GP registers at the time of the abend.

### SRP\_SYSTEM\_GP64\_REGS

128-byte area that contains the system 64-bit GP registers at the time of the abend.

### SRP\_FP\_REGS

128-byte area that contains all the FP registers at the time of the abend.

### SRP\_FPC\_REG

4-byte field that contains the FPC register at the time of the abend.

## HTTP client open and send exits: XWBAUTH, XWBOPEN, and XWBSNDO

XWBAUTH, XWBOPEN, and XWBSNDO now support IPv6 addressing. You must ensure that any programs that use these global user exits can process IPv6 addresses that are passed in the UEPHOST parameter.

---

## New global user exit points

New global user exit points help you customize new or existing CICS functions.

### New global user exit points added in CICS Transaction Server for z/OS, Version 5 Release 2

No new global user exit points were added in this release.

### New global user exit points added in CICS Transaction Server for z/OS, Version 5 Release 1

No new global user exit points were added in this release.

### New global user exit points added in CICS Transaction Server for z/OS, Version 4 Release 2

Event capture exit XEPCAP



The XEPCAP exit is invoked just before an event is captured by CICS event processing. Use the XEPCAP exit to detect when events are captured.

## **New global user exit points added in CICS Transaction Server for z/OS, Version 4 Release 1**

### **File control RLS coexistence program exit XFCRLSCO**

The XFCRLSCO exit can be called during a request to open a file. Use this exit to allow an application to switch the mode between RLS and read-only non-RLS to access a particular data set.

### **Intersystem communication program exit XISQLCL**

You can use the XISQLCL exit for EXEC CICS START NOCHECK commands that are scheduled for an IPIC connection.

You use the XISQLCL sample global user exit program DFHEXISL to control the queueing of START NOCHECK requests that are scheduled for an IPIC connection.

### **Pipeline processing exit XWSPRROI**

Use the XWSPRROI exit to access containers on the current channel before the containers are processed by a Web services provider application, but after any instance of the XWSPRRWI exit is invoked.

### **Pipeline processing exit XWSPRRWI**

Use the XWSPRRWI exit to access containers on the current channel that are to be processed by the Web services provider application, after CICS has converted the Web services request body into a language structure and before any instance of the XWSPRROI exit is invoked.

### **Pipeline processing exit XWSPRRWO**

Use the XWSPRRWO exit to access containers on the current channel that have been processed by a Web services provider application after any instance of the XWSPRROI exit.

### **Pipeline processing exit XWSRQROI**

Use the XWSRQROI exit to access containers on the current channel after they are processed by the transport as a Web services response. The XWSRQROI exit is invoked directly after CICS has processed the outbound Web service provider. It can also be invoked before any instance of the XWSRQRWI exit.

### **Pipeline processing exit XWSRQROO**

Use the XWSRQROO exit to access containers on the current channel before they are passed to the transport to be processed. This exit runs after any instance of the XWSRQRWO exit is processed and before the data flowing outbound on the Web services transport.

### **Pipeline processing exit XWSRQRWI**

Use the XWSRQRWI exit to access containers on the current channel after they have been processed by the transport as a Web services response. The XWSRQRWI exit is invoked directly after CICS has processed the inbound Web service response. It is also invoked after any instance of the XWSRQROI exit.

### **Pipeline processing exit XWSRQRWO**

Use the XWSRQRWO exit to access containers on the current channel before they are passed to the transport to be processed. This exit runs after



CICS has converted the application's language structure into a Web services request body and before CICS processes the optional XWSRQROO exit point.

**Pipeline processing exit XWSRQROI**

Use the XWSRQROI exit to access containers on the current channel, with CICS acting as a secured Web services requester, after they are processed by the transport as a Web services response. This exit runs after CICS processes the Web service response and before any instance of the XWSSRRWI exit.

**Pipeline processing exit XWSSRROO**

Use the XWSSRROO exit to access containers on the current channel, with CICS acting as a secured Web services requester, before they are passed to the transport to be processed. This exit runs after any instance of the XWSSRRWO exit is processed and before the encryption of data flowing outbound on the Web services transport.

**Pipeline processing exit XWSSRRWI**

Use the XWSSRRWI exit to access containers on the current channel, with CICS acting as a secured Web services requester, after they have been processed by the transport as a Web services response. This exit runs after CICS processes the Web service response and after any instance of the XWSSRROI exit.

**Pipeline processing exit XWSSRRWO**

Use the XWSSRRWO exit to access containers on the current channel, with CICS acting as a secured Web services requester, before they are passed to the transport to be processed. This exit runs after CICS converts the application's language structure into a Web services request body and before CICS processes the optional XWSSRROO exit point, and before being encrypted by the pipeline's security handler.

---

## Changes to task-related user exits

Task-related user exit programs may be invoked and used in new ways in new CICS releases.

In CICS Transaction Server for z/OS, Version 5 Release 2 there were no changes to task-related user exits.

The following changes were made in earlier releases:

### Choice of global work area storage location

You can now specify the GALLOCATION option on the ENABLE PROGRAM command to select 24-bit storage or 31-bit storage for the global work area for a task-related user exit program.

A task-related user exit can have both a global work area and a local work area. The GALLOCATION option does not apply to the local work area, which you create using the TALENGTH option on the ENABLE PROGRAM command. CICS already creates the local work area in 31-bit storage if the task-related user exit program is enabled with the LINKEDITMODE option on the ENABLE PROGRAM command and the task-related user exit program is link-edited AMODE(31). If you do not specify the LINKEDITMODE option, or if the task-related user exit program is link-edited AMODE(24), the local work area is located in 24-bit storage.

## Tracking information for programs called from CICS context management

Extra parameters are added to the context-related parameter list that is passed when a task-related user exit program is called from CICS context management. The new parameters allow third party adapters to provide information on the origin of, and reason for, the transaction they are starting.

At the attach of the transaction started by the non-terminal EXEC CICS START command, if an adapter ID is provided by the task-related user exit, the adapter data is placed into the adapter fields in the origin data, providing a way of tracking work initiated by the adapter.

For information about the context-related parameter list for task-related user exit programs, see the *CICS Customization Guide*.

For information about origin data, see the *CICS Intercommunication Guide*.

## New options for ENABLE PROGRAM and INQUIRE EXITPROGRAM

A new option, **REQUIRED**, is added to the **ENABLE PROGRAM** command. You can use this option to specify that a task-related user exit will run on an open TCB. If **OPENAPI** is specified, an L8 TCB will be used. If **OPENAPI** is not specified, any eligible key-8 open TCB can be used: L8, T8, or X8.

The **CONCURRENTST** option of the **INQUIRE EXITPROGRAM** command now returns a new CVDA, **REQUIRED**, to indicate that the task-related user exit will always run on an open TCB. When a task-related user exit is enabled **REQUIRED** and **OPENAPI**, it is treated the same as if it were enabled **THREADSAFE** and **OPENAPI**. For compatibility, an **INQUIRE EXITPROGRAM** for either combination will always return **THREADSAFE**, **OPENAPI**. For a task-related user exit enabled **REQUIRED** and **CICSAPI**, **INQUIRE EXITPROGRAM** will return **REQUIRED**, **CICSAPI**.

During the life of the task, the type of TCB can change. This is called a `switch_application_environment` event. A task-related user exit can express an interest in a `switch_application_environment` event that happens during the lifetime of a task, so that it can remove any affinity it has to the open TCB currently being used. This is relevant to TRUEs that are enabled as **REQUIRED**, **CICSAPI**, which means they can be called on an X8, L8, or T8 TCB.

For more information, see **ENABLE PROGRAM** command in Reference > System programming and **INQUIRE EXITPROGRAM** in Reference > System programming.

---

## Chapter 11. Changes to the exit programming interface

CICS Transaction Server for z/OS, Version 5 Release 2 has changes to some existing programming interface. Check your existing global user exit programs against the changes summarized here.

### Reassembling global user exit programs

The CICS global user exit programming interface is product-sensitive, and depends on the facilities that are set up in your CICS system. It is advisable to reassemble global user exit programs for each CICS release, because changes to CICS internals might affect structures used by the CICS global user exit programming interface, even if there are no changes to the externals of the programming interface.

In CICS TS for z/OS, Version 5.1, there were changes to the parameter list structure for functions on the KEDS gate. If you have global user exit programs that use the kernel domain XPI functions, which are the DFHKEDSX calls START\_PURGE\_PROTECTION and STOP\_PURGE\_PROTECTION, then you must reassemble those exit programs.

For other areas of the XPI, check the changes to externals that are summarized in this section, and modify your global user exit programs to allow for changes to relevant parameters. After you complete your program changes, reassemble the affected global user exit programs against the CICS Transaction Server for z/OS, Version 5 Release 2 libraries.

A global user exit or task-related user exit might be assembled using CICS libraries from one CICS release and make an XPI call on a system that runs a different CICS release. In this situation, whether or not control is successfully transferred from the exit to the correct CICS module to handle that XPI call depends on the combination of CICS releases, and whether the XPI call is a release-sensitive call. For the user exit to succeed, you must also check other factors, for example whether XPI parameters have changed between releases.

If a user exit fails, an error message is issued and the transaction that called the exit might abend.

The following table summarizes the effect of different CICS releases on user exits. Release-sensitive XPI calls are not available in releases before CICS TS 4.1.

*Table 5. User exits with different CICS releases*

CICS release of the libraries used to assemble the XPI call	Release-sensitive XPI call?	CICS system that the XPI call is made on	Result
CICS TS 5.2, CICS TS 5.1, CICS TS 4.2, or CICS TS 4.1	Yes	All currently supported CICS releases	Control transfers to the correct CICS module for the XPI call

Table 5. User exits with different CICS releases (continued)

CICS release of the libraries used to assemble the XPI call	Release-sensitive XPI call?	CICS system that the XPI call is made on	Result
CICS TS 5.2, CICS TS 5.1 or CICS TS 4.2	No	CICS TS 5.2, CICS TS 5.1 or CICS TS 4.2	Control transfers to the correct CICS module for the XPI call
CICS TS 5.2, CICS TS 5.1 or CICS TS 4.2	No	CICS TS 4.1, CICS TS 3.2, and CICS TS 3.1	Unpredictable result
CICS TS 4.1	No	CICS TS 5.2, CICS TS 5.1, CICS TS 4.2, or CICS TS 4.1	Control transfers to the correct CICS module for the XPI call
CICS TS 4.1	No	CICS TS 3.2 and CICS TS 3.1	Unpredictable result
CICS TS 3.2 or CICS TS 3.1	No	CICS TS 5.2, CICS TS 5.1, CICS TS 4.2, or CICS TS 4.1	Back level XPI call detected, and user exit fails
CICS TS 3.2	No	CICS TS 3.2	Control transfers to the correct CICS module for the XPI call
CICS TS 3.2	No	CICS TS 3.1	Unpredictable result
CICS TS 3.1	No	CICS TS 3.2 or CICS TS 3.1	Control transfers to the correct CICS module for the XPI call

## Changes to the exit programming interface (XPI)

Changes to the exit programming interface (XPI) mean that you might need to change global user exit programs that contain XPI calls. Check whether your global user exit programs are affected by these changes to the XPI, and modify your programs accordingly.

### Changes to the loader XPI, DFHLDLDX

In the loader functions of the XPI, the size of the tokens that are used for the PROGRAM\_TOKEN and NEW\_PROGRAM\_TOKEN options has increased from 4 bytes to 8 bytes. The DFHLDLDX calls affected by this change are ACQUIRE\_PROGRAM, DEFINE\_PROGRAM, and RELEASE\_PROGRAM. If you have used the PROGRAM\_TOKEN or NEW\_PROGRAM\_TOKEN options on these calls in an existing exit program, you must change your exit program to specify suitable locations to contain the larger tokens, and recompile the exit program. Exit programs that do not use the PROGRAM\_TOKEN option or NEW\_PROGRAM\_TOKEN option are not affected.

## Changed ACQUIRE\_PROGRAM call

The size of the token that you specify on the PROGRAM\_TOKEN option of the ACQUIRE\_PROGRAM call has increased from 4 bytes to 8 bytes. The size of the token returned by the NEW\_PROGRAM\_TOKEN option has also increased from 4 bytes to 8 bytes. If you have used either of these options in an existing exit program, you must change your exit program to specify suitable locations to contain the larger tokens, and recompile the exit program.

For details, see The ACQUIRE\_PROGRAM call in Reference -> System programming reference.

## Changed DEFINE\_PROGRAM call

You can use the REQUIRED\_AMODE option of the DEFINE\_PROGRAM call to specify the addressing mode of non-Language Environment (LE) AMODE(64) assembler programs.

Also, the size of the token returned by the NEW\_PROGRAM\_TOKEN option of the DEFINE\_PROGRAM call has increased from 4 bytes to 8 bytes. If you have used this option in an existing exit program, you must change your exit program to specify a suitable location to contain the larger token, and recompile the exit program.

For details, see The DEFINE\_PROGRAM call in Reference -> System programming reference.

## Changed GET\_NEXT\_PROGRAM call

The SPECIFIED\_AMODE option of the GET\_NEXT\_PROGRAM call now returns the addressing mode of non-Language Environment (LE) AMODE(64) assembler programs.

For details, see The GET\_NEXT\_PROGRAM call in Reference -> System programming reference.

## Changed INQUIRE\_APP\_CONTEXT call

The INQ\_APP\_CONTEXT call now returns the current application context for the most recent application that has been set onto the task.

For details, see The INQUIRE\_APP\_CONTEXT call in Reference -> System programming reference and Application context in Product overview.

## Changed INQ\_APPLICATION\_DATA call

The DSA option of the INQ\_APPLICATION\_DATA call now returns the address of the head of the dynamic storage chain as a 64-bit address.

For details, see The INQ\_APPLICATION\_DATA call in Reference -> System programming reference.

## **Changed INQUIRE\_CURRENT\_PROGRAM call**

The CURRENT\_AMODE option of the INQUIRE\_CURRENT\_PROGRAM call now returns the addressing mode of non-Language Environment (LE) AMODE(64) assembler programs.

For details, see The INQUIRE\_CURRENT\_PROGRAM call in Reference -> System programming reference.

## **Changed INQUIRE\_PROGRAM call - AMODE(64) assembler programs**

The SPECIFIED\_AMODE option of the INQUIRE\_PROGRAM call now returns the addressing mode of non-Language Environment (LE) AMODE(64) assembler programs.

For details, see The INQUIRE\_PROGRAM call in Reference -> System programming reference.

## **Changed INQUIRE\_PROGRAM and START\_BROWSE\_PROGRAM calls - application context**

You can use new options on the INQUIRE\_PROGRAM and START\_BROWSE\_PROGRAM calls to inquire on private programs for applications deployed on platforms. To inquire on private programs for applications deployed on platforms, you must specify the AC\_APPLICATION\_NAME, AC\_MAJOR\_VERSION, AC\_MINOR\_VERSION, AC\_MICRO\_VERSION, and AC\_PLATFORM\_NAME fields to provide a complete application context. The SHOW\_PROGRAMS option specifies whether to search for private programs only, or both private and public programs.

For details, see The INQUIRE\_PROGRAM call in Reference -> System programming reference.

## **Changed RELEASE\_PROGRAM call**

The size of the token that you specify on the PROGRAM\_TOKEN option of the RELEASE\_PROGRAM call has increased from 4 bytes to 8 bytes. If you have used this option in an existing exit program, you must change your exit program to specify a suitable location to contain the larger token, and recompile the exit program.

For details, see The RELEASE\_\_PROGRAM call in Reference -> System programming reference.

## **Changed SET\_PROGRAM call**

You can use the REQUIRED\_AMODE option of the INQUIRE\_PROGRAM call to specify the addressing mode of non-Language Environment (LE) AMODE(64) assembler programs.

For details, see The SET\_PROGRAM call in Reference -> System programming reference.

## Changed DFHNQEDX call

A new ENQUEUE\_TYPE option has been added to the ENQUEUE function.

### **ENQUEUE\_TYPE (XPI | EXECSTRN | EXECADDR)**

Specifies the type of resource being enqueued upon. XPI specifies the traditional DFHNQEDX behavior (the resource pool used is exclusive to XPI and cannot be accessed by the CICS API). Use EXECSTRN or EXECADDR to indicate that ENQUEUE\_NAME1 specifies an enqueue resource, located in the same namespace, as the one being used by EXEC CICS ENQ. For more information about EXECSTRN and EXECADDR, see EXEC CICS ENQ waits in Troubleshooting.

A new ENQUEUE\_TYPE option has been added to the DEQUEUE function.

### **ENQUEUE\_TYPE (XPI | EXECSTRN | EXECADDR)**

For details of the function, see The DEQUEUE function in Reference -> System programming reference.

---

## New exit programming interface (XPI) calls

CICS provides XPI calls that you can use in exit programs to retrieve information about functions in CICS.

In CICS Transaction Server for z/OS, Version 5 Release 2 there were no changes to XPI calls.

The following changes were made in earlier releases:

### **New INQUIRE\_ACTIVATION call**

The new INQUIRE\_ACTIVATION function is provided on the DFHABR macro call. You can use the INQUIRE\_ACTIVATION call to obtain the activity name and the process type for the business transaction activity of the current transaction.

For details of the XPI function, see The INQUIRE\_ACTIVATION call in Reference -> System programming reference.

### **New INQUIRE\_APP\_CONTEXT call**

The new INQUIRE\_APP\_CONTEXT call is provided on the DFHMNM macro call to retrieve application context data for a task.

For details of the XPI function, see The INQUIRE\_APP\_CONTEXT call in Reference -> System programming reference.

### **New RELENSCALL call**

By replacing the CALL XPI parameter with the RELENSCALL XPI parameter, a XPI call assembled using the CICS TS 4.1 libraries will execute successfully on all currently supported CICS releases. The release sensitive XPI call alternative applies to all XPI commands.

For details of the XPI function, see Release sensitive XPI call in Developing system programs.





---

## Chapter 12. Changes to user-replaceable programs

Reassemble all user-replaceable programs, checking whether any changes to the user-replaceable program interface affect your own customized programs.

For each CICS release, you must reassemble all user-replaceable programs, whether or not you make any changes to them. Before reassembling the programs, check whether these changes to the user-replaceable program interface affect your own customized programs, and make any necessary changes.

For example, there might be changes to the parameters passed to the programs or there might be new actions that the programs need to take. To help you to identify any code changes that are required, compare your customized programs with the sample code in the user-replaceable sample programs provided with this CICS release.

See Customizing with user-replaceable programs in the *CICS Customization Guide* for programming information about user-replaceable programs.

### AMODE(24) shutdown programs and CEMT

In CICS TS Version 5.1, the storage location was changed for the CICS-supplied transaction CEMT. The TRANSACTION resource definition for CEMT was changed to specify TASKDATALOC(ANY) instead of TASKDATALOC(BELOW). The CEMT transaction therefore uses virtual storage above the 16 MB line. If you use CEMT to shut down CICS and have PLTSD programs that are AMODE(24), an AEZC abend will occur. To avoid this situation, modify the shutdown program so that it is AMODE(31) and update the appropriate program definition.

---

## Obsolete user-replaceable programs

These user-replaceable programs are no longer used in CICS Transaction Server for z/OS, Version 5 Release 2.

No user-replaceable programs were made obsolete in CICS Transaction Server for z/OS, Version 5 Release 2.

The following changes were made in earlier releases:

*Table 6. Obsolete user-replaceable programs*

Module	Explanation
DFHEJDNX	The distinguished name user-replaceable program is obsolete because EJB support is removed.
DFHEJEP	The EJB event program is obsolete because EJB support is removed.
DFHJVMAT	The program to override JVM profile options is obsolete because support for pooled JVMs is removed.
DFHJVMRO	The program to modify the enclave for pooled JVMs is obsolete because support for pooled JVMs is removed.
DFHXOPUS	The IIOP security exit program is obsolete because IIOP cannot be specified on a TCPIPSERVICE resource.

---

## Changed user-replaceable programs

Check whether the changes listed for this release to the user-replaceable program interface affect your own customized programs, and make any necessary changes. For example, the parameters passed to the programs might be changed, or the programs might need to take new actions. To help you to identify any code changes that are required, compare your customized programs with the sample code in the user-replaceable sample programs provided with this CICS release.

### Analyzer program for CICS Web support

New fields, **wbra\_client\_ipv6\_address** and **wbra\_server\_ipv6\_address**, handle IPv6 addressing. User replaceable modules will behave as before with all IPv4 connections and you do not need to recompile existing modules unless they use the new parameters. If you introduce an IPv6 connection, the **wbra\_client\_ip\_address** and **wbra\_server\_ip\_address** fields are populated with zeros.

### Converter program for CICS Web support

New fields, **decode\_client\_ipv6\_address** and **decode\_client\_ipv6\_address\_string**, handle IPv6 addressing. User replaceable modules will behave as before with all IPv4 connections and you do not need to recompile existing modules unless they use the new parameters. If you introduce an IPv6 connection, the **decode\_client\_address** and **decode\_client\_address\_string** fields are populated with zeros.

### Custom EP adapters

Your custom adapter programs must now honor the **EPAP\_RECOVER** flag in the **DFHEP.ADAPTPARM** container to support synchronous event emission. You must review your custom EP adapter programs and update as necessary.

If the field **EPCX\_PROGRAM** in the **DFHEP.CONTEXT** container is used by your custom EP adapter you must review and change your programs as required, because the field is not set for system events.

### DFHDSRP, distributed routing program: DFHDYPDS copybook

There are changes to the copybook **DFHDYPDS** that defines the communication area for the CICS-supplied sample distributed routing program **DFHDSRP**.

The following changes were introduced in CICS TS 5.2:

- The following **DFHDYPDS** tokens are new:

**DYRCLOUD**

Cloud Routing Data.

**DYRPLATFORM**

Platform name.

**DYRAPPLICATION**

Application name.

**DYRAPPLVER**

Application version.

**DYRAPPLMAJOR**

Application major version.

**DYRAPPLMINOR**

Application minor version.

**DYRAPPLMICRO**

Application micro version.

**DYROPERATION**

Operation name.

- The DYRVER token is incremented by 1 to indicate that this module is changed for this CICS TS release.

The following changes were introduced in CICS TS 4.2:

- The following DFHDYPDS tokens are new:

**DYRUOWAF**

Indicates that callback is required at the end of the unit of work.

**DYRFUNC 7 = End\_UOW**

Identifies that this call is for end of unit of work processing.

**DYRLUOWID**

Identifies the local unit of work. This token forms part of the key for the LOCKED affinity type.

**DYRNUOWID**

Identifies the network unit of work. This token forms part of the key for the LOCKED affinity type.

- The DYRVER token is incremented by 1 to indicate that this module is changed for this CICS TS release.

If you use your own routing program, you might have to make adjustments for these changes. Because the length of DFHDYPDS has changed, you must recompile your user-written dynamic routing and distributed routing programs if they check the length of DFHDYPDS as the CICS-supplied samples do.

**DFHDYP, dynamic routing program**

A threadsafe program can function ship a DPL request using dynamic routing to ship the request to another region. If the dynamic routing program DFHDYP is coded to threadsafe standards and defined CONCURRENCY(REQUIRED) or CONCURRENCY(THREADSAFE) there should be no or minimal penalty in terms of undesirable TCB switches to invoke DFHDYP.

**DFHPEP, program error program**

A new field has been added to the supplied program error program to support the improvements in wild branch diagnosis.

```

*           Breaking Event Address
*
PEP_COM_BEAR           DS      AD           Breaking Event Addr
*

```

New fields have been added to the supplied program error program to support the extended z/Architecture MVS linkage conventions.

```

*
*      Additional register information
*
PEP_COM_FLAG1          DS      0D      Force alignment
PEP_COM_GP64_REGS_AVAIL DS      X      Flag byte
PEP_COM_GP64_REGS_AVAIL EQU    X'80'   64 bit register values
*                                     available in
*                                     PEP_COM_G64_REGISTERS
PEP_COM_ACCESS_REGS_AVAIL EQU    X'40'   64 bit register values
*                                     available in
*                                     PEP_COM_ACCESS_REGISTERS
PEP_COM_ORIGINAL_FPR_AVAIL EQU    X'20'   FPR 0, 2, 4 & 6 values
*                                     available in
*                                     PEP_COM_FP_REGISTERS
PEP_COM_ADDITIONAL_FPR_AVAIL EQU    X'10' All FPR available in
*                                     PEP_COM_FP_REGISTERS &
*                                     FPCR in
*                                     PEP_COM_FPC_REGISTER
PEP_COM_GP64_REGISTERS DS      CL7     Reserved
PEP_COM_FP_REGISTERS   DS      CL128   64 bit GP registers
PEP_COM_FP_REGISTER0   DS      0CL132  FP registers
PEP_COM_FP_REGISTER1   DS      FD      FP register 0
PEP_COM_FP_REGISTER2   DS      FD      FP register 1
PEP_COM_FP_REGISTER3   DS      FD      FP register 2
PEP_COM_FP_REGISTER4   DS      FD      FP register 3
PEP_COM_FP_REGISTER5   DS      FD      FP register 4
PEP_COM_FP_REGISTER6   DS      FD      FP register 5
PEP_COM_FP_REGISTER7   DS      FD      FP register 6
PEP_COM_FP_REGISTER8   DS      FD      FP register 7
PEP_COM_FP_REGISTER9   DS      FD      FP register 8
PEP_COM_FP_REGISTER10  DS      FD      FP register 9
PEP_COM_FP_REGISTER11  DS      FD      FP register 10
PEP_COM_FP_REGISTER12  DS      FD      FP register 11
PEP_COM_FP_REGISTER13  DS      FD      FP register 12
PEP_COM_FP_REGISTER14  DS      FD      FP register 13
PEP_COM_FP_REGISTER14  DS      FD      FP register 14
PEP_COM_FP_REGISTER14  DS      FD      FP register 15
PEP_COM_FPC_REGISTER   DS      F        FPC register
PEP_COM_ACCESS_REGISTERS DS      CL64   Access registers
*

```

## DFHPGADX, program autoinstall program

In CICS TS 5.2, the definitions for the CICS-supplied default autoinstall program, in the CICS-supplied group DFHPGAIP, changed to specify CONCURRENCY(THREADSAFE) to avoid TCB switching during program autoinstall. The resource definitions for the following programs now specify CONCURRENCY(THREADSAFE):

- DFHPGADX, Assembler program
- DFHPGAHX, C program
- DFHPGALX, PL/I program
- DFHPGAOX, COBOL program

If you are using the CICS-supplied default program for program autoinstall, examine any code added to the exit to ensure it is threadsafe. If the code is not threadsafe, you must either make changes to make it threadsafe, or change the resource definition to specify CONCURRENCY(QUASIRENT).

For more information about threadsafe programming techniques, see Threadsafe programs in Developing applications.

## DFHWBEP, Web error program

New fields, **wbep\_client\_ipv6\_address\_len**, **wbep\_client\_ipv6\_address**, **wbep\_server\_ipv6\_address\_len**, and **wbep\_server\_ipv6\_address** handle IPv6 addressing. User replaceable modules will behave as before with all IPv4 connections and you do not need to recompile existing modules unless they use the new parameters. If you introduce an IPv6 connection, the **wbep\_client\_address\_len**, **wbep\_client\_address**, **wbep\_server\_address\_len**, and **wbep\_server\_address** fields are populated with zeros.

If a URIMAP resource associated with the current HTTP request is disabled, error message DFHWB0763 is issued and the Web error program is started. This message is written to the CICS log each time the disabled URIMAP resource is encountered. Use the XMEOUT global user exit to suppress or reroute your messages if you do not want them to be written to the CICS log.

## DFHXCURM, External interface program

A new parameter, **URMXCFG**, is used to dynamically set the value of the **XCFGROUP** parameter in the DFHXCOPT table. The value is used by DFHXCURM for an EXCI allocate\_pipe request.

## EYU9WRAM, dynamic routing program: EYURWCOM communication area

EYURWCOM is the communication area that is used by the dynamic routing user-replaceable module EYU9WRAM.

The following EYURWCOM tokens were added in CICS TS 5.2:

### **WCOM\_APPL\_CONTEXT**

Application context.

### **WCOM\_PLATFORM**

Requesting platform name.

### **WCOM\_APPLICATION**

Requesting application name.

### **WCOM\_APPLVER**

Application version.

### **WCOM\_APPLMAJORVER**

Application major version.

### **WCOM\_APPLMINORVER**

Application minor version.

### **WCOM\_APPLMICROVER**

Application micro version.

### **WCOM\_OPERATION**

Requesting operation name.

The following EYURWCOM tokens were changed in CICS TS 5.2:

- **WCOM\_FILL3** has a new value of **WCOM\_VERSION**. In CICS TS 5.2 it is initialized with the character value 01.

The following EYURWCOM tokens were added in CICS TS 4.2:

**WCOM\_DYRLUOW**

Identifies the local unit of work for this request.

**WCOM\_DYRNUOW**

Identifies the network unit of work for this request.

The following EYURWCOM tokens were changed in CICS TS 4.2:

- **WCOM\_AFF\_TYPE** has a new value of **WCOM\_AFF\_LOCKED**.
- **WCOM\_AFF\_LIFE** has a new value of **WCOM\_AFF\_UOW**.

If you have customized EYU9WRAM, you might have to make adjustments for these changes.

## **EYU9XLOP, dynamic routing program: EYURWTRA communication area**

EYURWTRA is the communication area for the dynamic routing program EYU9XLOP.

The following EYURWTRA tokens were added in CICS TS 5.2:

**WTRA\_APPL\_CONTEXT**

Application context.

**WTRA\_PLATFORM**

Requesting platform name.

**WTRA\_APPLICATION**

Requesting application name.

**WTRA\_APPLVER**

Application version.

**WTRA\_APPLMAJORVER**

Application major version.

**WTRA\_APPLMINORVER**

Application minor version.

**WTRA\_APPLMICROVER**

Application micro version.

**WTRA\_OPERATION**

Requesting operation name.

The following EYURWTRA tokens are changed in CICS TS 5.2:

- **WTRA\_FILL1** has a new value of **WTRA\_VERSION**.

**Note:** Existing applications that use this field should have the field initialized to nulls. In CICS TS 5.2 only new fields in the WTRA COMMAREA that are commensurate with the version number are extracted and passed forwards. The version is in character format, and the version number for the Application Context additions is 01. A new declaration is added to the EYURWTRA member for Version 1:

```
DCL WTRA_VERSION_01 CHAR(2) CONSTANT('01');      /* EYURWTRA Version 1
*/
```

If you want to pass the application contexts through to your own WRAM program, you must initialize the WTRA\_APPL\_CONTEXT fields with the appropriate values, and must also set:

```
WTRA_VERSION = WTRA_VERSION_01;
```

The following EYURWTRA tokens were added in CICS TS 4.2:

**WTRA\_UOWOPT**

Signifies that the exit requires callback processing at the end of the UOW.

**WTRA\_LOCUOWID**

Identifies the local UOW token to be used.

**WTRA\_NETUOWID**

Identifies the network UOW token to be used.

If you have customized EYU9XLOP, you might have to make adjustments for these changes.

---

## New user-replaceable programs

CICS Transaction Server for z/OS, Version 5 Release 2 includes user-replaceable programs to support new CICS functions.

No new user-replaceable programs were added in CICS Transaction Server for z/OS, Version 5 Release 2.

### New sample user-replaceable program for IPCONN autoinstall

In CICS Transaction Server for z/OS, Version 5 Release 1 a new sample user-replaceable program was added for IPCONN autoinstall. The supplied source of the new user-replaceable program is a sample to illustrate a technique of customizing autoinstall of an IPCONN, such that the IPCONN name and APPLID are generated according to a template IPCONN that is previously installed.

The source of the additional IPCONN autoinstall user replaceable program is supplied in the SDFHSAMP library. The code is supplied in assembler as module DFH\$ISAI and COBOL as module DFH0ISAI. The executable load modules are supplied in the CICSTS SDFHLOAD library.

When the user-replaceable program is deployed, all IPIC installation requests are based on a template IPCONN that must match the name of the network ID of the partner (for CICS Transaction Gateway clients, this is the APPLID qualifier). Connection requests are accepted only if the APPLID of the partner matches the APPLID value that is specified in the template IPCONN.

For more information, see Sample autoinstall user program to support predefined connection templates.





---

## Chapter 13. Changes to CICS utilities

Changes to CICS utilities in CICS Transaction Server for z/OS, Version 5 Release 2 relate to new, changed, or obsolete CICS functions. The existing utility programs DFHCSDUP, DFHSTUP, and DFH0STAT support new resources. The trace formatting utility program DFHTUxxx and IPCS dump exit routine DFHPDxxx support new resources and are renamed for the release.

### **CICS JVM Application Isolation Utility removed**

Because of the removal of support for pooled JVMs in CICS TS for z/OS, Version 5.1, the CICS JVM Application Isolation Utility is no longer shipped with CICS. The CICS JVM Application Isolation Utility was a code analyzer tool to discover static variables in Java applications. It was provided to assist with moving Java workloads from resettable to continuous JVMs.

The CICS JVM Application Isolation Utility was shipped with CICS as a JAR file named dfhjau.jar. It ran under z/OS UNIX System Services as a stand-alone utility.

### **DFH0STAT, sample statistics utility program**

DFH0STAT, the sample statistics utility program, produces additional statistics reports for any new resource types that are added in each CICS release. Statistics reports relating to any obsolete resource types are no longer produced.

In CICS TS 5.2, no new statistics reports were added.

DFH0STAT does not report any private resources for applications deployed on platforms, and it does not identify programs that are declared as application entry points.

The Data Tables Storage report that is produced by DFH0STAT now includes storage totals for each data table in the report.

The Storage above 2 GB report that is produced by DFH0STAT now includes a number of new fields relating to 64-bit storage use in the GDSA.

To accommodate new statistics records added in CICS TS for z/OS, Version 4.1, DFH0STAT now has three panels for selecting reports to be printed. New COBOL modules for DFH0STAT are also provided, and some of the existing modules now print a different selection of statistics.

There is a new distributed program link resource limit, DPLLIMIT, parameter in the DFH0STAT System Status Report.

### **DFH0STXD, new sample EXTRACT statistics utility program**

The DFH0STXD sample extract program produces a basic report from the CICS statistics records for installed CICS resources. Each print line displays details for the resource listed including the resource type, the define source and the installation signature. For more information, see the *CICS Operations and Utilities Guide*.

## DFHCSDUP, CSD utility program

The CSD utility program supports all the new and changed resource types and attributes. See Chapter 5, “Changes to resource definitions,” on page 35 for details of all the changes to CSD resource definitions that are supported by DFHCSDUP.

If you are sharing the CSD with earlier releases of CICS and want to alter definitions that are used only on earlier releases, you must use the latest DFHCSDUP, even if some attributes are obsolete in the latest releases of CICS. To use the latest DFHCSDUP to update obsolete options on resource definitions, specify the COMPAT option in the **PARM** string to indicate that you want DFHCSDUP to operate in compatibility mode.

The report data sets produced by the LIST function of DFHCSDUP now include release information for the CSD. The field **CREATED BY RELEASE** shows the release in which the CSD was created. The field **UPGRADED TO RELEASE**, if present, indicates that the CSD has been upgraded and to what release.

### DFHCSDUP ADD command

New **BEFORE** and **AFTER** options are added to **DFHCSDUP ADD** to control where a new group is placed.

#### **After**(*groupname2*)

Specify **AFTER** to place the new group name after the existing group name. The group name is added at the end of the list if **BEFORE** or **AFTER** is not specified.

#### **Before**(*groupname3*)

Specify **BEFORE** to place the new group name before the existing group name. The group name is added at the end of the list if **BEFORE** or **AFTER** is not specified.

### DFHCSDUP LIST command

A new **SIGSUMM** option is added to **DFHCSDUP LIST** to produce a summary of definition signatures for all of the specified resources.

#### **Sigsumm**

Shows the definition signatures for each of the resource definitions in the group specified.

### DFHCSDUP MIGRATE command

Support for the **DFHCSDUP MIGRATE** command was withdrawn in CICS TS for z/OS, Version 4.1.

In earlier versions of CICS, the **DFHCSDUP MIGRATE** command migrated the eligible DFHDCT, DFHRCT, DFHTCT and DFHTST macro resource definitions to the CICS system definition data set (CSD).

If you use any of these tables, you must migrate them to the CSD before you upgrade to CICS TS for z/OS, Version 5.2. To do so, you can use the DFHCSDUP MIGRATE command on any supported release up to CICS TS for z/OS, Version 3.2 .

## **DFHCSDUP sample EXTRACT programs**

These sample EXTRACT user programs for the DFHCSDUP utility program support the definition signature fields:

DFH\$CRFA, DFH\$CRFP, and DFH0CRFC  
DFH\$FORA, DFH\$FORP, and DFH0FORC  
DFH0CBDC  
DFH\$DB2T and DFH\$SQLT

## **DFHCSVCU, new utility program**

A new utility, DFHCSVCU, is provided to install the CICS Type 3 SVC without the need to perform an IPL of the z/OS system. Use of this utility program must be restricted to authorized users only.

This utility updates or adds a single SVC entry in the SVC table with a pointer containing the entry point of the supplied module. For an existing SVC number, before the SVC is updated, all CICS regions using that SVC number must be shut down, otherwise results can be unpredictable.

## **DFHPD690, IPCS dump exit routine**

The dump formatting utility program is renamed to DFHPD690. When formatting a dump data set always ensure that you use the dump formatting program with the same level number for the release of CICS TS that created the dump data set.

The dump exit routine for formatting CICS system dumps formats the control blocks for the new domains. To select or ignore dump data for any domains, specify the dump component keywords for those domains. The dump component keywords for use with the CICS IPCS dump exit routine are the same as the CETR trace component codes.

## **DFHMEU, message editing utility**

The message editing utility is obsolete in this release. This function is no longer available.

## **DFHSTUP, statistics formatting utility program**

The statistics formatting utility program formats additional statistics reports for new and updated resource types. Statistics reports relating to obsolete resource types are no longer produced. See Chapter 15, “Changes to statistics,” on page 177 for information about changes to resource types and new and obsolete keywords on the SELECT TYPE and IGNORE TYPE parameters.

DFHSTUP reports private resources for applications deployed on platforms, and identifies programs that are declared as application entry points.

The maximum number of CICS regions (APPLIDs) that the DFHSTUP utility can process is increased from 520 to 2000. This change provides the flexibility to include all CICS regions in a single statistics report.

There is a new distributed program link resource limit, DPLLIMIT, parameter in the DFHSTUP Interval, End of Day, Requested, and Summary reports for transaction resource monitoring.

## **DFHTU690, trace formatting utility program**

The trace formatting utility program is renamed to DFHTU690. When formatting a dump data set always ensure that you use the dump formatting program with the same level number for the release of CICS TS that created the dump data set.

The program formats trace entries written by the new domains and functions. The new identifiers that you can specify to DFHTU690 on the **TYPETR** parameter for these functional areas are the same as the CETR trace component codes.

---

## Chapter 14. Changes to monitoring

Changes to CICS monitoring data might affect user-written and vendor-written utilities that analyze and print CICS SMF 110 monitoring records.

Check your utility programs that process CICS SMF records to ensure that they can still process SMF 110 records correctly. If you have utility programs provided by independent software vendors, you must ensure that they can handle the SMF 110 records correctly. You can identify SMF 110 records from different releases by using the record-version field in the SMF product section.

- You can request a new type of monitoring data called identity data, which retrieves the distinguished name and realm for a transaction. This facility depends on the z/OS Identity Propagation function that is provided in z/OS, Version 1 Release 11.
- The length of a standard performance class monitoring record, as output to SMF, has increased to 3260 bytes. The length does not allow for any user data that you add, or any system-defined data fields that you exclude, by using a monitoring control table (MCT).
- The offsets have changed for a number of the default CICS dictionary entries in the dictionary data sections of CICS monitoring SMF 110 records.

### Data compression for SMF 110 monitoring records

CICS Transaction Server for z/OS, Version 3 Release 2 introduced a data compression facility for SMF 110 monitoring records, which can provide a significant reduction in the volume of data written to SMF. All monitoring records, except identity records, are compressed by default. If you do not want to compress monitoring records, you must change the compression option to COMPRESS=NO.

If you want to activate data compression for monitoring records, check that your utility programs handle data compression correctly. If you have utility programs provided by independent software vendors, make sure that the product can identify compressed CICS SMF 110 monitoring records and expand the data section using the z/OS Data Compression and Expansion Services, so that the monitoring records can be processed correctly. If the reporting tool cannot work in this way, consider using the CICS-supplied monitoring sample program DFH\$MOLS, with the EXPAND control statement, to produce an output data set containing the SMF 110 monitoring records in their expanded format, with which the tool can work.

---

### Obsolete monitoring data fields

Some obsolete data fields are no longer available in the CICS monitoring facility. If you have any of these fields specified in a DFHMCT TYPE=RECORD macro, you must remove them.

### Obsolete performance class data fields in CICS Transaction Server for z/OS, Version 5 Release 2

No performance class data fields were made obsolete in CICS Transaction Server for z/OS, Version 5 Release 2.

## Obsolete performance class data fields in CICS Transaction Server for z/OS, Version 5 Release 1

The following performance class data field in group DFHDATA is obsolete:

**189 (TYPE-S, 'DB2WAIT', 12 BYTES)**

This field, which returned zero in CICS Transaction Server for z/OS, Version 5 Release 1, is no longer produced. The data collected by this field ceased to be meaningful when CICS DB2 support began to exploit the open transaction environment (OTE).

The whole of the performance data group DFHEJBS is obsolete, comprising the following fields:

**311 (TYPE-C, 'CBSRVNM', 4 BYTES)**

The CorbaServer for which this request processor instance is handling requests.

**312 (TYPE-A, 'EJBSACCT', 4 BYTES)**

The number of bean activations that have occurred in this request processor.

**313 (TYPE-A, 'EJBSPACT', 4 BYTES)**

The number of bean passivations that have occurred in this request processor.

**314 (TYPE-A, 'EJBRECT', 4 BYTES)**

The number of bean creation calls that have occurred in this request processor.

**315 (TYPE-A, 'EJBREMCT', 4 BYTES)**

The number of bean removal calls that have occurred in this request processor.

**316 (TYPE-A, 'EJBMTHCT', 4 BYTES)**

The number of bean method calls executed in this request processor.

**317 (TYPE-A, 'EJBTOTCT', 4 BYTES)**

The total for this request processor of fields 312–316.

The following performance class data fields in group DFHTASK are obsolete:

**260 (TYPE-S, 'J8CPUT', 12 BYTES)**

The processor time during which the user task was dispatched by the CICS dispatcher domain on a CICS J8 mode TCB.

**267 (TYPE-S, 'J9CPUT', 12 BYTES)**

The processor time during which the user task was dispatched by the CICS dispatcher domain on a CICS J9 mode TCB.

**277 (TYPE-S, 'MAXJTDLY', 12 BYTES)**

The elapsed time for which the user task waited to obtain a CICS JVM TCB (J8 or J9 mode), because the CICS system reached the limit set by the system parameter, MAXJVMTCBS. This field is a component of the task suspend time, SUSPTIME (014), field.

The following performance class data field in group DFHWEBB is obsolete:

**411 (TYPE-S, 'MLXSSCTM', 12 BYTES)**

The CPU time taken to convert a document using the z/OS XML System Services parser. This field is a subset of the total CPU time as measured in the USRCPUT field (owner DFHTASK, field ID 008).

---

## Changed monitoring data fields

Existing data fields can change from release to release in the performance class data, identity class data, transaction resource class data, and exception class data produced by CICS monitoring.

No monitoring data fields were changed in CICS Transaction Server for z/OS, Version 5 Release 2.

The following monitoring data fields were changed in earlier releases:

### Performance class data fields changed in CICS Transaction Server for z/OS, Version 5 Release 1

The following performance data fields in the DFHCHNL group are changed to include data from the new GET64 CONTAINER and PUT64 CONTAINER commands.

**323 (TYPE-A, 'PGGETCCT', 4 BYTES)**

The number of GET CONTAINER and GET64 CONTAINER requests for channel containers issued by the user task.

**324 (TYPE-A, 'PGPUTCCT', 4 BYTES)**

The number of PUT CONTAINER and PUT64 CONTAINER requests for channel containers issued by the user task.

**326 (TYPE-A, 'PGGETCDL', 4 BYTES)**

The total length, in bytes, of the data in the containers of all the GET CONTAINER CHANNEL and GET64 CONTAINER CHANNEL commands issued by the user task.

**327 (TYPE-A, 'PGPUTCDL', 4 BYTES)**

The total length, in bytes, of the data in the containers of all the PUT CONTAINER CHANNEL and PUT64 CONTAINER CHANNEL commands issued by the user task.

**328 (TYPE-A, 'PGCRECCT', 4 BYTES)**

The number of containers created by MOVE, PUT CONTAINER, and PUT64 CONTAINER requests for channel containers issued by the user task.

### Performance class data fields changed in CICS Transaction Server for z/OS, Version 4 Release 1

**Group DFHPRG: 071 (TYPE-C, 'PGMNAME', 8 BYTES)**

For web service applications, this field now contains the target application program name.

**Group DFHSOCK: 318 (TYPE-C, 'CLIPADDR', 40 BYTES)**

This field replaces field 244, which was 16 bytes long.

**Group DFHTASK: 007 (TYPE-S, 'USRDISPT', 12 BYTES)**

New TCB modes TP and T8 are added for this field.

**Group DFHTASK: 008 (TYPE-S, 'USRCPUT', 12 BYTES)**

New TCB modes TP and T8 are added for this field.

**Group DFHTASK: 164 (TYPE-A, 'TRANFLAG', 8 BYTES)**

Additions are made to the transaction flags field as follows:

- In byte 4, Transaction origin type, the following value is added:

X'14'    Event

- In byte 5, Transaction status information, the following bits are added:

**Bit 0** The transaction origin

**Bit 2** Resource class record, or records, for this task

**Bit 3** Identity class record, or records, for this task

**Group DFHTASK: 257 (TYPE-S, 'MSDISPT', 12 BYTES)**

New TCB modes TP and T8 are added for this field.

**Group DFHTASK: 258 (TYPE-S, 'MSCPUT', 12 BYTES)**

New TCB modes TP and T8 are added for this field.

**Group DFHTASK: 262 (TYPE-S, 'KY8DISPT', 12 BYTES)**

New TCB mode T8 is added for this field.

**Group DFHTASK: 263 (TYPE-S, 'KY8CPUT', 12 BYTES)**

New TCB mode T8 is added for this field.

**Group DFHWEBB: 224 (TYPE-A, 'WBREADCT', 4 BYTES)**

The number of READ QUERYPARM requests issued by the user task is added to the count for this field.

**Group DFHWEBB: 235 (TYPE-A, 'WBTOTWCT', 4 BYTES)**

The number of READ QUERYPARM requests issued by the user task is added to the count for this field.

**Group DFHWEBB: 239 (TYPE-A, 'WBBRWCT', 4 BYTES)**

The number of QUERYPARM browse requests issued by the user task is added to the count for this field.

**Group DFHWEBB: 340 (TYPE-A, 'WBIWBSCT', 4 BYTES)**

The number of EXEC CICS INVOKE SERVICE requests issued by the user task is added to the count for this field.

---

## New monitoring data fields

New data fields are added in the exception class data, identity class data, performance class data, and transaction resource class data produced by CICS monitoring.

No monitoring data fields were added in CICS Transaction Server for z/OS, Version 5 Release 2.

The following monitoring data fields were added in earlier releases:

### New exception resource identifiers in exception class data

Field EXCMNRID in the exception data section of a monitoring record has the following new values:

**'GUDSA'**

Wait for GUDSA storage

**'GSDSA'**

Wait for GSDSA storage

**rule\_id**

The ID of the policy rule whose threshold has been exceeded.



## New exception type in exception class data

Field EXCMNTYP in the exception data section of a monitoring record has the following new value:

**X'0004'**

Exception because a policy threshold has been exceeded (EXCMNPOL)

## New identity class monitoring

You can request a new type of monitoring data called identity data, which retrieves the distinguished name and realm for a transaction. For more information, see Chapter 14, “Changes to monitoring,” on page 163.

## New performance class data fields in group DFHCICS

### 351 (TYPE-C, 'OADID', 64 BYTES)

The adapter identifier added to the origin data by the adapter. This field is blank if the task was not started by using an adapter, or if it was and the adapter did not set this value.

### 352 (TYPE-C, 'OADATA1', 64 BYTES)

The data added to the origin data by the adapter. This field is blank if the task was not started by using an adapter, or if it was and the adapter did not set this value.

### 353 (TYPE-C, 'OADATA2', 64 BYTES)

The data added to the origin data by using the adapter. This field is blank if the task was not started by using an adapter, or if it was and the adapter did not set this value.

### 354 (TYPE-C, 'OADATA3', 64 BYTES)

The data added to the origin data by the adapter. This field is blank if the task was not started by using an adapter, or if it was and the adapter did not set this value.

### 373 (TYPE-C, 'PHNTWKID', 8 BYTES)

The network identifier of the CICS system of an immediately previous task in another CICS system with which this task is associated.

### 374 (TYPE-C, 'PHAPPLID', 8 BYTES)

The APPLID from previous hop data. This is the APPLID of the CICS system of a previous task in another CICS system with which this task is associated. See Previous hop data characteristics in Getting started for more information about previous hop data.

### 375 (TYPE-T, 'PHSTART', 8 BYTES)

The start time of the immediately previous task in another CICS system with which this task is associated.

### 376 (TYPE-P, 'PHTRANNO', 4 BYTES)

The task number of the immediately previous task in another CICS system with which this task is associated.

### 377 (TYPE-C, 'PHTRAN', 4 BYTES)

The transaction ID (TRANSID) of the immediately previous task in another CICS system with which this task is associated.

### 378 (TYPE-A, 'PHCOUNT', 4 BYTES)

The number of times there has been a request from one CICS system to another CICS system to initiate a task with which this task is associated.

**402 (TYPE-A, 'EICTOTCT', 4 BYTES)**

The total number of EXEC CICS commands issued by the user task.

**405 (TYPE-A, 'TIASKTCT', 4 BYTES)**

The number of EXEC CICS ASKTIME commands issued by the user task.

**406 (TYPE-A, 'TITOTCT', 4 BYTES)**

The total number of EXEC CICS ASKTIME, CONVERTTIME, and FORMATTIME commands issued by the user task.

**408 (TYPE-A, 'BFDGSTCT', 4 BYTES)**

The total number of EXEC CICS BIF DIGEST commands issued by the user task.

**409 (TYPE-A, 'BFTOTCT', 4 BYTES)**

The total number of EXEC CICS BIF DEEDIT and BIF DIGEST commands issued by the user task.

**415 (TYPE-A, 'ECSIGECT', 4 BYTES)**

The number of EXEC CICS SIGNAL EVENT commands issued by the user task.

**416 (TYPE-A, 'ECEFOPCT', 4 BYTES)**

The number of event filter operations performed by the user task.

**417 (TYPE-A, 'ECEVNTCT', 4 BYTES)**

The number of events captured by the user task.

**418 (TYPE-A, 'ECSEVCCT', 4 BYTES)**

The number of synchronous emission events captured by the user task.

**449 (TYPE-A, 'MPPRTXCD', 4 BYTES)**

Number of policy rule thresholds that this task has exceeded. This field is all nulls (0x00 bytes) if no thresholds have been exceeded or if the task has no policy rules applied to it.

## **New performance class data fields in group DFHDATA**

**397 (TYPE-S, 'WMQASRBT', 12 BYTES)**

The WebSphere MQ SRB time this transaction spent processing WebSphere MQ API requests. Add this field to the transaction CPU time field (USRCPUT) when considering the measurement of the total processor time consumed by a transaction. This field is zero for point-to-point messaging activity, but it is nonzero where WebSphere MQ API requests result in publish and subscribe type messaging.

**Note:** WebSphere MQ only returns this value to CICS when Class 3 accounting information is being collected in WebSphere MQ; if this information is not being collected, the field is always zero. To start collecting Class 3 accounting information, issue the command `START TRACE(ACCTG) DEST(SMF) CLASS(3)` in WebSphere MQ.

## **New performance class data fields in group DFHDEST**

**403 (TYPE-S, 'TDILWTT', 12 BYTES)**

The elapsed time for which the user task waited for an intrapartition transient data lock (TDIPLOCK). For more information, see Clocks and time stamps in Reference -> Monitoring and Transaction wait (suspend) times in Reference -> Monitoring. For more information about tasks suspended on resource type TDIPLOCK, see Resource type TDIPLOCK: waits for transient data intrapartition requests in Troubleshooting.

This field is a component of the task suspend time, SUSPTIME (014), field.

**404 (TYPE-S, 'TDELWTT', 12 BYTES)**

The elapsed time for which the user task waited for an extrapartition transient data lock (TDEPLOCK). For more information, see Clocks and time stamps in Reference -> Monitoring and Transaction wait (suspend) times in Reference -> Monitoring. For more information about tasks suspended on resource type TDEPLOCK, see Resource type TDEPLOCK: waits for transient data extrapartition requests in Troubleshooting.

This field is a component of the task suspend time, SUSPTIME (014), field.

## **New performance class data fields in group DFHFILE**

**426 (TYPE-S, 'FCXCWTT', 12 BYTES)**

The elapsed time in which the user task waited for exclusive control of a VSAM control interval. This field counts time spent waiting on resource type FCXCSUSP, FCXDSUSP, FCXCPROT, or FCXDPROT. For more information, see Clocks and time stamps in Reference -> Monitoring, and Transaction wait (suspend) times in Reference -> Monitoring.

**Note:** This field is a component of the task suspend time, SUSPTIME (014) field.

**427 (TYPE-S, 'FCVSWTT', 12 BYTES)**

The elapsed time in which the user task waited for a VSAM string. This field counts time spent waiting on resource type FCPSSUSP or FCSRSUSP. For more information, see Clocks and time stamps in Reference -> Monitoring, and Transaction wait (suspend) times in Reference -> Monitoring.

**Note:** This field is a component of the task suspend time, SUSPTIME (014) field.

## **New performance class data fields in group DFH SOCK**

**319 (TYPE-S, 'ISALWTT', 12 BYTES)**

The elapsed time for which a user task waited for an allocate request for an IPIC session. For more information, see Clocks and time stamps in Reference -> Monitoring and Transaction wait (suspend) times in Reference -> Monitoring.

This field is a component of the task suspend time, SUSPTIME (014), field.

**320 (TYPE-A, 'SOCIPHER', 4 BYTES)**

Identifies the code for the cipher suite that was selected during the SSL handshake for use on the inbound connection, for example X'0000002F'. For a list of the cipher suites that are supported by CICS and z/OS and their codes, see Cipher suites in Securing.

## **New performance class data fields in group DFHSTOR**

**441 (TYPE-A, 'SC64CGCT', 4 BYTES)**

Number of user-storage GETMAIN requests issued by the user task for storage above the bar, in the CICS dynamic storage area (GCDSA).

**442 (TYPE-A, 'SC64CHWM', 4 BYTES)**

Maximum amount (high-water mark) of user storage, rounded up to the next 4K, allocated to the user task above the bar, in the CICS dynamic storage area (GCDSA).

**443 (TYPE-A, 'SC64UGCT', 4 BYTES)**

Number of user-storage GETMAIN requests issued by the user task for storage above the bar, in the user dynamic storage area (GUDSA).

**444 (TYPE-A, 'SC64UHM', 4 BYTES)**

Maximum amount (high-water mark) of user storage, rounded up to the next 4K, allocated to the user task above the bar, in the user dynamic storage area (GUDSA).

**445 (TYPE-A, 'SC64SGCT', 4 BYTES)**

Number of storage GETMAIN requests issued by the user task for shared storage above the bar, in the GCDSA or GSDSA.

**446 (TYPE-A, 'SC64GSHR', 4 BYTES)**

Amount of shared storage obtained by the user task by using a GETMAIN request above the bar, in the GCDSA or GSDSA. The total number of bytes obtained is rounded up to the next 4096 bytes, and the resulting number of 4K pages is displayed.

**447 (TYPE-A, 'SC64FSHR', 4 BYTES)**

Amount of shared storage released by the user task by using a FREEMAIN request above the bar, in the GCDSA or GSDSA. The total number of bytes obtained is rounded up to the next 4096 bytes, and the resulting number of 4K pages is displayed.

## **New performance class data fields in group DFHTASK**

**283 (TYPE-S, 'MAXTTDLY', 12 BYTES)**

The elapsed time for which the user task waited to obtain a T8 TCB, because the CICS system reached the limit of available threads. The T8 mode open TCBs are used by a JVM server to perform multithreaded processing. Each T8 TCB runs under one thread. The thread limit is 2000 for each CICS region and each JVM server in a CICS region can have up to 256 threads. For more information, see Transaction wait (suspend) times in Reference -> Monitoring. This field is a component of the task suspend time, SUSPTIME (014), field.

**348 (TYPE-S, 'ROMODDLY', 12 BYTES)**

The elapsed time for which the user task waited for redispach on the CICS RO TCB. This time is the aggregate of the wait times between each event completion and user-task redispach. The ROMODDLY field is a component of the task suspend time, SUSPTIME (014), field, and also the redispach wait, DISPWTT (102), field.

**349 (TYPE-S, 'SOMODDLY', 12 BYTES)**

The elapsed time for which the user task waited for redispach on the CICS SO TCB. This time is the aggregate of the wait times between each event completion and user-task redispach. The SOMODDLY field is a component of the task suspend time, SUSPTIME (014), field, and also the redispach wait, DISPWTT (102), field.

**400 (TYPE-S, 'T8CPUT', 12 BYTES)**

The processor time during which the user task was dispatched by the CICS dispatcher domain on a CICS T8 mode TCB. T8 mode TCBs are used by a JVM server to perform multithreaded processing. When a thread is allocated a T8 mode TCB, that same TCB remains associated with the thread until the processing completes. This field is a component of the total task CPU time field, USRCPUT (field ID 008 in group DFHTASK), and the task key 8 CPU time field, KY8CPUT (field ID 263 in group DFHTASK).

**401 (TYPE-S, 'JVMTHDWT', 12 BYTES)**

The elapsed time that the user task waited to obtain a JVM server thread because the CICS system had reached the thread limit for a JVM server in the CICS region. This field is a component of the task suspend time, SUSPTIME (014), field.

**430 (TYPE-C, 'CECMCHTP', 4 BYTES)**

The CEC machine type, in EBCDIC, for the physical hardware environment where the CICS region is running. CEC (central electronics complex) is a commonly used synonym for CPC (central processing complex).

**431 (TYPE-C, 'CECMDLID', 16 BYTES)**

The CEC model number, in EBCDIC, for the physical hardware environment where the CICS region is running.

**433 (TYPE-A, 'MAXTASKS', 4 BYTES)**

The MXT or MAXTASKS value, expressed as a number of tasks, for the CICS region at the time the user task was attached.

**434 (TYPE-A, 'CURTASKS', 4 BYTES)**

The current number of active user transactions in the system at the time the user task was attached.

**436 (TYPE-S, 'CPUTONCP', 12 BYTES)**

The total task processor time on a standard processor for which the user task was dispatched on each CICS TCB under which the task ran.

This field is a component of the task CPU time field, USRCPUT (field ID 008 in group DFHTASK). To calculate the task processor time that was spent on a specialty processor (zIIP or zAAP), subtract the time recorded in the CPUTONCP field from the time recorded in the USRCPUT field.

**Note:** The times shown in the CPUTONCP and OFFLCPUT fields are only available when running on a system that supports the Extract CPU Time instruction service that is available on IBM System z9® or later hardware. For z/OS, Version 1 Release 13, the PTF for APAR OA38409 must also be applied.

**437 (TYPE-S, 'OFFLCPUT', 12 BYTES)**

The total task processor time that was spent on a standard processor but was eligible for offload to a specialty processor (zIIP or zAAP).

This field is a component of the task CPU time field, USRCPUT (field ID 008 in group DFHTASK), and also a component of the standard CPU time field, CPUTONCP (field ID 436 in group DFHTASK). To calculate the task processor time spent on a standard processor that was not eligible for offload to a specialty processor, subtract the time recorded in the OFFLCPUT field from the time recorded in the CPUTONCP field.

**Note:** The times shown in the CPUTONCP and OFFLCPUT fields are only available when running on a system that supports the Extract CPU Time instruction service that is available on IBM System z9 or later hardware. For z/OS, Version 1 Release 13, the PTF for APAR OA38409 must also be applied.

**451 (TYPE-C, 'ACAPPLNM', 64 BYTES)**

The 64-character name of the application in the application context data.

**452 (TYPE-C, 'ACPLATNM', 64 BYTES)**

The 64-character name of the platform in the application context data.

**453 (TYPE-A, 'ACMAJVER', 4 BYTES)**

The major version of the application in the application context data, expressed as a 4-byte binary value.

**454 (TYPE-A, 'ACMINVER', 4 BYTES)**

The minor version of the application in the application context data, expressed as a 4-byte binary value.

**455 (TYPE-A, 'ACMICVER', 4 BYTES)**

The micro version of the application in the application context data, expressed as a 4-byte binary value.

**456 (TYPE-C, 'ACOPERNM', 64 BYTES)**

The 64-character name of the operation in the application context data.

## **New performance class data fields in group DFHTERM**

**343 (TYPE-S, 'TCALWTT', 12 BYTES)**

The elapsed time for which a user task waited for an allocate request for an MRO (Inter-Region Communication), LU6.1, or LU6.2 session. For more information, see Clocks and time stamps in Reference -> Monitoring and Transaction wait (suspend) times in Reference -> Monitoring.

This field is a component of the task suspend time, SUSPTIME (014), field.

## **New performance class data fields in group DFHWEBB**

**380 (TYPE-C, 'WBURIMNM', 8 BYTES)**

For CICS web support, Atom feeds, and web service applications, the name of the URIMAP resource definition that was mapped to the URI of the inbound request that was processed by this task.

**381 (TYPE-C, 'WBPIPLNM', 8 BYTES)**

For web service applications, the name of the PIPELINE resource definition that was used to provide information about the message handlers that act on the service request processed by this task.

**382 (TYPE-C, 'WBATMSNM', 8 BYTES)**

For Atom feeds, the name of the ATOMSERVICE resource definition that was used to process this task.

**383 (TYPE-C, 'WBSVCENM', 32 BYTES)**

For web service applications, the name of the WEBSERVICE resource definition that was used to process this task.

**384 (TYPE-C, 'WBSVOPNM', 64 BYTES)**

For web service applications, the first 64 bytes of the web service operation name.

**385 (TYPE-C, 'WBPROGNM', 8 BYTES)**

For CICS web support, the name of the program from the URIMAP resource definition that was used to provide the application-generated response to the HTTP request processed by this task.

**386 (TYPE-A, 'WBSFCRCT', 4 BYTES)**

The number of EXEC CICS SOAPFAULT CREATE commands issued by the user task.

**387 (TYPE-A, 'WBSFTOCT', 4 BYTES)**

The total number of EXEC CICS SOAPFAULT ADD, CREATE, and DELETE commands issued by the user task.



**388 (TYPE-A, 'WBISSFCT', 4 BYTES)**

The total number of SOAP faults received in response to the **EXEC CICS INVOKE SERVICE** and **EXEC CICS INVOKE WEBSERVICE** commands issued by the user task.

**390 (TYPE-A, 'WBSREQBL', 4 BYTES)**

For web service applications, the SOAP request body length.

**392 (TYPE-A, 'WBSRSPBL', 4 BYTES)**

For web service applications, the SOAP response body length.

**412 (TYPE-A, 'MLXSSTDL', 4 BYTES)**

The total length of the documents that were parsed using the z/OS XML System Services parser.

**413 (TYPE-A, 'MLXMLTCT', 4 BYTES)**

The number of **EXEC CICS TRANSFORM** commands issued by the user task.

**420 (TYPE-A, 'WSACBLCT', 4 BYTES)**

The number of **EXEC CICS WSACONTEXT BUILD** commands issued by the user task.

**421 (TYPE-A, 'WSACGTCT', 4 BYTES)**

The number of **EXEC CICS WSACONTEXT GET** commands issued by the user task.

**422 (TYPE-A, 'WSAEPCT', 4 BYTES)**

The number of **EXEC CICS WSAEPR CREATE** commands issued by the user task.

**423 (TYPE-A, 'WSATOTCT', 4 BYTES)**

The total number of **EXEC CICS WS-Addressing** commands issued by the user task.

## **New transaction resource class data fields**

**MNR\_PHD\_NTWKID (TYPE-C, 8 BYTES)**

The network identifier of the CICS system of an immediately previous task in another CICS region with which this task is associated. For more information, see field 373 (PHNTWKID) in the DFHCICS performance data group.

**MNR\_PHD\_APPLID (TYPE-C, 8 BYTES)**

The APPLID from previous hop data. This is the APPLID of the CICS system of a previous task in another CICS system with which this task is associated. For more information, see field 374 (PHAPPLID) in the DFHCICS performance data group. For more information about previous hop data, see Previous hop data characteristics in Getting started.

**MNR\_PHD\_ATTACH\_TIME (TYPE-T, 8 BYTES)**

The start time of the immediately previous task in another CICS system with which this task is associated. For more information, see field 375 (PHSTART) in the DFHCICS performance data group.

**MNR\_PHD\_TRANNUM (TYPE-P, 4 BYTES)**

The task number of the immediately previous task in another CICS system with which this task is associated. For more information, see field 376 (PHTRANNO) in the DFHCICS performance data group.

**MNR\_PHD\_TRANID (TYPE-C, 4 BYTES)**

The transaction ID (TRANSID) of the immediately previous task in another CICS system with which this task is associated. For more information, see field 377 (PHTRAN) in the DFHCICS performance data group.

**MNR\_PHD\_COUNT (TYPE-A, 4 BYTES)**

The number of times there has been a request from one CICS system to

another CICS region to initiate a task with which this task is associated. For more information, see field 378 (PHCOUNT) in the DFHCICS performance data group.

**MNR\_ID\_TRNGRPID (TYPE-C, 28 BYTES)**

The transaction group ID of the originating task.

## **New identity class data fields**

**MNI\_ID\_PHD\_NTWKID (TYPE-C, 8 BYTES)**

The network identifier of the CICS system of an immediately previous task in another CICS system with which this task is associated. For more information, see field 373 (PHNTWKID) in the DFHCICS performance data group.

**MNI\_ID\_PHD\_APPLID (TYPE-C, 8 BYTES)**

The APPLID from previous hop data. This is the APPLID of the CICS system of a previous task in another CICS system with which this task is associated. For more information, see field 374 (PHAPPLID) in the DFHCICS performance data group. For more information about previous hop data, see Previous hop data characteristics in Getting started.

**MNI\_ID\_PHD\_START\_TIME (TYPE-T, 8 BYTES)**

The start time of the immediately previous task in another CICS system with which this task is associated. For more information, see field 375 (PHSTART) in the DFHCICS performance data group.

**MNI\_ID\_PHD\_TRANNO (TYPE-P, 4 BYTES)**

The task number of the immediately previous task in another CICS system with which this task is associated. For more information, see field 376 (PHTRANNO) in the DFHCICS performance data group.

**MNI\_ID\_PHD\_TRANID (TYPE-C, 4 BYTES)**

The transaction ID (TRANSID) of the immediately previous task in another CICS system with which this task is associated. For more information, see field 377 (PHTRAN) in the DFHCICS performance data group.

**MNI\_ID\_PHD\_COUNT (TYPE-A, 4 BYTES)**

The number of times there has been a request from one CICS system to another CICS system to initiate a task with which this task is associated. For more information, see field 378 (PHCOUNT) in the DFHCICS performance data group.

## **Transaction resource class data for distributed program links**

You can now request transaction resource class data for distributed program links, as well as for files and temporary storage queues.

The default is that transaction resource class data is not collected for distributed program links. To collect this data, you must assemble an MCT that specifies a suitable number of distributed program links to be monitored for each transaction.

---

## **Changes to the monitoring sample program DFH\$MOLS**

DFH\$MOLS is a sample program that you can modify or adapt to your own purposes. It shows you how you can code your own monitoring utility program to produce reports from the data collected by the CICS monitoring domain (MN) and written to SMF data sets.



From CICS Transaction Server for z/OS, Version 3 Release 2, DFH\$MOLS can identify any SMF 110 monitoring records that have been compressed and expand them using the z/OS Data Compression and Expansion Services, CSRCE\$RV, before printing reports.

## New options

A new DPL option is added to the DFH\$MOLS **RESOURCE** control statement to control the printing of the distributed program link resource monitoring data.

DFH\$MOLS now contains an IDN option on the PRINT control statement to allow you produce a report of the new identity class records. The DFH\$MOLS totals report page also includes information about the number of identity records processed.

---

## Monitoring sample program DFH\$MOLS: support for data for earlier CICS releases

The CICS Transaction Server for z/OS, Version 5 Release 2 release of DFH\$MOLS processes monitoring data for earlier supported CICS releases, but the UNLOAD control statement has additional restrictions.

In CICS Transaction Server for z/OS, Version 5 Release 2, DFH\$MOLS can process SMF 110 monitoring data records for the following supported releases:

- CICS Transaction Server for z/OS, Version 5 Release 2
- CICS Transaction Server for z/OS, Version 5 Release 1
- CICS Transaction Server for z/OS, Version 4 Release 2
- CICS Transaction Server for z/OS, Version 4 Release 1
- CICS Transaction Server for z/OS, Version 3 Release 2
- CICS Transaction Server for z/OS, Version 3 Release 1

However, the UNLOAD control statement (which unloads performance class monitoring data into a fixed length record format) can be used only with monitoring data for CICS Transaction Server for z/OS, Version 3 Release 2 onwards. Any version or release of DFH\$MOLS cannot process monitoring data for a version or release *later* than itself, so you must always use the DFH\$MOLS from the highest version or release available to you.

---

## Changes to the monitoring control table (MCT)

The default value for the MCT Resource Manager Interface (RMI) parameter has changed from RMI=NO to RMI=YES. With the new setting, additional monitoring performance data is collected by default from the resource managers used by your transactions.

You can use CICS Performance Analyzer or a similar application to analyze the performance of your system using this collected data. The RMI parameter is defined in the DFHMCT TYPE=INITIAL macro, which contains the macro instructions for the control section of the MCT. For more information about the RMI parameter, see Control section—DFHMCT TYPE=INITIAL.



---

## Chapter 15. Changes to statistics

CICS statistics records contain changes because of new domains or because of enhancements to CICS. Statistics types are added or removed and some statistics types have new or changed fields. You must recompile application programs using the changed DSECTs.

### CEMT and EXEC CICS statistics commands

You can retrieve all the new statistics described in this section using the **EXEC CICS EXTRACT STATISTICS** command, the **EXEC CICS PERFORM STATISTICS RECORD** command, and the **CEMT PERFORM STATISTICS** command.

The options on the **EXEC CICS EXTRACT STATISTICS** command, the **EXEC CICS PERFORM STATISTICS RECORD** command, and the **CEMT PERFORM STATISTICS** command for the obsolete resource types described in this section are no longer valid. For details of what happens if you use the obsolete options, see the command documentation.

The list of resources supported by the **EXEC CICS COLLECT STATISTICS** command is now closed. All new resources introduced from CICS Transaction Server for z/OS, Version 3 Release 1 onwards are supported by the **EXEC CICS EXTRACT STATISTICS** command, which operates in the same way.

---

## Obsolete statistics types

CICS no longer provides statistics for these obsolete resource types.

No statistics types were made obsolete in CICS Transaction Server for z/OS, Version 5 Release 2.

The following changes were made in earlier releases:

*Table 7. Discontinued statistics*

Resource type	STID Symbolic name	STID Value	Copybook	Description
REQUESTMODEL	STIIIR	111	DFHIIIRDS	Statistics for request models
CORBASERVER	STIEJR	114	DFHEJRDS	Statistics for CorbaServer entries
BEAN	STIEJB	115	DFHEJBDS	Statistics for enterprise beans
JVMPOOL	STISJG	117	DFHSJGDS	Statistics for pooled JVMs
JVMPROFILE	STISJR	118	DFHSJRDS	Statistics for profiles for pooled JVMs

### The statistics formatting utility program, DFHSTUP

The obsolete BEAN, CORBASERVER, JVMPOOL, JVMPROFILE, and REQUESTMODEL resource types can no longer be specified on the IGNORE TYPE and SELECT TYPE control statements for DFHSTUP, and the following reports are no longer provided:

- CorbaServer: Resource statistics
- CorbaServer: Summary resource statistics
- Enterprise beans: Resource statistics
- Enterprise beans: Summary resource statistics
- JVM pool: Global statistics
- JVM pool: Summary global statistics
- JVM profiles: Resource statistics
- JVM profiles: Summary resource statistics
- Requestmodel: Resource statistics
- Requestmodel: Summary resource statistics

## Changed statistics types

Changes have been made to the statistics fields for these CICS statistics types. The old DSECTs are not compatible with the new DSECTs, and you must recompile application programs using the changed DSECTs.

### Statistics for private resources and application entry points

CICS now produces different SMF statistics records for private resources for applications that are deployed on platforms. A statistics record for a private resource has information about the application for which the resource was defined. The existing DSECTs for program and library resources, which are used to map the data for public resources, have corresponding new DSECTs that are used to map the data for private resources.

*Table 8. DSECTs for public and private resources*

Resource type	Statistics command keyword	Existing DSECT for public resources	New DSECT for private resources
LIBRARY resource statistics	LIBRARY	DFHLDBDS (STID value 31)	DFHLDYDS (STID value 32)
Program resource statistics	PROGRAM	DFHLDRDS (STID value 25)	DFHLPDPS (STID value 36)
PROGRAM definition resource statistics	PROGRAMDEF	DFHPGDDS (STID value 120)	DFHPGEDS (STID value 147)
JVM program resource statistics	JVMPROGRAM	DFHPGRDS (STID value 119)	DFHPGPDS (STID value 146)

When you use the **EXEC CICS PERFORM STATISTICS RECORD** command to write resource statistics, use the same resource type keyword whether the resource is public or private. If a resource is a public resource, the public DSECT is used to map its data, and if a resource is a private resource, the private DSECT is used to map its data.

When you use the **EXEC CICS EXTRACT STATISTICS** or **EXEC CICS COLLECT STATISTICS** command to request resource statistics for a specific resource of a resource type that is supported as a private resource, the command operates according to the context in which the task is running.

- If the command is issued from a public program, statistics are returned for the named public resource.

- If the command is issued from a program that is part of an application deployed on a platform, so is running with an application context, the private resources for the application are searched first for the named resource. If a private resource is not found, statistics are returned for the named public resource.
- For the **EXEC CICS EXTRACT STATISTICS** command only, you can specify a different application context to be searched for private resources. When you request statistics for a different application, if a private resource is not found for that application, no statistics are returned.

Programs that are declared as application entry points are identified by a field in the DSECTs for public and private program definitions (PROGRAMDEF statistics keyword) and JVM programs (JVMPROGRAM keyword). When interval statistics, end-of-day statistics, requested statistics, requested reset statistics, or unsolicited statistics are produced for a program definition or JVM program that is declared as an application entry point, two statistics records are written, one mapped by the DSECT for public resources, and one mapped by the DSECT for private resources. For the program statistics that are produced by the loader domain (PROGRAM keyword), application entry points are not identified, and only one private program statistics record is written.

When you use the **EXEC CICS EXTRACT STATISTICS** or **EXEC CICS COLLECT STATISTICS** command to return statistics for a specified program that is declared as an application entry point, only one statistics record is returned. If the command is issued in or for an application context, and the program was defined as a private resource for the application, the DSECT for private resources is used to format the data, even if the program has currently been promoted to a public program in order to make the application entry point available.

The statistics formatting utility program DFHSTUP produces separate reports for private resources. DFHSTUP lists programs that are defined as application entry points twice, in both the report for public program definitions or JVM programs, and the report for private program definitions or JVM programs. The sample statistics utility program, DFH0STAT, does not report any private resources or identify programs that are declared as application entry points.

## Loader domain global statistics (DFHLDGDS)

Because program load requests can now run on multiple TCBs, rather than always being single-threaded through the RO TCB, you might see an increase in the number of waits recorded in the CICS loader domain global statistics. The fields “Waiting requests” (LDGWLR) and “Requests that waited” (LDGWTDLR) count the number of loader domain requests that are currently waiting, or waited in the past, for the loader domain to complete an operation on the program on behalf of another task. A wait is recorded if a program load request has to wait because the program is being loaded by another task that is running on an open TCB. An increase in the number of waits for this reason can be expected now that CICS can carry out program load operations on open TCBs, and this increase does not imply a decrease in throughput for your applications.

## Dispatcher statistics (DFHDSGDS)

The removal of the JM, J8, and J9 TCB modes has resulted in significant changes to the dispatcher statistics provided by the DFHDSGDS copybook. Because of the extent of the changes, the previous STID value for the dispatcher statistics, 60, has been made obsolete and is replaced by a new STID value, 62. The STID symbolic name and the DSECT name are unchanged:

Table 9. Changed statistics

Resource type	STID Symbolic name	STID Value	Copybook	Description
DISPATCHER	STIDS	Was 60, Now 62	DFHDSGDS	CICS dispatcher statistics

## Other changed statistics types

Table 10. Changed statistics types

Copybook	Functional area
DFHA03DS	z/OS Communications Server global statistics
DFHA14DS	Connection resource statistics
DFHA17DS	File resource statistics
DFHDHDDS	DOCTEMPLATE resource statistics
DFHD2GDS	DB2 connection statistics
DFHD2RDS	DB2ENTRY resource statistics
DFHECGDS	EVENTBINDING global statistics
DFHEJRDS	CorbaServer resource statistics
DFHEPGDS	Event processing global statistics
DFHIIRDS	Requestmodel resource statistics
DFHISRDS	IP connection resource statistics
DFHLDBDS	LIBRARY resource statistics
DFHLDGDS	Loader domain global statistics
DFHMNGDS	Monitor global statistics
DFHMQGDS	WebSphere MQ connection statistics
DFHPIRDS	PIPELINE resource statistics
DFHPIWDS	Web service resource statistics
DFHPGDDS	Program statistics
DFHPGRDS	JVM program statistics
DFHSJGDS	JVM pool global statistics
DFHSJSDS	JVMSEVER resource statistics
DFHSMDDS	Storage manager domain subpools statistics
DFHMSDS	Storage manager global statistics
DFHSMTDS	Storage manager task subpools statistics
DFHSORDS	TCP/IP service resource statistics
DFHTQRDS	Transient data queue resource statistics
DFHTSGDS	Temporary storage global statistics
DFHWBGDS	URIMAP global statistics
DFHWBRDS	URIMAP resource statistics
DFHXMCDs	Tranclass resource statistics
DFHXMRRDS	Transaction resource statistics
DFHPIRDS	Pipeline manager statistics

Changed statistics types might increase the amount of statistics data that is written to the MVS systems management facility (SMF). To avoid any problems caused by multiple CICS regions writing increased interval statistics to the SMF at the same time, you can use the DFH\$STED sample utility program. This program varies the statistics interval occurrence time for each CICS region. For more information, see Stagger end-of-day time sample utility program (DFH\$STED) in Reference -> Utilities.

## New statistics types

New CICS statistics types are added because of new domains or because of enhancements to CICS.

Table 11. New statistics types

Copybook	Functional area
DFHECCDS	CAPTURESPEC resource statistics
DFHECGDS	EVENTBINDING global statistics
DFHECRDS	EVENTBINDING resource statistics
DFHEPGDS	Event processing global statistics
DFHEPRDS	EP adapter resource statistics
DFHLDPDS	Program loader statistics for private programs
DFHLDYDS	LIBRARY resource statistics for private LIBRARY resources
DFHMLRDS	XMLTRANSFORM resource statistics
DFHMNIDS	Identity class statistics
DFHPGDDS	PROGRAM resource definition statistics
DFHPGEDS	PROGRAM resource definition statistics for private programs
DFHPGPDS	JVM program resource statistics for private Java programs
DFHRLRDS	BUNDLE resource statistics
DFHSJSDS	JVMSERVER resource statistics
DFHW2RDS	Atom feed statistics

## New values in DFHSTIDS (statistics record identifiers)

The new DSECTs have corresponding values in the common statistics record copybook, DFHSTIDS. The revised list of the statistics record identifiers is shown in CICS statistics data section in the *CICS Customization Guide*.

The new values for CICS Transaction Server for z/OS, Version 5 Release 2 are as follows:

STILDY	32	DFHLDYDS	LIBRARY resources - private
STILDP	36	DFHLDPDS	Private Loader (Resid) id
STIPGP	146	DFHPGPDS	JVM programs - private
STIPGE	147	DFHPGEDS	Program definitions - private

The new value for CICS Transaction Server for z/OS, Version 4 Release 2 was as follows:

STIEPR	144	DFHEPRDS	EPADAPTERs (Resource) id
--------	-----	----------	--------------------------

The new values for CICS Transaction Server for z/OS, Version 4 Release 1 were as follows:

STIRLR	100	DFHRLRDS	BUNDLES (resource) id
STIW2R	110	DFHW2RDS	ATOMSERVICE (resource) id
STIMLR	113	DFHMLRDS	XMLTRANSFORM (resource) id
STISJS	116	DFHSJSDS	JVMSEVER stats (resource) id
STIPGD	120	DFHPGDDS	PROGRAMDEF stats (resource) id
STIECG	140	DFHECGDS	EVENTBINDINGS (global) id
STIECR	141	DFHECRDS	EVENTBINDINGS (resource) id
STIEPG	142	DFHEPGDS	EVENTPROCESS (global) id
STIECC	143	DFHECCDS	CAPTURESPECs (resource) id

New statistics types might increase the amount of statistics data that is written to the MVS systems management facility (SMF). To avoid any problems caused by multiple CICS regions writing increased interval statistics to the SMF at the same time, you can use the DFH\$STED sample utility program. This program varies the statistics interval occurrence time for each CICS region. For more information, see Stagger end-of-day time sample utility program (DFH\$STED) in the *CICS Operations and Utilities Guide*.

## The statistics formatting utility program, DFHSTUP

The statistics formatting utility program now formats additional statistics reports for the new statistics. You can include or exclude the new statistics reports by using these keywords on the SELECT TYPE and IGNORE TYPE parameters:

- ATOMSERVICE
- BUNDLE
- CAPTURESPEC
- EPADAPTER
- EVENTBINDING
- EVENTPROCESS
- JVMPROGRAM - now reports private as well as public resources
- JVMSEVER
- LIBRARY - now reports private as well as public resources
- PROGRAM - now reports private as well as public resources
- PROGRAMDEF - now reports private as well as public resources
- XMLTRANSFORM

DFHSTUP produces separate reports for private resources for applications that are deployed on platforms. These reports are located after the report for public resources of the same type. DFHSTUP lists programs that are defined as application entry points twice, in both the report for public program definitions or JVM programs, and the report for private program definitions or JVM programs.



---

## Chapter 16. Changes to sample programs

In each CICS release, check for changes to the samples provided to demonstrate the use of different CICS functions. New samples might be provided and existing samples modified or withdrawn. If you have custom programs or other items based on the samples, update them to reflect changes in the samples. Unless otherwise stated, sample programs are supplied in the SDFHSAMP library.

There were no changes to the sample programs in CICS TS 5.2.

The following changes were made in earlier CICS releases:

### **DFH0EPAC (COBOL) and DFH0STEP, event processing samples**

The sample custom EP adapter is provided in the COBOL language. It is shipped as source code in the CICS SDFHSAMP library, and also as a load module.

- The source code and load module are named DFH0EPAC.
- Group DFH\$EPAG is defined in DFHCURDS.DATA. The group defines program DFH0EPAC and transaction ID EPAT to include in your event binding to run the DFH0EPAC program.
- The sample program DFH0EPAC formats most data types. However, as a COBOL language sample, DFH0EPAC cannot format binary floating point (BFP) or decimal floating point (DFP) items; in this case, DFH0EPAC fills the data area with asterisks (\*).

The sample custom EP adapter demonstrates how a custom EP adapter handles synchronous and asynchronous emission events. This is achieved by honoring the EPAP-RECOVER flag setting in the DFHEP.ADAPTPARM container by checking whether the temporary storage queue is recoverable or not.

Your custom EP adapter programs must now also honor the EPAP\_RECOVER flag in the DFHEP.ADAPTPARM container to support synchronous event emission.

DFH0STEP is changed to collect and print EPADAPTER statistics and to support the new command options for the **INQUIRE CAPTURESPEC** command.

The DFH0EPAC sample has been changed to set the default CICS temporary storage queue (TSQ) for system events to *userid.SYSTEM*. Your custom EP adapter programs must also be changed to define a default TSQ for system events.

### **DFH\$APDT, adapter tracking sample**

A new sample task-related user exit (TRUE) program, DFH\$APDT, has been added. You can use the DFH\$APDT sample TRUE to learn how to use adapter data fields for transaction tracking.

### **DFH\$DB2, JDBC sample group**

The JDBC samples CICSDataSource, CICSDataSourcePublish, CICSDataSourceRetract and CICSjdbcDataSource samples have been removed from zFS, and the corresponding resource definitions removed from the sample group DFH\$DB2.

## **DFH\$DCTD, DFH\$DCTR, and DFH\$DCTS, destination control table samples**

The sample programs associated with the DFHDCT macro, DFH\$DCTD, DFH\$DCTR, and DFH\$DCTS, are no longer supplied by CICS, because the DFHDCT macro has been removed.

## **DFH\$EJB and DFH\$EJB2 samples**

The EJB Hello World sample is removed from group DFH\$EJB as part of the removal of support for EJB. The EJB Bank Account sample is removed from group DFH\$EJB2 for the same reason.

## **DFH\$IIOP**

The IIOP Banking sample is removed from group DFH\$IIOP as part of the removal for IIOP support.

## **DFH\$PCTA, XPCTA global user exit program sample**

This sample program tests whether an abend was caused by the application program trying to overwrite CICS-key storage while running in user key. It is now updated to include the ETDSA, GCDSA, and GUDSA.

## **DFHWLP JVM server samples**

DFHWLP is a sample JVMSERVER resource definition that is in a group called DFH\$WLP. It points to a sample JVM profile called DFHWLP that configures a JVM server to provide a web container for running servlets and JSP pages.

## **DFH\$WUUR and DFH\$WUTC, CICS system management client API samples**

DFH\$WUUR and DFH\$WUTC are new sample resource definitions to help you set up the CICS system management client API.

DFH\$WUUR is a sample URI Map definition. The URI map uses transaction CWWU and calls program DFHWBA to analyze the CICS web request. DFH\$WUTC is sample TCP/IP service definition.

The sample definitions are supplied in group DFH\$WU. You must install definitions like these before you can use the API.

## **DFH\$W2S1 (C) and DFH0W2F1 (COBOL), Atom feed samples**

The C language sample service routine, DFH\$W2S1, shows you how to respond to requests for Atom entries by reading the parameters in the DFHATOMPARMS container, updating the character containers, and updating and returning the DFHATOMPARMS container.

DFH0W2F1 is a COBOL sample service routine that shows you how to handle POST, PUT, and DELETE requests for Atom collections. DFH0W2F1 is an updated version of the sample service routine DFH0W2FA that was provided in SupportPac CA8K. CICS provides sample URIMAP and ATOMSERVICE resources in the DFH\$WEB2 group that you can use to run DFH0W2F1. The resources are both named DFH\$W2P1.

## **DFH\$XISL, IPIC sample**

A new sample global user exit program, DFH\$XISL, has been added. You can use the XISQLCL sample global user exit program, DFH\$XISL, to control the queueing of START NOCHECK requests that are scheduled for an IPIC connection.

## **FILEA sample application programs for assembler language**

The following sample application programs for assembler language are changed to AMODE(64) and use relative addressing:

- DFH\$AALL
- DFH\$ABRW
- DFH\$ACOM
- DFH\$AMNU
- DFH\$AREN

The following sample application program for assembler language is changed to use relative addressing, but is AMODE(31) because it demonstrates the use of the HANDLE CONDITION LABEL command:

- DFH\$AREP



---

## Chapter 17. Changes to problem determination

CICS provides information to help you diagnose problems relating to new functions.

Part 5, “Changes to CICS messages and codes,” on page 317 lists messages and abend codes that have been removed, changed, and added for CICS Transaction Server for z/OS, Version 5 Release 2.

There were no other changes to problem determination in CICS Transaction Server for z/OS, Version 5 Release 2.

The following changes were made in earlier releases:

### New component codes

The following component codes are added to support new functions in CICS Transaction Server:

Component code	Component keyword	Description
EC	None	Event capture domain
EP	EVENTPROC	Event processing domain
ML	None	Markup language domain
MP	MANAGEDPLAT	Managed platform domain
RL	RESLIFEMGR	Resource life cycle domain
RS	REGIONSTAT	Region status domain
WU	WEBRESTMGR	CICS Management Client Interface (CMCI) domain
W2	WEB2	Web 2.0 domain

You can use the component codes to specify the following options:

- The level of standard and special tracing in each component. You specify standard and special tracing by any of the following methods:
  - The CETR transaction.
  - The **STNTRxx** and **SPCTRxx** system initialization parameters.
  - The **INQUIRE TRACETYPE** and **SET TRACETYPE** system programming commands. If a component keyword is present, you can use it instead of the component codes in these commands.
- The areas of CICS storage that you want to be included in a formatted dump and the amount of data that you want formatted.
- The trace entries that you want to be included in a formatted dump and in the output from the trace utility program.

On output, CICS uses the component codes to identify messages and trace entries.

## Changes to the global trap exit DFHTRAP

The global trap exit DFHTRAP can be invoked when the CICS trace domain is called to write a trace entry. DFHTRAP is intended for use only with the guidance of IBM Service personnel.

DFHTRAP now runs in AMODE(64). It includes new fields that you use to trace data in 64-bit storage (above the bar). The DFHTRAP work area is now allocated in 64-bit storage.

## Changes to HTTP status codes for Atom feed support

When serving Atom feeds, CICS issues some new HTTP status codes, and some status codes that CICS previously issued are now issued for new reasons. The new status codes that are issued by CICS are as follows:

Status code	Explanation
201 Created	Issued in response to a request with the POST method. A new object has been created. The new URL for the object is returned in the Location header.
409 Conflict	When issued in response to a request with the POST method, this status code means that an existing object already exists with the specified URL, so the new object is not created.

The following status codes were previously issued by CICS, but are now issued for new reasons:

Status code	Explanation
400 Bad Request	When issued in response to a request with the PUT method, this status code might mean that a PUT request without an If-Match header was received. A client that wants to update an object without knowing the current entity tag must specify If-Match: *. The status code is also issued for a markup or data problem in the Atom entry submitted by the Web client for a POST or PUT request.
403 Forbidden	Now issued when the current user is not authorized to access one of the following: <ul style="list-style-type: none"><li>• The alias transaction specified in the TRANSACTION attribute of the URIMAP resource definition</li><li>• The ATOMSERVICE resource definition</li><li>• The CICS resource specified in the ATOMSERVICE resource definition</li><li>• Any CICS resource or command accessed by a program that is specified in the ATOMSERVICE resource definition</li></ul>
404 Not Found	Now issued when any of the following items cannot be found: <ul style="list-style-type: none"><li>• The ATOMSERVICE resource definition specified in the URIMAP resource definition</li><li>• The CICS resource specified in the Atom configuration file</li><li>• The selected record in the CICS resource</li></ul>
412 Precondition Failed	Now issued in response to a request with the PUT method, when the entity tag value on the If-Match header does not match the entity tag for the object being updated. The current contents of the object are returned in the response body, and the Etag header contains the new entity tag value.

Status code	Explanation
500 Resource Error	Now issued for some errors involving a resource for an Atom feed, such as an error producing XML markup from a resource record for use as Atom entry content.
503 Service Unavailable	Now issued when either a requested ATOMSERVICE resource definition, or the CICS resource that it references, is disabled.





---

## Chapter 18. Changes to security

When you upgrade to CICS Transaction Server for z/OS, Version 5 Release 2, note these changes to security.

### Security for CICS bundles

For resources that are dynamically created by CICS bundles, no additional CICS command security checks and resource security checks take place for those resource types, either when the resources are dynamically created at bundle installation time, or when you manipulate the resources by making changes to the CICS bundle. You need authority only to perform the actions on the CICS bundle, or for bundles that are installed with applications and platforms, to perform the actions on the application or platform with which the CICS bundle was deployed. However, CICS command security and resource security for the individual resource types do apply when you inquire on the dynamically created resources, or if you manipulate the dynamically created resources directly.

If you used CICS bundles in earlier CICS releases, check the security permissions that you gave to users for those bundles. Depending on how you set up security for CICS bundles, users with authority to act on individual CICS bundles might now be able to act on new or existing resources that are dynamically created as part of the installation of a bundle. Ensure that the levels of authority for BUNDLE resources are still appropriate.

### Permission to make applications and CICS bundles available or unavailable

Operators with UPDATE access for the CLOUD.APPLICATION.*context* security profile now have permission for the new actions to make applications that are deployed on platforms available or unavailable to users, which is required in addition to enabling or disabling them. In releases before CICS TS 5.2, the action of enabling or disabling an application also made it available or unavailable to users, so the new permission is still appropriate for the same operators.

The same situation applies to operators with UPDATE access for a security profile that specifies the BUNDLE resource type and the resource name \$\*, as described in Security for platforms and applications in Administering. These operators can make BUNDLE resources that are created for platforms and applications available and unavailable.

Stand-alone CICS bundles need to be made available or unavailable only if they contain application entry points. Operators with UPDATE access for the security profile for a stand-alone CICS bundle, which specifies the BUNDLE resource type and the name of the BUNDLE resource, can make the resource available or unavailable.

### Security for programs declared as application entry points

If you apply security measures to individual PROGRAM resources, for applications that are deployed on platforms, secure the programs that are declared as application entry points, but do not secure other programs in the applications. The security settings that you specify for a program that is part of an application

| deployed on a platform apply to both public and private programs, and do not  
| take into account the version of the application. Programs that are declared as an  
| application entry point must have a unique PROGRAM resource name in your  
| environment. However, if you secure programs that run at a lower level in the  
| application, programs with the same names might be running in different  
| applications, which can lead to unforeseen consequences. In this situation, a user  
| might have permission to access a program that is declared as an application entry  
| point, but not have permission to access a program that runs at a lower level in  
| the application, because the security settings from another instance of the program  
| name are in effect. Consider the security measures that you apply to a program  
| that is declared as an application entry point program, as applying to the whole  
| application.

## **Integrated support for SAML**

In CICS TS for z/OS, Version 4.2 and CICS TS for z/OS, Version 5.1, support for Security Assertion Markup Language (SAML) was provided in the CICS Transaction Server for z/OS Feature Pack for Security Token Extensions. The functions of that feature pack are now incorporated into CICS itself. You cannot use the feature pack with CICS Version 5.2.

In addition, the following functions are added:

- Support for using a SAML token in a requester application
- Support for adding attributes to a validated SAML token, for use in a requester application
- Support for signing modified SAML tokens
- Support for using the transaction channel for SAML containers to enable verified SAML information to be available to the whole application without the need to restructure the application.
- Support for configuring the clock skew time to allow flexibility in the time validity of SAML tokens

The SAML output containers have been enhanced with additional information extracted from the SAML token.

The SAML IVP has been enhanced to support easier validation of customer defined tokens.

## **Support for Kerberos**

Previously, support for Kerberos tokens was provided remotely by using a web service. You can now validate a Kerberos token with a local external security manager (ESM) by using the CICS API. For more information, see VERIFY TOKEN. If your ESM is RACF, support is provided for Kerberos Version 5 and Generic Security Services. For the Kerberos support level of other ESMs, refer to their documentation.

Support is provided for validating Kerberos tokens in inbound web service requests. Optionally, the target application can also be set to run under the user ID associated with the client principal in the Kerberos token. To use Kerberos token validation, set the mode of the <authentication> element to the new value basic-kerberos. For more information, see The <authentication> attribute.

## Extended support for cryptographic standards

The enhancements to support NIST SP800-131A compliant cipher suites and certificates, which were supplied in APAR PM97207 for CICS TS for z/OS Version 5.1 are now incorporated into CICS itself. For more information, see Making your CICS TS system conformant with NIST SP800-131A.

---

## Additions to CICS RACF category 1 transactions

The list of category 1 transactions has some new CICS internal system transactions. These transactions must be defined to your external security manager, and the CICS region user ID must be authorized to use them, so that CICS can initialize successfully when it is running with security enabled (SEC=YES).

For a full list of all the CICS category 1 transactions, see Category 1 transactions. Also see the DFH\$CAT1 CLIST, supplied in the SDFHSAMP library.

The new category 1 transactions are as follows:

- CEPD
- CEPF
- CEPM
- CFCR
- CISB
- CISM
- CISP
- CISQ
- CISU
- CISX
- CIS1
- CIS4
- CJLR
- CJSR
- CJSL
- CRLR
- CRST

---

## Changes to command and resource security

New resource types, their resource identifiers, and associated commands are subject to command security checking and resource security checking.

No new resource types were added in CICS Transaction Server for z/OS, Version 5 Release 2.

The following changes were made in earlier releases:

### Command security

Command security applies if CMDSEC(YES) is specified for the CICS region.

The following new CICS resource identifiers and associated commands are subject to command security checking:

Table 12. New CICS resource identifiers subject to command security checking

Resource identifier	Related CICS commands
EPADAPTERSET	<b>INQUIRE EPADAPTERSET</b> <b>SET EPADAPTERSET</b>
EPADAPTINSET	<b>INQUIRE EPADAPTINSET</b>

The new resource identifiers can be specified as RESID values when you specify the resource type SPCOMMAND on the QUERY SECURITY command.

The existing resource identifier SECURITY for defining resource profiles to RACF now includes the new EXEC CICS and CEMT PERFORM SSL REBUILD commands. They are subject to command security checking with RESOURCE\_TYPE(SEcurity) and ACCESS (UPDATE).

## Resource security

Resource security applies if RESSEC(YES) is specified for the CICS region.

The following new resource types are subject to CICS resource level security checking:

Table 13. New CICS resource types subject to resource security checking

Resource type	RACF-provided resource classes	Profile name
EPADAPTERSET	RCICSRES, WCICSRES	EPADAPTERSET.name

The new resource identifiers can be specified as RESTYPE values on the QUERY SECURITY command.

## Security for platforms and applications

You can secure resources for applications that are deployed on platforms by creating RACF security profiles for CICSplex SM to cover platforms and applications in a CICSplex.

Security for platforms and applications is set up in a similar way to security for other CICSplex SM components. You control access to a specific set of views (and their associated action commands) by identifying the set in a security profile. With these security profiles, you can give users authority to install, enable or disable, make available or unavailable, inquire on, or discard platforms and applications, and ensure that unauthorized users cannot create and administer these resources.

When you give a user authority to perform an action on a platform or application, you also give them authority to perform the same action on the dynamically generated resources for the platform or application. For example, a user who has authority to enable an application also has authority to enable the CICS bundles for the application that were installed in CICS regions in all the platforms in the CICSplex. CICS command and resource security checks, and simulated CICS security checking in CICSplex SM, are not carried out when you operate on CICS bundles through an application or platform.

You can secure a platform and its deployed applications by setting up security profiles with the following function and type combinations:

### **CLOUD.DEF.context**

This security profile covers the PLATDEF and APPLDEF resource tables,

which contain the definitions for platforms and applications. *context* is the specific or generic name of the CICSplex that is covered by the security profile.

Users with UPDATE access for this security profile can create, update, and remove definitions for platforms and applications in the CICSplex SM data repository. Users with READ access can view those definitions in the CICSplex SM data repository.

#### **CLOUD.PLATFORM.*context***

This security profile covers the installation of PLATDEF resources and operations on PLATFORM resources. It also allows users to view management parts (MGMTPART resources). *context* is the specific or generic name of the CICSplex that is covered by the security profile.

Users with ALTER access for this security profile can install platforms in the CICSplex and discard them. (To install a platform, users also need READ access for the CLOUD.DEF profile that covers the PLATDEF resource.) Users with UPDATE access can enable and disable platforms. Users with UPDATE access can also add CICS regions to region types in the platform and remove CICS regions from region types in the platform. Users with READ access can view PLATFORM resources and MGMTPART resources. These permissions apply for all platforms that exist in the CICSplex.

#### **CLOUD.APPLICATION.*context***

This security profile covers the installation of APPLDEF resources and operations on APPLCTN resources. *context* is the specific or generic name of the CICSplex that is covered by the security profile.

Users with ALTER access for this security profile can install applications in the CICSplex and discard them. (To install an application, users also need READ access for the CLOUD.DEF profile that covers the APPLDEF resource.) Users with UPDATE access can enable and disable applications and make them available or unavailable. Users with READ access can view APPLCTN resources. These permissions apply for all applications in all platforms that exist in the CICSplex. If you require different security permissions for certain applications, use a different CICSplex to host the platform where you deploy the application.

**Note:** These security profiles are only checked in the maintenance point CMAS. Security checks are reported by message EYUCR0009I in the EYULOG of the maintenance point CMAS. To receive message EYUCR0009I for violations you must set the CICSplex SM system parameter (EYUPARM) **SECLOGMSG** to YES. For more information about **SECLOGMSG**, see CICSplex SM system parameters in Installing.

Although the CLOUD security profiles cover actions on the dynamically generated resources for the platform or application, users may still carry out a limited set of actions directly on individual resources in the CICS regions where they are installed. CICS command and resource security checks, and simulated CICS security checking in CICSplex SM, do apply when you perform an action directly on an individual CICS bundle, or a resource defined in a CICS bundle, that was created when you installed a platform or application.

If you apply security measures to individual PROGRAM resources, for applications that are deployed on platforms, secure the programs that are declared as application entry points, but do not secure other programs in the applications. The security settings that you specify for a program that is part of an application

deployed on a platform apply to both public and private programs, and do not take into account the version of the application. Programs that are declared as an application entry point must have a unique PROGRAM resource name in your environment. However, if you secure programs that run at a lower level in the application, programs with the same names might be running in different applications, which can lead to unforeseen consequences. In this situation, a user might have permission to access a program that is declared as an application entry point, but not have permission to access a program that runs at a lower level in the application, because the security settings from another instance of the program name are in effect. Consider the security measures that you apply to a program that is declared as an application entry point program, as applying to the whole application.

If you used CICS bundles in earlier CICS releases, check the security permissions that you gave to users for those bundles. Depending on the way in which you set up security for CICS bundles, users with authority to take actions on individual CICS bundles might now be able to act on resources that are dynamically created as part of the installation of a bundle. Ensure that the levels of authority for BUNDLE resources are still appropriate.

---

## Security updates to monitor RACF Event Notifications (ENF)

CICS now monitors for RACF type 71 Event Notifications (ENFs) that are sent when specific RACF commands affect the group authorization of a user. Notification of a change to the user ID overrides any setting that is specified in the **USRDELAY** system initialization parameter. Therefore, review your **USRDELAY** settings.

- For z/OS 1.11 or later, these RACF commands are **ALTUSER** with the REVOKE option, **CONNECT**, and **REMOVE**.
- For z/OS 1.13 with the PTF for APAR OA39486 applied, or later, these RACF commands are **ALTUSER** with the REVOKE option, **CONNECT**, **REMOVE**, **DELGROUP** and **DELUSER**.

This change does not apply to a user ID that is signed on to a local region (for example, a TOR that uses the CESN transaction to sign on). In this situation, CICS is not notified of an ENF 71 event code.

If you do not want CICS to monitor for RACF type 71 ENF events, that is, how CICS behaved in releases before CICS TS for z/OS, Version 4.1, you can use the new **RACFSYNC** system initialization parameter to specify this behavior. Use this parameter only under direction from IBM Service, and only as an aid to migration.

**RACFSYNC={YES|NO}**

RACF sends a type 71 ENF signal to listeners when a **CONNECT**, **REMOVE**, or **REVOKE** command changes a user's resource authorization. When CICS receives a type 71 ENF event for a user ID, all cached user tokens for the user ID are invalidated, irrespective of the setting of the **USRDELAY** parameter. Subsequent requests from that user ID force a full RACF RACROUTE VERIFY request, which results in a refresh of the user's authorization level. User tokens for tasks that are currently running are not affected.

**Note:** Specify the **RACFSYNC=NO** parameter only under direction from IBM Service.

**YES** CICS listens for type 71 ENF events.

**NO** CICS does not listen for type 71 ENF events.



**Restrictions:** You can specify the **RACFSYNC** parameter only in the system initialization table (SIT), the **PARM** parameter of the **EXEC PGM=DFHSIP** statement, or the **SYSIN** data set.

---

## Changes to the EXEC CICS VERIFY PASSWORD and EXEC CICS VERIFY PHRASE commands

When you specify the new **SECVFYFREQ** system initialization parameter for the CICS region, CICS ensures that users who log on to CICS by a method that uses password verification, including the **EXEC CICS VERIFY PASSWORD** or **EXEC CICS VERIFY PHRASE** command, still have their records updated in RACF at least once a day.

The **RACROUTE REQUEST=EXTRACT** macro does not make RACF record the login as the last access for the user ID, or write user statistics for the user ID. User IDs that are only used with login processes involving password verification can therefore appear to be unused, and could be revoked.

If you specify the system initialization parameter **SECVFYFREQ=USRDELAY** for the CICS region, CICS enforces a full verification request at least once a day for each user ID that is used to log on to the CICS region. The full verification request using the **RACROUTE REQUEST=VERIFYX** macro makes RACF record the date and time of last access for the user ID, and write user statistics. The behavior of your applications is the same whether or not you specify the **SECVFYFREQ** system initialization parameter. CICS checks the user ID at user login and replaces the password verification request with a full verification request when necessary.

Because the full verification request has a higher processor cost and response time than password verification, you might notice a slight performance impact when you specify the **SECVFYFREQ** system initialization parameter. The extent of the performance impact depends on your setting for the **USRDELAY** system initialization parameter for the CICS region. When you specify **SECVFYFREQ**, CICS makes a full verification request for a user ID when the user logs on after the **USRDELAY** interval has expired. CICS also applies a maximum limit of one day between full verification requests at user login. If your **USRDELAY** parameter is set to less than 1440 minutes (1 day), a full verification request takes place at user login more frequently than once a day.

---

## Upgrading DB2 security support

If you use RACF for some or all of the security checking in your DB2 address space, the circumstances in which CICS passes the RACF access control environment element (ACEE) to DB2 have changed.

In previous releases, the ACEE was passed to DB2 only when **AUTHTYPE(USERID)** or **AUTHTYPE(GROUP)** was specified for a **DB2CONN** or a **DB2ENTRY** resource. This behavior is unchanged, but, in addition, CICS now passes the address of the ACEE to DB2 when you specify **AUTHTYPE(SIGN)**, and the **SIGNID** attribute specifies the CICS region user ID.

This change makes it possible for DB2 to use RACF security when you use the CICS region user ID to control access to DB2. However, you must verify that your existing resource definitions do not introduce this changed behavior unexpectedly. You must also check any DB2 signon exits to ensure they operate as expected when the CICS region ACEE is passed to DB2.





---

## Part 2. Upgrading CICS Transaction Server

To upgrade your CICS regions to CICS Transaction Server for z/OS, Version 5 Release 2, carry out the tasks described here. There are some general upgrading tasks which you must always perform. There are also upgrading tasks for some specific functional areas where there is a need for special considerations.



---

## Chapter 19. Upgrade procedures for all CICS regions

Complete these tasks when you upgrade any CICS Transaction Server region to CICS Transaction Server for z/OS, Version 5 Release 2.

**Important:** Before you upgrade you must install the CICS TS for z/OS V5.2 - activation module or CICS TS for z/OS Value Unit Edition V5.2 - activation module for the version of CICS that you are going to use.

You must also add the SDFHLIC or SDFHVUE library in the STEPLIB of the CICS TS JCL. If you use coupling facility data table servers, temporary storage servers, region status servers, or named counter servers, you must also add the SDFHLIC or SDFHVUE library to the STEPLIB of the JCL for each of the servers.

---

### Redefining and initializing the local and global catalogs

When you upgrade to a new CICS release, delete, redefine, and initialize the CICS local catalog and global catalog.

#### Procedure

1. Delete your existing local catalog and global catalog.
2. Define and initialize new local and global catalogs, following the instructions in the *CICS System Definition Guide*. When you initialize the catalogs, make sure that you use the CICS Transaction Server for z/OS, Version 5 Release 2 versions of the DFHRMUTL and DFHCCUTL utility programs and the sample jobs.
3. When you start the CICS region for the first time after upgrading, make sure that it is an initial start with the START=INITIAL parameter.

---

### Enabling z/OS conversion services

To obtain the benefits of z/OS conversion services for data conversion, perhaps because your system requires support for the conversion of UTF-8 or UTF-16 data to EBCDIC, you must enable the z/OS conversion services and install a conversion image that specifies the conversions that you want CICS to perform.

For the instructions to set up and configure conversions supported through the operating system services, see *z/OS Unicode Services User's Guide and Reference*.

If z/OS conversion services are not enabled, CICS issues a message. If such a message is issued when starting a CICS region that is expected to use the z/OS conversion services, an IPL is necessary to enable these services.

If you do not need the z/OS conversion services, you can suppress that message.

To discover the status of z/OS conversion services after an IPL, use one of the following commands from an MVS console:

- D UNI

This command shows whether z/OS conversion services were enabled.

- D UNI,ALL

This command shows whether z/OS conversion services were enabled and which conversion the system supports.

If you want to enter the command from SDSF, add a / to the beginning of the command.

---

## Upgrading the CSD for CICS-supplied and other IBM-supplied resource definitions

Upgrade the CICS-supplied resource definitions using the UPGRADE function of the CSD utility program DFHCSDUP. If you have resource definitions in your CSD that support other IBM products, such as z/OS, you might need to upgrade these also.

### About this task

If you need to share your upgraded CSD with different CICS releases, see “CSD compatibility between different CICS releases” on page 205.

### Procedure

1. Run the DFHCSDUP utility program, specifying the UPGRADE command, to upgrade the CICS-supplied definitions in your CSD to the latest CICS TS level. You can create a new CSD using the DFHCSDUP INITIALIZE command. For information about running DFHCSDUP with the UPGRADE command, see the *CICS Operations and Utilities Guide*. To help estimate the space you need in your CSD for definition records, see the *CICS System Definition Guide*.
2. If you have resource definitions in your CSD that support other IBM products, upgrade these as required. For example, if your Language Environment resource definitions are not at the correct z/OS level, you should delete and replace the CSD group containing these. The Language Environment resource definitions are in the SCEESAMP library in member CEECCSD. “Sample job for additional CSD modification” has an example job to delete and replace the CSD group containing these.

### Sample job for additional CSD modification

If you need to upgrade the Language Environment resource definitions in your CSD, you can use a job like this.

```

//JOBNAME JOB 1,userid,
//      NOTIFY=userid,CLASS=n,MSGLEVEL=(n,n),MSGCLASS=n
/*JOBPARM SYSAFF=sysid
/* Remove Old Language Environment group
//CSDUP1 EXEC PGM=DFHCSDUP,REGION=2M,PARM='CSD(READWRITE) '
//STEPLIB DD DSN=CICSTS52.CICS.SDFHLOAD,DISP=SHR
//DFHCSD DD DSN=CICSTS52.CICSHURS.DFHCSD,DISP=SHR
//SYSPRINT DD SYSOUT=*
//SYSABOUT DD SYSOUT=*
//SYSABEND DD SYSOUT=*
//SYSUDUMP DD SYSOUT=*
//SYSIN DD *
DELETE GROUP(CEE)
/*
/*
//CSDUP2 EXEC PGM=DFHCSDUP,REGION=2M,PARM='CSD(READWRITE) '
//STEPLIB DD DSN=CICSTS52.CICS.SDFHLOAD,DISP=SHR
//DFHCSD DD DSN=CICSTS52.CICSHURS.DFHCSD,DISP=SHR
//SYSPRINT DD SYSOUT=*
//SYSABOUT DD SYSOUT=*
//SYSABEND DD SYSOUT=*
//SYSUDUMP DD SYSOUT=*
//SYSIN DD DSN=SYS1.ZOS113.SCEESAMP(CEECCSD),DISP=SHR
/*
//

```

Figure 1. Upgrading Language Environment resource definitions

---

## Upgrading user-modified CICS-supplied resource definitions

When you run the UPGRADE function of the CSD utility program DFHCSDUP, ensure that you manually upgrade any CICS-supplied definitions that you have modified in earlier releases.

### About this task

It is important to upgrade your modified definitions to ensure that they are defined correctly with nondefault values for attributes that are new. If you fail to upgrade modified definitions, CICS assigns default values to any new attributes, and these might be inappropriate for CICS-supplied resource definitions.

### Procedure

- If you are not sure whether your CSD contains any modified CICS-supplied definitions, use the DFHCSDUP SCAN command to compare the CICS-supplied resource definitions with any user-modified versions. The DFHCSDUP SCAN command searches for the CICS-supplied version of a specified resource name of a specific resource type and compares it with any other resource definition of the same name and type. DFHCSDUP reports any differences it finds between the CICS-supplied definition and a user-modified version. If you have copied and changed the name of a CICS-supplied definition, the SCAN command enables you to specify the changed name as an alias.
- The safest way to upgrade your definitions is to copy the upgraded CICS-supplied definitions and reapply your modifications. This action is necessary because the UPGRADE command does not operate on your own groups or on CICS groups that you have copied.
- If the CICS region uses CICSplex SM, manually upgrade any of the dynamically created CICSplex SM resource definitions that you modified in your previous

release, using the equivalents in Version 5.2. The dynamically created resource definitions and their attributes are in the following members of the SEYUSAMP sample library:

- EYU\$CDEF contains the default resource definitions for a CMAS.
- EYU\$MDEF contains the default resource definitions for a MAS.
- EYU\$WDEF contains the default resource definitions for a WUI server.

---

## Upgrading copies of CICS-supplied resource definitions

If you have made copies of CICS-supplied resource definitions, you might need to change your copies to match the changes that have been made to the supplied definitions for this release. To help you, member DFH\$CSDU in library SDFHSAMP contains ALTER commands that you can apply using the CSD utility program DFHCSDUP.

### Procedure

1. Review your resource definitions to determine if you have copied any CICS-supplied definitions.
2. Review DFH\$CSDU to determine if the changes that it contains should apply to your resource definitions.
3. Make any necessary changes to DFH\$CSDU. It is advisable to make a copy of DFH\$CSDU and apply any changes to the copy.
4. Run DFHCSDUP using your modified version of DFH\$CSDU as input. As supplied, the ALTER commands in DFH\$CSDU specify GROUP(\*), which means that DFHCSDUP attempts to change resources in the CICS-supplied groups. This action is not permitted and results in message DFH5151. You can ignore this message.

### Example

Program DFHD2EDF is now defined as CONCURRENCY(THREADSAFE). Therefore, DFH\$CSDU contains the following command:

```
ALTER PROGRAM(DFHD2EDF) GROUP(*) CONCURRENCY(THREADSAFE)
```

When you run DFHCSDUP, the attribute is added to the definitions of program DFHD2EDF in all groups. Other attributes not mentioned in DFH\$CSDU are unchanged.

---

## DSA size limits

It is not advisable to set the size of individual dynamic storage areas (DSAs), and usually it is not necessary. However, it is possible to set the size of some DSAs by using the **CDSASZE**, **UDSASZE**, **RDSASZE**, **ECDSASZE**, **EUDSASZE**, **ESDSASZE**, and **ERDSASZE** system initialization parameters.

For example, **CDSASZE** sets the size of the CICS dynamic storage area (CDSA), and **ECDSASZE** specifies the size of the extended CICS dynamic storage area (ECDSA). The default value for these parameters is 0, indicating that the size of the DSA can change dynamically. If you specify a nonzero value, the DSA size is fixed.

If you specify DSA size values that in combination do not allow sufficient space for the remaining DSAs, CICS fails to initialize.

- The limit on the storage available for the DSAs in 24-bit storage (below 16 MB) is specified by the **DSALIM** system initialization parameter. You must allow at least 256K for each DSA in 24-bit storage for which you have not set a size.
- The limit on the storage available for the DSAs in 31-bit storage (above 16 MB but below 2 GB) is specified by the **EDSALIM** system initialization parameter. You must allow at least 1 MB for each DSA in 31-bit storage for which you have not set a size.

You cannot set the size of individual DSAs in 64-bit storage; that is, in the above-the-bar DSA (GDSA).

## CSD compatibility between different CICS releases

You can share the CICS system definition data set (CSD) between different CICS releases by using the appropriate compatibility groups.

Most releases of CICS change the CICS-supplied groups of resource definitions that are included in the DFHLIST group list. The old versions of the CICS resource definitions are retained in compatibility groups. If you share the CSD between different CICS releases, these compatibility groups are needed to support earlier releases.

After you upgrade a CSD, if you plan to share the CSD with earlier releases of CICS, include the appropriate DFHCOMP $x$  compatibility groups in your startup group list. Table 14 shows you which DFHCOMP $x$  groups to include for each earlier release.

Do not attempt to share a CSD with a CICS region that is running at a higher release level than the CSD.

You must install the compatibility groups in the correct order, as shown in the table. For example, to run a CICS TS 4.1 region with a CSD that is upgraded to CICS TS 5.2, add the DFHCOMPG compatibility group, followed by the DFHCOMPF compatibility group, followed by the DFHCOMPE compatibility group, to the end of your group list.

Table 14. Required compatibility groups for earlier releases of CICS

	CICS TS 5.2 CSD	CICS TS 5.1 CSD	CICS TS 4.2 CSD	CICS TS 4.1 CSD	CICS TS 3.2 CSD	CICS TS 3.1 CSD
Shared with CICS TS 5.2	None	Do not share	Do not share	Do not share	Do not share	Do not share
Shared with CICS TS 5.1	DFHCOMPG	None	Do not share	Do not share	Do not share	Do not share
Shared with CICS TS 4.2	DFHCOMPG DFHCOMPF	DFHCOMPF	None	Do not share	Do not share	Do not share
Shared with CICS TS 4.1	DFHCOMPG DFHCOMPF DFHCOMPE	DFHCOMPF DFHCOMPE	DFHCOMPE	None	Do not share	Do not share
Shared with CICS TS 3.2	DFHCOMPG DFHCOMPF DFHCOMPE DFHCOMPD	DFHCOMPF DFHCOMPE DFHCOMPD	DFHCOMPE DFHCOMPD	DFHCOMPD	None	Do not share

Table 14. Required compatibility groups for earlier releases of CICS (continued)

	CICS TS 5.2 CSD	CICS TS 5.1 CSD	CICS TS 4.2 CSD	CICS TS 4.1 CSD	CICS TS 3.2 CSD	CICS TS 3.1 CSD
Shared with CICS TS 3.1	DFHCOMPG DFHCOMPF DFHCOMPE DFHCOMPD DFHCOMPC	DFHCOMPF DFHCOMPE DFHCOMPD DFHCOMPC	DFHCOMPE DFHCOMPD DFHCOMPC	DFHCOMPD DFHCOMPC	DFHCOMPC	None

## Compatibility group DFHCOMPG

Group DFHCOMPG is required for compatibility with CICS Transaction Server for z/OS, Version 5 Release 1.

Table 15. Contents of compatibility group DFHCOMPG

Resource type	Name
PROGRAM	DFHPGADX DFHPGAHX DFHPGALX DFHPGAOX DFHPIEP

## Compatibility group DFHCOMPF

Group DFHCOMPF is required for compatibility with CICS Transaction Server for z/OS, Version 4 Release 2.

Table 16. Contents of compatibility group DFHCOMPF

Resource type	Name
FILE	DFHADEM
MAPSET	DFHADMS
PROFILE	DFHCICSI



Table 16. Contents of compatibility group DFHCOMPF (continued)

Resource type	Name
PROGRAM	DFHADDRM
	DFHADJR
	DFHADWB0
	DFHADWM0
	DFHADWM1
	DFHADWM2
	DFHADWM3
	DFHADWM4
	DFHADWM5
	DFHADWM6
	DFHADWT0
	DFHADWT1
	DFHADWT2
	DFHADWT3
	DFHADWT4
	DFHADWT5
	DFHCHS
	DFHDLLOD
	DFHD2EDF
	DFHEDFX
	DFHEIGDS
	DFHEITAB
	DFHEITBS
	DFHEITSZ
	DFHEJDNX
	DFHEJEP
	DFHEJITL
	DFHIIRRS
	DFHJVCVT
	DFHLETRU
	DFHPIVAL
	DFHSJGC
	DFHSJPI
	DFHSMTAB
	DFHXOPUS
	DFJCICS
	DFJCICSB
	DFJCZDTC
	DFJDESN
	DFJIIRP
	DFJIIRQ
	DFJ1ESN
	DFJ1ICS
	DFJ1ICSB
	DFJ1ZDTC

Table 16. Contents of compatibility group DFHCOMPF (continued)

Resource type	Name
TRANSACTION	CBAM
	CDFS
	CEHP
	CEHS
	CEJR
	CEMT
	CEOT
	CESF
	CESL
	CESN
	CEST
	CETR
	CIEP
	CIRP
	CIRR
	CJGC
	CJPI
	CLQ2
	CLR2
	CLS2
	CLS3
	CLS4
	CMPX
	CMSG
	CPMI
	CQPI
	CQPO
	CREA
	CREC
	CRSQ
	CRSR
	CRSY
	CRTE
	CSAC
	CSHR
	CSMI
	CSM1
	CSM2
	CSM3
	CSM5
	CSNC
	CSSF
	CVMI
	CXCU
	CXRT

## Compatibility group DFHCOMPE

Group DFHCOMPE is required for compatibility with CICS Transaction Server for z/OS, Version 4 Release 1.

Table 17. Contents of compatibility group DFHCOMPE

Resource type	Name
PROGRAM	DFHMIRS DFHCCNV DFHUCNV DSNTIAC DSNTIA1 DFHEDP DFHDBAT DFHDBUEX DFHPIEP

## Compatibility group DFHCOMPD

Group DFHCOMPD is required for compatibility with CICS Transaction Server for z/OS, Version 3 Release 2.

Table 18. Contents of compatibility group DFHCOMPD

Resource type	Name
TDQUEUE	CPLD CPLI
PROGRAM	DFHPIVAL DFHSJJML IXMI33DA IXMI33D1 IXMI33IN IXMI33UC IXM4C56
TRANSACTION	CJMJ

## Compatibility group DFHCOMPC

Group DFHCOMPC is required for compatibility with CICS Transaction Server for z/OS, Version 3 Release 1.

Table 19. Contents of compatibility group DFHCOMPC

Resource type	Name
PROGRAM	IXM4C53

---

## Upgrading the CICS Explorer

You must upgrade the CICS Explorer to Version 5.2 before you can connect to CICS regions at CICS TS Version 5.2. When you upgrade CICS Explorer you can use it to work with CICS TS 5.2 regions, and also with other CICS TS regions that are not yet upgraded.

You can use the facilities that are provided by the Eclipse platform to update your CICS Explorer, or other software, or add new software plug-ins, such as CICS Tools.

The update site for the CICS Explorer is already coded in the product. You can see the site address on the Installed Software page in the Software Updates window. If you choose not to use the composite update site, you must specify the address of

your preferred update site, which can be either on your local workstation or a remote location. You can add multiple update sites each containing one or more software downloads.

**Note:** If you have a version of CICS Explorer earlier than V5.1.1, you cannot do an upgrade. This limitation is because the version of Eclipse that is used by CICS Explorer, changed in CICS Explorer V5.1.1. You must install a new copy of CICS Explorer. Before you install the new copy of CICS Explorer, it is advisable to back up your CICS Explorer workspace so that you can restore the workspace to a previous version, if required.

For more information about upgrading the CICS Explorer, open the Help Contents in the CICS Explorer product, and go to **Tasks > Updating and installing software**.

Taking a backup of the CICS Explorer workspace

Before you upgrade to a new release of CICS Explorer, it is advisable to back up your CICS Explorer workspace so that you can restore the workspace to a previous version, if required.

---

## Chapter 20. Upgrading application programs

CICS translator support for pre-Language Environment compilers is withdrawn. Runtime support is provided for existing application programs that were developed using these compilers, except for OS/VS COBOL and OO COBOL programs, which do not have runtime support.

### Withdrawal of support for pre-Language Environment compilers

CICS translator support is withdrawn for the following compilers:

- OS/VS COBOL (5740-CB1, 5740-LM1, and 5734-CB4)
- VS COBOL II (5668-958 and 5688-023)
- OS PL/I Version 1 (5734-PL1)
- OS PL/I Version 2 (5668-910 and 5668-909)
- SAA AD/Cycle C/370™ (5688-216)

For details of the compilers that are supported by CICS, see High-level language support in What's new.

The following JCL procedures that were supplied in earlier releases for translating, compiling, and link-editing using the unsupported compilers are also withdrawn:

#### COBOL

The DFHEITVL, DFHEXTVL, DFHEBTVL, DFHEITCL, and DFHEXTCL procedures.

**PL/I** The DFHEITPL, DFHEXTPL, and DFHEBTPL procedures.

**C** The DFHEITDL and DFHEXTDL procedures.

CICS now supplies the following procedures only, for use with compilers that conform to Language Environment:

Language	CICS-online	EXCI	Integrated translator
C	DFHYITDL	DFHYXTDL	DFHZITDL (without XPLINK) DFHZITFL (with XPLINK)
C++	DFHYITEL	DFHYXTEL	DFHZITEL (without XPLINK) DFHZITGL (with XPLINK)
COBOL	DFHYITVL	DFHYXTVL	DFHZITCL
PL/I	DFHYITPL	DFHYXTPL	DFHZITPL

The following CICS translator options, which all relate to the unsupported compilers, are obsolete:

- ANSI85
- LANTLR
- FE

The CICS translators ignore these translator options and issue a return code 4 warning message.

## **Runtime support for programs developed using pre-Language Environment compilers**

Although application program development support for obsolete compilers is withdrawn, CICS usually continues to provide runtime support for your existing application programs that were developed using these old compilers. However, to apply maintenance to these application programs, use one of the supported compilers that conforms to Language Environment.

Applications compiled and linked with pre-Language Environment compilers usually run successfully using the runtime support provided by Language Environment. These applications do not usually need to be recompiled or re-link-edited. If required, adjust Language Environment runtime options to allow these applications to run correctly. For more information, see the z/OS Language Environment Run-Time Application Migration Guide and the migration information for the language in use. Because pre-Language Environment compilers are not Language Environment-conforming, programs compiled by these compilers cannot take advantage of all Language Environment facilities in a CICS region.

Runtime libraries provided by Language Environment replace the runtime libraries that were provided with older compilers such as VS COBOL II, OS PL/I, and C/370. The runtime libraries provided with pre-Language Environment compilers are not supported. Language libraries, other than the Language Environment libraries, must not be present in your CICS startup JCL.

## **Withdrawal of runtime support for OO COBOL**

In this CICS release, you cannot use COBOL class definitions and methods (object-oriented COBOL). This restriction includes both Java classes and COBOL classes.

Modules using OO features and compiled in earlier CICS releases with the OOCOBOL translator option cannot run in this CICS release. The OOCOBOL translator option was used for the older SOM-based (System Object Manager-based) OO COBOL, and runtime support for this form of OO COBOL was withdrawn in z/OS V1.2. The newer Java-based OO COBOL, which is used in Enterprise COBOL, is not supported by the CICS translator.

---

## Chapter 21. Upgrading file control

The use of VSAM nonshared resources (NSR) is not supported with transaction isolation, so if CICS writes to files where the VSAM data set associated with the file uses NSR, you must change your resource definitions to avoid receiving an AFDK abend. Also, the maximum number of LSR pools available in a CICS region is increased from 8 to 255.

### VSAM nonshared resources (NSR)

If transaction isolation is active, and a program attempts to issue a file control write or update request against a file where the VSAM data set associated with the file uses VSAM nonshared resources (NSR), the program abends with the abend code AFDK. Requests to read or browse the file that do not attempt to update the file in any way do not result in an abend.

To avoid this situation, choose one of the following solutions:

- If the file requires transaction isolation, change the FILE resource definition so that the file uses either VSAM record-level sharing (RLS) or VSAM local shared resources (LSR). RLSACCESS(YES) specifies that CICS opens the file in RLS mode. LSRPOOLNUM(*number*) specifies the number of an LSR pool to be used by the VSAM data set associated with the file.
- If the file does not require transaction isolation, change the TRANSACTION resource definition to specify ISOLATE(NO). Setting this value causes the individual transaction to run without transaction isolation.

### Increased number of LSR pools

LSR pools are an effective means to improve performance when accessing VSAM files, and increasing the number of pools provides a method of optimizing your system. In CICS TS for z/OS, Version 4.1 and earlier releases, you specified the number of the LSR (local shared resource) pool in FILE and LSRPOOL resource definitions using the LSRPOOLID attribute, which has values in the range 1 - 8. From CICS TS for z/OS, Version 4.2, the value specified for LSRPOOLID in existing FILE and LSRPOOL resource definitions is transferred to the new option LSRPOOLNUM, which has values in the range 1 - 255.

Existing programs that use the commands **EXEC CICS CREATE FILE**, **EXEC CICS CREATE LSRPOOL**, **EXEC CICS CSD DEFINE FILE**, **EXEC CICS CSD DEFINE LSRPOOL**, **EXEC CICS CSD ALTER FILE**, or **EXEC CICS CSD ALTER LSRPOOL** with the LSRPOOLID attribute continue to work correctly. CICS substitutes the value in LSRPOOLNUM for the value in LSRPOOLID when the command is run.

Batch jobs that use the CICS system definition utility program (DFHCSDUP) and issue the commands **ALTER FILE**, **DEFINE FILE**, **ALTER LSRPOOL**, or **DEFINE LSRPOOL** with the LSRPOOLID attribute continue to work correctly. When compatibility mode is used, CICS uses the value in the LSRPOOLID attribute as the number of LSR pools. When compatibility mode is not used, CICS substitutes the value in LSRPOOLNUM for the value in LSRPOOLID.

CICS TS for z/OS, Version 4.1 and earlier releases only recognize the LSRPOOLID attribute, which has values in the range 1 - 8. You can use the compatibility mode

in CEDA and DFHCSDUP to set a value for LSRPOOLID if you are sharing the CSD with earlier releases of CICS. If you specify a value for LSRPOOLNUM, it is only used in CICS TS 5.2.

In CICSplex SM Business Application Services (BAS), if you install a FILE or LSRPOOL definition that specifies an LSR pool number greater than 8 into CICS TS for z/OS, Version 4.1 or earlier, the default value of 1 is used. You can use CICSplex SM to specify a number in the range 1 - 8.



---

## Chapter 22. Upgrading Business Transaction Services (BTS)

When you upgrade your BTS environment to CICS Transaction Server for z/OS, Version 5 Release 2, you might need to migrate the DFHLRQ data set. Be aware that even if you are not explicitly making use of BTS services in your applications, it is possible that they are being exploited by vendor code or IBM-supplied products executing within your CICS environment.

### Migrating the DFHLRQ data set

The local request queue data set stores pending BTS requests, such as timer requests, or requests to run activities. It is recoverable and is used to ensure that, if CICS fails, no pending requests are lost.

Requests that CICS can execute immediately, such as requests to run activities, are stored on the data set only briefly. Requests that CICS cannot execute immediately, such as timer or unserviceable requests, might be stored for longer periods. When CICS has processed a request, the request is deleted from the data set.

If you have outstanding BTS activities for BTS processes in CICS, you must migrate the contents of your DFHLRQ data set as part of the upgrade. You can use a utility such as IDCAMS COPY to update the CICS TS for z/OS, Version 5.2 DFHLRQ data set with the contents of the DFHLRQ data set from your previous CICS release.

Be aware that even if you are not explicitly making use of BTS services in your applications, it is possible that they are being exploited by vendor code or IBM-supplied products executing within your CICS environment.

### Repository data sets

When a process is not executing under the control of the CICS business transaction services domain, its state and the states of its constituent activities are preserved by being written to a VSAM data set known as a repository.

To use BTS, you must define at least one BTS repository data set to MVS. You may decide to define more than one, assigning a different set of process-types to each. One reason for doing this might be storage efficiency, for example, if some of your process-types tend to produce longer records than others.

If you operate BTS in a sysplex, several CICS regions may share access to one or more repository data sets. This sharing enables requests for the processes and activities stored on the data sets to be routed across the participating regions. As you upgrade your CICS releases, you may therefore still share older versions of repository data sets. The expectation is that you define and use different repository data sets whenever you want to assign different sets of process-types, rather than because a CICS upgrade has occurred.



## Chapter 23. Communicating over IPIC with different levels of CICS

If both an APPC or MRO connection and an IPIC connection exist between two CICS regions, and both have the same name, the IPIC connection takes precedence. However, if your terminal-owning region (TOR) and application-owning region (AOR) are in CICS systems that are using different levels of CICS, the rules can differ.

An APPC or MRO connection is defined using the CONNECTION resource. An IPIC connection is defined using the IPCONN resource.

If both CONNECTION resources and IPCONN resources are active in a CICS region, CICS searches for an IPIC connection first, so that when resources with the same name exist, the preference for an IPCONN resource can be maintained. However, if an IPCONN resource is not available, CICS attempts to route over an APPC or MRO connection using a CONNECTION resource. If the request fails, a SYSID error is returned to the application that scheduled the request. For more information about how IPIC overrides default connections, see Chapter 5, “Changes to resource definitions,” on page 35.

Table 20 and Table 21 on page 218 show how the resources are used depending on the level of CICS installed at the communicating regions, the availability of resources, and the intercommunication method that is being used.

*Table 20. Selection behavior for IPCONN and CONNECTION resources with TOR and AOR communications*

Version of CICS in TOR or routing region	Status of IPCONN resource	CICS TS 3.2 AOR			CICS TS 4.1 AOR			CICS TS 4.2, 5.1, or 5.2 AOR		
		DPL	Asynchronous processing and transaction routing	Enhanced Routing	DPL	Asynchronous processing and transaction routing	Enhanced Routing	DPL	Asynchronous processing and transaction routing	Enhanced Routing
CICS TS 3.2	Acquired	IPIC connection	APPC or MRO connection	APPC or MRO connection	IPIC connection	APPC or MRO connection	APPC or MRO connection	IPIC connection	APPC or MRO connection	APPC or MRO connection
	Released	Request rejected	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection
CICS TS 4.1	Acquired	IPIC connection	APPC or MRO connection	APPC or MRO connection	IPIC connection	IPIC connection	APPC or MRO connection	IPIC connection	IPIC connection	APPC or MRO connection
	Released	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection
CICS TS 4.2, 5.1, or 5.2	Acquired	IPIC connection	APPC or MRO connection	APPC or MRO connection	IPIC connection	IPIC connection	APPC or MRO connection	IPIC connection	IPIC connection	IPIC connection
	Released	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection

Table 21. Selection behavior for IPCONN and CONNECTION resources with AOR and ROR communications

Version of CICS in the AOR	Status of IPCONN resource	CICS TS 3.2 or 4.1 ROR				CICS TS 4.2, 5.1, or 5.2 ROR			
		File control	Transient data	Temporary storage	DL/I	File control	Transient data	Temporary storage	DL/I
CICS TS 3.2	Acquired	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection
	Released	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection
CICS TS 4.1	Acquired	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection
	Released	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection
CICS TS 4.2, 5.1, or 5.2	Acquired	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	IPIC connection	IPIC connection	IPIC connection	APPC or MRO connection
	Released	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection	APPC or MRO connection

## Upgrading IPIC service transactions

In CICS Transaction Server for z/OS, Version 5 Release 1, the IPIC service transactions were redefined to run in CICS key. You must upgrade the CSD to the latest level of resource definitions, supplied with your release, to pick up the changes to the IPIC service task resource definitions. For more information about upgrading the CSD, see *Upgrading the CSD for CICS-supplied and other IBM-supplied resource definitions*.

---

## Chapter 24. Migrating to IPv6 addressing

You need a minimum level of CICS TS 4.1 to communicate using IPv6. The CICS region must be running in a dual-mode (IPv4 and IPv6) environment and the client or server with which CICS is communicating must also be running in a dual-mode environment. Explicitly defined IP version 4 (IPv4) connections in either single-mode or dual-mode environments continue to operate as before.

### Before you begin

Ensure that you have an existing TCP/IP network configured and available and that you have existing TCP/IP resources defined and installed.

### Procedure

Follow these steps to migrate CICS network resources from an earlier release and to enable IPv6 addressing:

1. Copy your existing resource definitions to the system definition data set (CSD) for the new release system. For information on migrating CICSplex SM CSD structures, see the *CICSplex System Manager Concepts and Planning*.
2. Inquire on the new resources to verify that they have been defined correctly.
3. If you are running in a dual-mode environment and you are connecting to another CICS Transaction Server for z/OS, Version 4 or CICS Transaction Server for z/OS, Version 5 region that is running in a dual-mode environment and you have specified HOST(ANY) or IPADDRESS(ANY) in your TCPIP SERVICE definition, you do not have to make any updates to receive IPv6 traffic. If you have defined a specific IPv4 address in the TCPIP SERVICE definition, you will need to change this address to receive IPv6 traffic.
4. Make sure that new application programs that manipulate IP addresses use the options that support IPv6 addressing:
  - a. If you are using the **EXTRACT WEB**, **WEB EXTRACT**, **WEB OPEN**, or **WEB PARSE URL** commands, the HOST option allows you to specify IP address information
  - b. If you are using **EXTRACT TCPIP**, new client and server options return IPv6 address information.

You do not have to recompile existing application programs that return IPv4 addressing information.

### Results

Existing IPv4 connections continue to function correctly and your IPv6 resources are defined and ready for network traffic.

### What to do next

If you are having problems with your connection, see the *CICS Problem Determination Guide*.



---

## Chapter 25. Upgrading multiregion operation (MRO)

To upgrade CICS multiregion operation (MRO) support, install the latest DFHIRP and DFHCSVC modules in the MVS link pack area (LPA) and carry out tests.

### About this task

For MRO, the interregion communication program DFHIRP is installed in the link pack area (LPA). The CICS TS for z/OS, Version 5.2 DFHIRP module is compatible with earlier releases, and works with all releases of CICS. However, the CICS TS for z/OS, Version 5.2 version of DFHIRP, required for multiple XCF group support, can be used only on z/OS Version 1.7 or later.

DFHIRP can be used only from the LPA. Therefore in an MVS image you can have only one version of the module named DFHIRP, which must be at the *highest* release level of the CICS regions that run in that MVS image.

In a Parallel Sysplex®, where MRO communication between MVS images is through XCF/MRO, the DFHIRP programs installed in the different MVS images can be at different release levels. However, the DFHIRP in an MVS image must still be installed from the *highest* release of CICS running in that MVS image. For example, a CICS TS 3.2 DFHIRP can communicate with a CICS TS for z/OS, Version 5.2 DFHIRP across XCF/MRO, but the CICS regions running in the MVS with the CICS TS 3.2 DFHIRP cannot be later than CICS TS 3.2.

These steps are a guide to the upgrading process for MRO, to install the latest DFHIRP and DFHCSVC modules in the MVS link pack area (LPA). For information about how to perform some of these steps, such as installing the SVC or IRP modules in the LPA, see *Installing CICS modules in the MVS link pack area* in the *CICS Transaction Server for z/OS Installation Guide*. These steps assume that RACF is your external security manager (ESM).

### Procedure

1. Install the CICS SVC routine, DFHCSVC, in the LPA, and specify a new CICS SVC number for this routine in the MVS SVC Parm table. If the new DFHCSVC must coexist with an older version, rename one of them so that both versions can be installed in the LPA. However, coexistence is not recommended or necessary: DFHCSVC is compatible with earlier releases and the latest CICS TS version supports all the earlier releases of CICS.
2. Test the new SVC on stand-alone CICS regions, without using any MRO. You can do this running the CICS IVP, DFHIVPOL.
3. Install the CICS interregion communication program, DFHIRP, in a suitable LPA library. If you have a strategy whereby all users of DFHIRP on the z/OS image being upgraded can be quiesced, then you can use the dynamic LPA function to replace DFHIRP. Otherwise you must IPL MVS with the **CLPA** option. Failing to shut down all users of DFHIRP during the upgrade process can cause incompatibility between control blocks resulting in abends.

To dynamically update DFHIRP perform the following steps:

- a. Quiesce all users of DFHIRP. For example, WebSphere EXCI, CTG EXCI, all CICS regions including any CMASs must either be shutdown or logged off from MRO/XM, and finally all other work using EXCI must be shut down.

**Important:** The process described here does not include upgrading CICSplex SM to the CICS TS 5.2 level. For more information, see Chapter 41, “Upgrading a CMAS,” on page 305.

- b. Update LPA modules DFHCVSC, DFHDSPEX, DFHUMPX, DFHIRP, DFHSSEN and DFHSVC99 using the dynamic LPA facility specifying the **ADD** verb.
- c. Run the CICS TS 5.2 supplied utility DFHCSVCU to update the z/OS SVC table as documented in Running the DFHCSVCJ job.
- d. Restart MRO by either setting IRC connected in all executing CICS regions or restarting the CICS regions.
- e. As dynamic changes are discarded by an IPL, you must schedule an IPL for a convenient time to ensure that all dynamically applied changes have been correctly applied to the z/OS system libraries.

**Important:** If you do not follow these steps an IPL is required to shut everything down and use the new DFHIRP module.

4. Test your production MRO CICS regions, under your existing release of CICS, but using the new SVC number and the new DFHIRP. For this test, run without any logon or bind-time security checking: that is, do not define any RACF FACILITY class profiles.
5. Define the required DFHAPPL.applid profiles in the RACF FACILITY general resource class. When the profiles are ready for all the MRO regions, test the production regions again with the new SVC and DFHIRP, this time using the FACILITY class profiles for logon and bind-time security checking.
6. If the production MRO regions successfully log on to the new IRP with the new SVC, and bind-time security checking works successfully, use the new DFHIRP and SVC for the production regions.
7. With the production regions running successfully under the CICS SVC and IRP, you can initialize and test some CICS Transaction Server regions using MRO. These test regions can coexist in the same MVS image as the production regions, all using the same SVC and IRP.



---

## Chapter 26. Upgrading the Java environment

When you upgrade to a new CICS release, you might require changes to your JVM profiles and to other aspects of your Java environment. You might also require changes to your Java applications.

### Earlier versions of Java

Java programs that ran under CICS Transaction Server for z/OS, Version 3 and CICS Transaction Server for z/OS, Version 4 can also run under CICS Transaction Server for z/OS, Version 5.

When you upgrade from one version of Java to another, check for compatibility issues between the Java APIs, and compatibility issues specific to the IBM SDK for z/OS. You can find this information at Java Standard Edition Products on z/OS.

To avoid potential problems with deprecated APIs, develop all new Java programs for CICS Transaction Server for z/OS, Version 5 Release 2 using an application development environment that supports the same version of Java as the environment used by CICS. You can run code compiled with an older version of Java in a new runtime environment, if the environment does not use APIs that are removed in the newer version of Java or CICS. For further details refer to the **Target Platform** setting when using the CICS Explorer SDK.

### JVM profiles

If you already have JVM profiles that you set up in a previous CICS release, upgrade these profiles. Settings that are suitable for use in JVM profiles can change from one CICS release to another, so check the CICS documentation for any significant changes. You must also compare your existing JVM profiles to the latest samples supplied with CICS. Changes to the JVM profile options are described in “Changes to options in JVM profiles” on page 225. A list of suitable options for this release is in JVM profiles: options and samples in Deploying. Use the new samples supplied with CICS Transaction Server for z/OS, Version 5 Release 2 to help you create new profiles, rather than upgrading your existing files.

Copy your JVM profiles to a new location on z/OS UNIX to use with the new CICS release then apply the required upgrades. Do not try to use JVM profiles with more than one CICS release at the same time, because the settings are not compatible.

Ensure that the JVM profiles that you want to use are in the z/OS UNIX directory that is specified by the **JVMPROFILEDIR** system initialization parameter.

---

## Key changes to CICS support for Java applications

Check for changes that can affect your Java environment when you upgrade to CICS Transaction Server for z/OS, Version 5 Release 2.

Be aware of the following significant changes that can affect your Java environment when you upgrade to CICS Transaction Server for z/OS, Version 5 Release 2:

- CICS uses the IBM 64-bit SDK for z/OS, Java Technology Edition, Version 7 or Version 7 Release 1. Either version may be used, but all JVM servers running in a CICS region must use the same version. Note the restriction that only one JVM level can be used per lifetime of the region.
- The supported Axis2 version is changed to Axis2 V1.6.2 and its prerequisite software.
- The Liberty Angel process must be started if you use the CICS Liberty security feature.
- Only one Liberty JVM server can be run per region with the CICS Liberty security feature enabled.
- The pooled JVM environment is not supported and has been removed from CICS. You must migrate your Java applications to run in a JVM server instead. You must also ensure your applications are threadsafe. For more information, see “Migrating Java applications using the CICS Explorer SDK” on page 233.
- CICS support for enterprise beans (Enterprise JavaBeans, or EJBs) and CICS support for the CORBA architecture (using stateless CORBA objects) are no longer provided in CICS Transaction Server. If you are running enterprise beans or stateless CORBA object applications in CICS in the pooled JVM environment, you must migrate your applications to run in the JVM server environment, and you must use standard functions of the IBM 64-bit SDK for z/OS, Java Technology Edition for intercommunication between components.
- CICS provides the JVM server runtime environment for Java applications that are threadsafe. The JVM server can handle multiple requests for Java applications concurrently in a single JVM, reducing the number of JVMs that are required in the CICS region. JVM servers can use class caches, but these class caches are not managed by CICS interfaces, such as the SPI and CEMT. For more information about the JVM server runtime environment see JVM server runtime environment in Getting started.
- All JVM servers run in a 64-bit environment. Although you can continue to use a supported SDK to build your Java applications, you must use the IBM 64-bit SDK for z/OS, Java Technology Edition, Version 7 or Version 7 Release 1, to run your Java workloads. When you are upgrading CICS, you must perform the following steps to make sure your Java applications work in a 64-bit environment:
  - Ensure that CICS has enough memory available to run 64-bit JVMs; set a suitable value for the z/OS **MEMLIMIT** parameter before you start your CICS regions. You must allow for other CICS facilities that use 64-bit storage. For more information, see Estimating, checking, and setting MEMLIMIT in Improving performance.
  - Ensure that any Java Native Interface (JNI) code can run in a 64-bit environment. You might have to recompile or rewrite application code if it uses JNI. You must also check that any third-party products that have JNI can run in a 64-bit environment.
- DFHAXRO is a new sample program that provides default values for configuring the 64-bit Language Environment enclave of a JVM server. Modify and recompile this program to change the Language Environment enclave for a JVM server. The JVMSERVER resource defines the name of the program that controls the options for the Language Environment enclave. Each JVM server can use a different version of the runtime options if required. The program must be in the *hlq.SDFHLOAD* library.
- The JCICS API packaging is changed; the dfjcics.jar and dfjoutput.jar files are replaced by a set of OSGi bundles that run in a JVM server. The following OSGi bundles are provided with CICS:

File name	OSGi bundle symbolic name	Description
com.ibm.cics.samples.jar	com.ibm.cics.samples	Samples for redirecting System.out and System.err. Replaces the dfjoutput.jar file.
com.ibm.cics.server.jar	com.ibm.cics.server	The JCICS API. Replaces the dfjcics.jar file.
com.ibm.record.jar	com.ibm.record	The Java API for legacy programs that use IByteBuffer from the Java Record Framework that came with VisualAge. Previously in the dfjcics.jar file.

If you use classes from the JCICS API or the IByteBuffer class, you must import the relevant package into your OSGi bundle manifest when packaging a Java application as an OSGi bundle.

- You can no longer use OSGi bundles in a Liberty JVM server. A CICS bundle containing OSGi bundles resources will no longer deploy to a Liberty JVM server, and a Liberty JVM server will not enable if it has the OSGI\_BUNDLES option in its JVM profile. OSGi bundles can only be deployed to a Liberty JVM server as part of an enterprise bundle archive (EBA), or as library bundles using the bundle repository of Liberty. You therefore cannot specify the DB2 .jar files in OSGi bundles. Instead, specify the <cicsts\_jdbcDriver> element in the server.xml file.
- CICS applications running in an OSGi framework can use the JCICS API to create threads that start CICS tasks on T8 TCBs. These tasks can use JCICS to access CICS services. The CICSExecutorService class in JCICS provides an implementation of the Java ExecutorService interface. Use this class instead of the Thread.start() method.
- CICS has upgraded to support Version 4.3 of the OSGi Service Platform Release 4 specification. If you are upgrading OSGi applications, you must ensure they comply with this version of the specification.
- JCICS calls use the code page specified in the **LOCALCCSID** system initialization parameter to encode character data instead of the file encoding in the JVM. CICS supplies a JVM system property called **-Dcom.ibm.cics.jvmserver.override.ccsid** if you want to override this behavior and use a different code page. The restriction on using EBCDIC code pages for the **Dfile.encoding** property is lifted for OSGi JVM servers because JCICS uses the local CCSID in the CICS region.
- The CCI Connector for CICS is obsolete and is no longer available. If you have any Java applications that use this deprecated interface, you must change the application. You can use the JCICS Link() method in the Program class instead.

## Changes to options in JVM profiles

When you upgrade to a new release of CICS TS, there are normally some changes to the options available in JVM profiles and to their possible or suggested settings.

The JVM server supports a variety of Java workloads. The following sample JVM profiles are supplied with CICS TS for z/OS, Version 5.2:

- DFHJVMAX.jvmprofile is a JVM profile that specifies the options for initializing the JVM server to support SOAP processing by Axis2 applications. Axis2 is an open source web services engine from the Apache foundation that supports a number of the web service specifications and provides a programming model to create Java applications that can run in Axis2.

- DFHJVMST.jvmprofile is a JVM profile that allows the JVM server to be configured for a Security Token Service.
- DFHOSGI.jvmprofile is a JVM profile that specifies the options for initializing the JVM server for Java applications that comply with the OSGi specification.
- DFHWLP.jvmprofile is a JVM profile to run workloads for the Liberty profile, a lightweight application server that can support JSP and servlet applications for developing modern web interfaces for CICS. Liberty profile servers must use a file encoding of ISO-8859-1 or UTF-8. The supplied sample profile DFHWLP is configured to use ISO-8859-1.

JVM profiles must have a file extension of `.jvmprofile`. The JVM server fails to enable if this extension is not present. The sample JVM profiles that are shipped with CICS TS for z/OS, Version 5.2 have this file extension.

When you upgrade to a new release of CICS TS, there are normally some changes to the options available in JVM profiles and to their possible or suggested settings. A good practice is to use the sample JVM profiles that are shipped with the new release, and reapply the customization that you made to those JVM profiles in previous releases. Using the latest JVM profiles ensures that you do not miss important updates to the options and their settings.

The obsolete, changed, and new options in JVM profiles are summarized here. For more details about the options, see *JVM profiles: options and samples* in *Deploying*.

*Table 22. New options in JVM profiles*

Option	Status	CICS and Java launcher action	Notes
-Dcom.ibm.cics.jvmserver.override.ccsid	New property	Sets code page for JCICS	Specifies the code page for JCICS calls. The default behavior is to use the code page in the <b>LOCALCCSID</b> system initialization parameter.
-Dcom.ibm.cics.jvmserver.wlp.autoconfigure	New property	Sets automatic configuration	Specifies whether CICS automatically configures the <code>server.xml</code> file for a Liberty JVM server.
-Dcom.ibm.cics.jvmserver.wlp.server.host	New property	Accepted	Specifies the host name for a web application that runs in the Liberty JVM server.
-Dcom.ibm.cics.jvmserver.wlp.server.http.port	New property	Accepted	Specifies the HTTP port for the Liberty JVM server.
-Dcom.ibm.cics.jvmserver.wlp.server.https.port	New property	Accepted	Specifies the HTTPS port for the Liberty JVM server.
-Dcom.ibm.cics.jvmserver.wlp.server.name	New property	Accepted	Specifies the Liberty profile server name for the Liberty JVM server.
-Dcom.ibm.cics.jvmserver.wlp.jdbc.driver.location	New property	Accepted	Specifies the location of the directory in zFS that contains the DB2 JDBC drivers.
-Dibm.cl.verbose	New for CICS sample profiles	Preferred	Examples are provided in comments.

Table 22. New options in JVM profiles (continued)

Option	Status	CICS and Java launcher action	Notes
JAVA_PIPELINE	For CICS sample profiles	Accepted	Adds the required JAR files to the class path for Java-based SOAP pipelines.
OSGI_BUNDLES	For CICS sample profiles	Accepted	Specifies a list of middleware OSGi bundles. Not supported in Liberty JVM server.
OSGI_FRAMEWORK_TIMEOUT	For CICS sample profiles	Accepted	Specifies a timeout in seconds for the JVM server initialization and shutdown.
JNDI_REGISTRATION	For CICS sample profiles	Accepted	Specifies that the JNDI registration JAR files are automatically added to the JVM runtime environment.
SECURITY_TOKEN_SERVICE	For CICS sample profiles	Accepted	Controls whether the JVM server can use security tokens. This option must be set to YES for a JVM server to use security tokens. If this configuration option is set to NO, the JVM server is initialized as an OSGi JVM server and Security Token Service support is disabled for that JVM server. SECURITY_TOKEN_SERVICE=YES is not compatible with JAVA_PIPELINE=YES, which configures the JVM to support Axis2.
WSDL_VALIDATOR	For CICS sample profiles	Accepted	Enables validation for SOAP requests and responses against their definition and schema.
-verbose	New for CICS sample profiles	Preferred	Examples are provided in comments.
WLP_INSTALL_DIR	New in sample profiles	UNIX System Services environment variable set	Specifies the installation directory for the Liberty profile technology.
WLP_OUTPUT_DIR	New in sample profiles	UNIX System Services environment variable set	Specifies the output directory for the Liberty JVM server.
WLP_USER_DIR	New in sample profiles	UNIX System Services environment variable set	Specifies the directory that contains the configuration files for the Liberty JVM server.
-Xcheck	New for CICS sample profiles	Preferred	Examples are provided in comments.
-Xdump	New for CICS sample profiles	Preferred	Examples are provided in comments.

Table 23. Changed and obsolete options in JVM profiles

Option	Status	CICS and Java launcher action	Replace with	Notes
-generate	Obsolete	n/a	n/a	Pooled JVM option that is not supported in a JVM server.
CICS_HOME	Obsolete	Java launcher uses the value of the <b>USSHOME</b> system initialization parameter	<b>USSHOME</b> system initialization parameter	Do not specify.
-Dibm.jvm.shareable.application.class.path	Obsolete	CICS adds entries to standard classpath	CLASSPATH_SUFFIX	Obsolete for Java 5 and later versions.
DISPLAY_JAVA_VERSION	Obsolete	Accepted	n/a	Shows JVM version in CICS MSGUSR log.
GC_HEAP_THRESHOLD	Obsolete	n/a	n/a	Pooled JVM option that is not supported in a JVM server.
IDLE_TIMEOUT	Obsolete	n/a	n/a	Pooled JVM option that is not supported in a JVM server.
JAVA_DUMP_OPTS	Withdrawn from sample profiles	Accepted	-Xdump	Deprecated in Java 5.
OSGI_BUNDLES	Not supported in Liberty JVM server	Liberty JVM server does not enable with this option	n/a	Deploy OSGi bundles in a Liberty JVM server as part of an enterprise bundle archive (EBA) or as library bundles.
REUSE	Obsolete	n/a	n/a	Pooled JVM option that is not supported in a JVM server.

## Changes to JVM profile symbols

### &CONFIGROOT;

When you use this symbol in a JVM profile, the absolute path of the directory where the JVM profile is located is substituted at run time.

### &JVMSERVER;

When you use this symbol in a JVM profile, the name of the JVMSERVER resource is substituted at run time. Use this symbol to create unique output or dump files for each JVM server.

### &USSHOME;

When you use this symbol in a JVM profile, the symbol is replaced with the value of the **USSHOME** system initialization parameter. Use this symbol to automatically pick up the home directory for z/OS UNIX where CICS supplies its libraries for Java and the Liberty technology.

For information about the other supported JVM profile symbols, see JVM profiles: options and samples in Deploying.



---

## Changes to class paths in JVM profiles

There are a number of changes to the way class paths are specified in CICS. Identify an appropriate class path for each of the items that you specified on class paths in your existing JVM profiles and transfer the items to the correct class paths.

You must use IBM 64-bit SDK for z/OS, Java Technology Edition, Version 7 for Java support with CICS. Class paths are built using the options listed in Classes and class paths in JVMs in Getting started.

---

## Upgrading from IBM SDK for z/OS, Java Technology Edition, Version 1.4.2

If you are using Java Version 1.4.2, you must upgrade to Version 7 or Version 7 Release 1 because Version 1.4.2 is no longer supported. In CICS TS 5.2, JVM properties are now added to the JVM profile.

### About this task

CICS runs Java applications using the IBM 64-bit SDK for z/OS, Java Technology Edition. CICS supports only the 64-bit version of the SDK and not the 31-bit version.

### Procedure

If you have one or more CICS regions at CICS TS 3.2 or earlier, with existing Java workloads supported by Version 1.4.2 of the IBM SDK for z/OS, follow these steps to upgrade your Java environment:

1. Check your Java programs against the information at Java Standard Edition Products on z/OS, on the IBM Systems web site (<http://www.ibm.com/systems/z/os/zos/tools/java/>) for compatibility issues between the IBM SDK for z/OS, V7 and the IBM SDK for z/OS, V1.4.2. The information includes links to Java compatibility and deprecated API information. Make any changes that are required to enable your programs to run with the Java 7 API and the IBM SDK for z/OS, V7.
2. Check that any Java programs that use the Java Native Interface (JNI), including vendor products, can run using the 64-bit version of the SDK.
3. Ensure that your applications are threadsafe and repackaging your JARs as OSGi bundles. Deploy the OSGi bundles within a CICS bundle to zFS, making sure that you specify the correct target JVMSERVER resource. For more information see JVM server runtime environment in Getting started.
4. Download and install the IBM 64-bit SDK for z/OS, Java Technology Edition, Version 7 or Version 7 Release 1 on your z/OS system. You can download the product, and find out more information about it, at Java Standard Edition Products on z/OS, on the IBM Systems web site (<http://www.ibm.com/systems/z/os/zos/tools/java/>).
5. Check all the JVM profiles that you have upgraded against the listing of changes to JVM options in “Changes to options in JVM profiles” on page 225 and make any further required changes.
6. Give all your CICS regions the following access permissions on z/OS UNIX:
  - Read and execute access to the files for the IBM 64-bit SDK for z/OS installation.

- Read access to your new or modified JVM profiles.
7. Change the **JVMPROFILEDIR** system initialization parameter in all the CICS regions that you are upgrading to specify the location on z/OS UNIX where you placed the CICS TS 5.2 JVM profiles.
  8. Set the **MEMLIMIT** parameter to ensure that there is enough storage for the 64-bit JVMs. You must allow for other CICS facilities that use 64-bit storage. For more information, see Estimating, checking, and setting MEMLIMIT in Improving performance.
  9. When you have completed any other necessary upgrade tasks for the CICS regions, start one region and run your Java workload in it as a test region. Make these checks:
    - a. Confirm that you can start JVMs with each of your JVM profiles successfully and can use them to run applications. You can use the CICS Explorer to browse the JVMs in a CICS region, identify their JVM profiles, and see when they are allocated to a task.
    - b. Check that the behavior of your application is the same as when you used Version 1.4.2 of the SDK.
  10. If you encounter any problems see Troubleshooting Java applications in Troubleshooting and support.
  11. Start the remaining upgraded CICS regions and use them for your Java workload.

## Results

Your Java workloads run using the IBM 64-bit SDK for z/OS, Java Technology Edition, Version 7.

## What to do next

- You might want to perform additional tuning to ensure that your Java workloads are configured for optimal performance. For more information, see Improving Java performance in Improving performance.

---

## Upgrading from IBM SDK for z/OS, Java Technology Edition, Version 5

If you are using Java 5, you must upgrade to Version 7 or Version 7 Release 1 because Java 5 is no longer supported.

### About this task

CICS runs Java applications using the IBM 64-bit SDK for z/OS, Java Technology Edition. CICS supports only the 64-bit version of the SDK and not the 31-bit version.

### Procedure

If you have one or more CICS regions at CICS TS 3.2 or earlier, with existing Java workloads supported by Version 5 of the IBM SDK for z/OS, follow these steps to upgrade your Java environment:

1. Check your Java programs against the information at Java Standard Edition Products on z/OS (<http://www.ibm.com/systems/z/os/zos/tools/java/>) for compatibility issues between the IBM SDK for z/OS, V7 and the IBM SDK for z/OS, V1.4.2. The information includes links to Java compatibility and deprecated API information. Make any changes that are required to enable your programs to run with the Java 7 API and the IBM SDK for z/OS, V7.



2. Check that any Java programs that use the Java Native Interface (JNI), including vendor products, can run using the 64-bit version of the SDK.
3. Ensure that your applications are threadsafe and repackage your JARs as OSGi bundles. Deploy the OSGi bundles within a CICS bundle to z/FS, making sure that you specify the correct target JVMSERVER resource.
4. Download and install the IBM 64-bit SDK for z/OS, Java Technology Edition, Version 7 or Version 7 Release 1 on your z/OS system. You can download the product, and find out more information about it, at Java Standard Edition Products on z/OS (<http://www.ibm.com/systems/z/os/zos/tools/java/>).
5. If you want to upgrade the JVM profiles that you used with your previous CICS release, copy them to a new location on z/OS UNIX. The full path to this location, including the directory name, must be 240 characters or less, so that you can specify it on the **JVMPROFILEDIR** system initialization parameter for CICS.
6. If you do not want to use the JVM profiles and JVM properties files from the previous CICS release, copy the new sample JVM profiles to a new location on z/OS UNIX. Sample JVM properties files are not supplied with CICS TS 5.2. The JVM profile samples are in the `/usr/lpp/cicsts/cicsts52/JVMProfiles` directory, where the `/usr/lpp/cicsts/cicsts52` directory is the installation directory for CICS files on z/OS UNIX. This value is specified by the **USSDIR** parameter in the DFHISTAR installation job.
7. Give all your CICS regions the following access permissions on z/OS UNIX:
  - Read and execute access to the files for the IBM 64-bit SDK for z/OS installation.
  - Read access to your new or modified JVM profiles and optional JVM properties files.
8. Change the **JVMPROFILEDIR** system initialization parameter in all the CICS regions that you are upgrading to specify the location on z/OS UNIX where you placed the CICS TS 5.2 JVM profiles.
9. Set the **MEMLIMIT** parameter to ensure that there is enough storage for the 64-bit JVMs. You must allow for other CICS facilities that use 64-bit storage. For more information, see Estimating, checking, and setting MEMLIMIT in Improving performance.
10. When you have completed any other necessary upgrading tasks for the CICS regions, start one region and run your Java workload in it as a test region. Make these checks:
  - a. Confirm that you can start JVMs with each of your JVM profiles successfully and can use them to run applications. You can use the CICS Explorer to browse the JVMs in a CICS region, identify their JVM profiles, and see when they are allocated to a task.
  - b. Check that the behavior of your application is the same as when you used Version 5 of the SDK.
11. If you encounter any problems see Troubleshooting Java applications in Troubleshooting and support.
12. Start the remaining upgraded CICS regions and use them for your Java workload.

## Results

Your Java workloads run using the IBM 64-bit SDK for z/OS, Java Technology Edition.

## What to do next

- You might want to perform additional tuning to ensure that your Java workloads are configured for optimal performance. For more information, see *Improving Java performance in Improving performance*.

---

## Upgrading from IBM 31-bit SDK for z/OS, Java Technology Edition, Version 6

If you are using the 31-bit version of Java 6, you must upgrade to the 64-bit Version 7 or Version 7 Release 1, because Java 6 and 31-bit versions of the JVM are no longer supported.

### About this task

CICS runs Java applications using the IBM 64-bit SDK for z/OS, Java Technology Edition, Version 7. CICS supports only the 64-bit version of the SDK and not the 31-bit version.

### Procedure

To upgrade your Java environment to Version 7 of the 64-bit SDK, follow these steps:

1. Check your Java programs against the information at Java Standard Edition Products on z/OS, on the IBM Systems web site for compatibility issues between the IBM 64-bit SDK for z/OS V7, and the IBM 31-bit SDK for z/OS V6.
2. Ensure that your applications are threadsafe, and repackage your JARs as OSGi bundles. Deploy the OSGi bundles within a CICS bundle to zFS, making sure that you specify the correct target JVMSERVER resource.
3. Download and install the IBM 64-bit SDK for z/OS, Java Technology Edition, Version 7 or Version 7 Release 1 on your z/OS system. You can download the product, and find out more information about it, at Java Standard Edition Products on z/OS, on the IBM Systems web site.
4. Copy and edit the JVM profiles for your Java applications. Edit the options in the JVM profiles:
  - a. Change the `JAVA_HOME` option to specify the location where you installed the IBM 64-bit SDK for z/OS Java Technology Edition.  
`/usr/lpp/java/J7.0_64/` is the default installation location for the product.
  - b. Remove the `CICS_HOME` option from your profiles. This option is obsolete. CICS uses the **USSHOME** system initialization parameter instead.
  - c. Check the results of your changes by comparing with another profile.
5. Give all your CICS regions the following access permissions on z/OS UNIX:
  - Read and execute access to the files for the IBM 64-bit SDK for z/OS installation.
  - Read access to your new JVM profiles and optional JVM properties files.
6. Set the **USSHOME** system initialization parameter in all the CICS regions that you are upgrading to specify the location of z/OS UNIX files.
7. Change the **JVMPROFILEDIR** system initialization parameter in all the CICS regions that you are upgrading to specify the directory on z/OS UNIX that contains the JVM profiles.

8. Set the **MEMLIMIT** parameter to ensure that there is enough storage for the 64-bit JVMs. You must allow for other CICS facilities that use 64-bit storage. For more information, see Estimating, checking, and setting MEMLIMIT in Improving performance.
9. When any other necessary upgrading tasks for the CICS regions are complete, start one region and run your Java workload in it as a test region:
  - a. Confirm that you can start JVMs with each of your JVM profiles successfully and can use them to run applications. You can use the CICS Explorer to browse the JVMs in a CICS region, identify their JVM profiles, and see when they are allocated to a task.
  - b. Check that the behavior of your application is the same.
10. If you encounter any problems see Troubleshooting Java applications in Troubleshooting and support.
11. Start the remaining upgraded CICS regions and use them for your Java workloads.

## Results

Your Java workloads run using the IBM 64-bit SDK for z/OS, Java Technology Edition, Version 7 or Version 7 Release 1.

## What to do next

- When these steps to upgrade your existing Java workloads are complete, investigate moving your applications to run in a JVM server. The JVM server is the strategic runtime environment for Java applications in CICS. The JVM server can handle multiple requests for Java applications concurrently in a single JVM, saving on the number of JVMs that are required in the CICS region. For information about this runtime environment, see Java support in CICS in Getting started.
- You might want to perform additional tuning to ensure that your Java workloads are configured for optimal performance. For more information, see Improving Java performance in Improving performance.

---

## Migrating Java applications using the CICS Explorer SDK

Because pooled JVMs are not supported, you must migrate your existing Java applications to run in a JVM server. The JVM server is a multithreaded environment that uses an OSGi framework, so you must ensure that your applications are threadsafe and comply with the OSGi specification. You can use the CICS Explorer SDK to repackage the applications as OSGi bundles and deploy them to run in a JVM server.

### About this task

There are three possible ways to repackage a Java application as one or more OSGi bundles. Each option is explained in full detail in the SDK help, and is summarized in the following procedure.

### Procedure

1. Check that the Java application is threadsafe. The IBM website developerWorks® has useful information about Java: <http://www.ibm.com/developerworks/java/>.
2. Check that the Java application does not use the `System.exit()` Java method. If this method is used, the JVM server and CICS both shut down.

3. Package the Java application as one or more OSGi bundles by either conversion, injection or wrapping, ready for running in the JVM server environment.

#### Conversion

If you already have an Eclipse Java project for the Java application, you can convert the project to an OSGi plug-in project. This method is the preferred best practice.

#### Injection

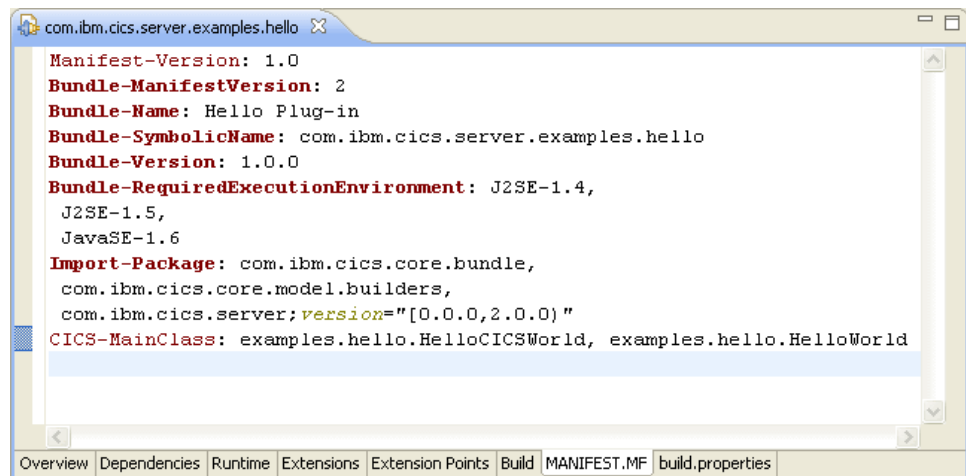
Create an OSGi plug-in project and import the contents of the existing JAR file. This method is useful when the application is already threadsafe and no refactoring or recompiling is required.

#### Wrapping

Create an OSGi plug-in project and import an existing binary JAR file. This method is useful in situations where there are licensing restrictions or where the binary file cannot be extracted.

4. Add the CICS-MainClass declaration to the project manifest. Right-click on the project name and select **PDE Tools > Open Manifest**.

The following example is the manifest file from the CICS Hello Examples project. The sample contains two classes, HelloCICSWorld and HelloWorld, which are both declared in the manifest file in the CICS-MainClass declaration. You must add a CICS-MainClass declaration for each class used in your application.



5. Deploy the OSGi bundle in a CICS bundle to the zFS file system. Specify the target JVMSERVER resource in the plug-in resource file of the CICS bundle.

## Results

The threadsafe Java application is packaged as one or more OSGi bundles, and is deployed as a CICS bundle to the zFS file system.

## What to do next

The system programmer can create the CICS resources that are required to run the Java application in an OSGi JVM server.

---

## Upgrading Java applications in a JVM server

If you are running Java applications in a JVM server, when you upgrade you must check whether the applications use IBM or vendor classes that are available in the JRE. The OSGi framework has stricter rules for loading classes and you might need to change your applications to run them in a JVM server in this release.

### About this task

In previous releases, the OSGi framework was able to load IBM and vendor classes from the JRE as required by Java applications. However, in this release, the OSGi framework has stricter rules that control which classes can be loaded from the JRE.

Any package that is prefixed with `java` is loaded by the OSGi framework as required by the application. If an application uses an IBM or vendor package that is supplied with the JRE, such as `com.ibm.misc`, you must create a middleware OSGi bundle to make these classes available to the OSGi framework. If you do not change the application, transactions abend with an `AJ05` code and `java.lang.ClassNotFoundException` errors are written to the JVM server error log and CICS system log.

You do not need to complete these steps for the CICS Java classes, as the JCICS classes are automatically made available in the OSGi framework.

### Procedure

1. Check whether your application depends on IBM or vendor classes in the supplied JRE.
2. For each IBM or vendor package that the application requires, create an OSGi bundle fragment to export the package. The following example shows what the manifest of the OSGi bundle fragment can contain:

```
Manifest-Version: 1.0
Bundle-ManifestVersion: 2
Bundle-Name: Extension
Bundle-SymbolicName: com.ibm.example.extension
Bundle-Version: 1.0.0
Bundle-Vendor: IBM
Fragment-Host: system.bundle; extension:=framework
Export-Package: com.ibm.misc
Bundle-RequiredExecutionEnvironment: JavaSE-1.6
```

The `Fragment-Host` defines that the OSGi bundle fragment extends the system bundle in the OSGi framework. The `Export-Package` lists the packages that are exported; in this example, the package beginning `com.ibm.misc` is exported. If you use Eclipse, ignore the error that is flagged.

3. Change the application to add an import for the exported package in the appropriate OSGi bundle manifest. Each OSGi bundle that requires a class from an IBM or vendor package must declare the package in the manifest.
4. Install the OSGi fragment bundle into the JVM server as a middleware bundle. Add the bundle to the `OSGI_BUNDLES` option in the JVM profile for the JVM server. Separate the middleware bundle from the application so that you can manage the lifecycle separately in CICS.
5. Restart the JVM server to pick up the OSGi fragment.
6. Deploy the updated application bundle to CICS.

## Results

The OSGi bundle fragments are loaded when the OSGi framework is initialized. When the application is called, the application can access the IBM or vendor classes.

---

## Chapter 27. Upgrading the CICS-WebSphere MQ connection

If you use the CICS-WebSphere MQ adapter, bridge, trigger monitor, or API crossing exit to connect CICS to WebSphere MQ, check your configuration and make any necessary changes.

When you upgrade to a new version or release of WebSphere MQ, ensure that you specify the new versions of the WebSphere MQ libraries in the STEPLIB and DFHRPL concatenations in your CICS procedure, replacing the previous versions of these libraries. The libraries are *thlqual.SCSQAUTH*, *thlqual.SCSQCICS*, and *thlqual.SCSQLOAD*, where *thlqual* is the high-level qualifier for the WebSphere MQ libraries. The SCSQAUTH library is included in both concatenations, but the SCSQLOAD library and the optional SCSQCICS library are included in the DFHRPL concatenation only. Include the WebSphere MQ libraries after the CICS libraries to ensure that the correct code is used.

### Review availability of TCBs for CICS-WebSphere MQ connection

Before CICS TS for z/OS, Version 3.2, a CICS region used a pool of eight subtask TCBs to connect to WebSphere MQ queue managers. The subtask TCBs were not owned by the CICS tasks that made the requests to connect to WebSphere MQ. When a subtask TCB returned the results of a request to a CICS task, the subtask TCB became available for other CICS tasks that needed to connect to WebSphere MQ.

From CICS TS for z/OS, Version 3.2, a CICS region uses open TCBs in L8 mode to connect to WebSphere MQ queue managers. When a CICS task makes a request to connect to WebSphere MQ, it obtains an L8 TCB from the pool in the CICS region, and keeps the L8 TCB from the time it is allocated to the end of the task. Even if the CICS task switches back to run on the QR TCB or makes no further requests to connect to WebSphere MQ, the L8 TCB is not released until the CICS task ends. Each concurrent CICS task that connects to WebSphere MQ therefore requires one L8 TCB for the duration of the task.

CICS sets the limit for the number of TCBs in the pool of L8 and L9 mode open TCBs automatically. The limit is based on the maximum number of tasks (MXT or MAXTASKS) specified for the CICS region, using the following formula:

$$(2 * \text{MXT Value}) + 32$$

The availability of L8 TCBs within this limit is determined by the number of other CICS tasks that are using L8 or L9 TCBs, such as CICS applications that connect to DB2. A CICS task is allowed at most one L8 TCB, which the task can use for any purpose that requires an L8 TCB. For example, a task that connected to both WebSphere MQ and DB2 would use only one L8 TCB. Within the overall limit set for the TCB pool, there is no specific limit on the number of L8 TCBs that are allocated for CICS tasks that connect to WebSphere MQ queue managers; these tasks can potentially occupy all of the available L8 TCBs in the pool.

CICS tasks that connect to WebSphere MQ require storage in the WebSphere MQ subsystem. When you upgrade from a release earlier than CICS TS for z/OS, Version 3.2, or when the peak number of concurrent CICS tasks that connect to WebSphere MQ changes, review the use of common storage in the WebSphere MQ subsystem. For information about common storage and connections from CICS to



WebSphere MQ, see Common storage in the WebSphere MQ product documentation. For further information about storage and performance requirements in WebSphere MQ, including velocity goals for CICS regions, see Planning your storage and performance requirements in the WebSphere MQ product documentation.

If CICS is connecting to WebSphere MQ Version 6, you might also need to increase your setting for the WebSphere MQ subsystem tuning parameter CTHREAD. Before CICS TS for z/OS, Version 3.2, CICS always took up nine of the connections specified by CTHREAD, plus one for each task initiator (CKTI). From CICS TS for z/OS, Version 3.2, the number of connections depends on the number of CICS tasks that are using L8 TCBS to connect to WebSphere MQ. In WebSphere MQ Version 6, you can change the value of CTHREAD using the WebSphere MQ SET SYSTEM command. From WebSphere MQ Version 7, the CTHREAD parameter cannot be adjusted in WebSphere MQ.

## New CICS resources and commands for CICS-WebSphere MQ connection

To support WebSphere MQ queue-sharing groups, CICS TS 4.1 introduced the MQCONN resource definition and new EXEC CICS and CEMT commands for the CICS-WebSphere MQ connection.

Before CICS TS 4.1, you used the DFHMQPRM operand of the CICS system initialization parameter INITPARM to specify a default WebSphere MQ queue manager name and initiation queue name for the CICS-WebSphere MQ connection. (The DFHMQPRM operand was called CSQCPARM before CICS TS 3.2.) An example of this statement is as follows:

```
INITPARM=(DFHMQPRM='SN=CSQ1,IQ=CICS01.INITQ')
```

You can no longer use the INITPARM system initialization parameter to specify these defaults. If the DFHMQPRM or CSQCPARM operand is present on INITPARM, you must remove it. CICS issues a warning message if the DFHMQPRM operand is present on INITPARM when you start the CICS-WebSphere MQ connection, and defaults specified there are not applied to the CICS-WebSphere MQ connection. The INITPARM system initialization parameter itself is still valid with other operands.

You must now set up an MQCONN resource definition for the CICS region to provide defaults for the connection between CICS and WebSphere MQ. You must install the MQCONN resource definition before you start the connection. The defaults that you specify in the MQCONN resource definition apply when you use the CKQC transaction from the CICS-WebSphere MQ adapter control panels or call it from the CICS command line or a CICS application. CICS uses the defaults when you use the MQCONN system initialization parameter to specify that CICS starts a connection to WebSphere MQ automatically during initialization. This example MQCONN resource definition can replace the example INITPARM statement shown previously:

MQconn	:	MQDEF1	
Group	:	MQDEFNS	
DEscription	==>		
Mqname	==>	CSQ1	
Resyncmember	==>	Yes	Yes   No
Initqname	==>	CICS01.INITQ	



You can specify either a WebSphere MQ queue-sharing group as a default in the MQCONN resource definition, or the name of a single queue manager. To use a WebSphere MQ queue-sharing group, the CICS SVC for CICS TS 4.1 or a higher level must be active for the CICS region. When you install a new level of the CICS SVC, an IPL is required to activate it. Message DFHMQ0325 is issued if a CICS region attempts to connect to a WebSphere MQ queue-sharing group when the CICS TS 4.1 or higher level CICS SVC is not active, and a system dump is taken with the dump code DFHAP0002 and the severe error code X'A0C6'.

You can use new EXEC CICS and CEMT commands to work with the MQCONN resource definition. You can also use the SET MQCONN command to start and stop the CICS-WebSphere MQ connection, as an alternative to issuing CKQC START or STOP commands.

If you use an application program to control the CICS-WebSphere MQ connection, you might experience some new results from the application. For information about these changes, see "Possible application behavior changes for CICS-WebSphere MQ connection." For information about upgrading your application to use the new functions, see "Upgrading your application for CICS-WebSphere MQ connection" on page 240.

## **Support for WebSphere MQ Version 7 API calls**

New or changed CICS applications that use the new API calls in WebSphere MQ Version 7 must be link-edited with the WebSphere MQ API stub modules that are shipped with CICS.

The new API calls are MQBUFMH, MQCB, MQCTL, MQCRTMH, MQDLTMH, MQDLTMP, MQINQMP, MQMHBUF, MQSETMP, MQSTAT, MQSUB, and MQSUBRQ. These Version 7 API calls are only supported in CICS when you use the stubs shipped with CICS, not the stubs shipped with WebSphere MQ. New and existing CICS applications that do not use the Version 7 API calls can use the stubs shipped with CICS or WebSphere MQ.

If you use the new Version 7 API calls MQCB and MQCTL for asynchronous message consumption by CICS applications, you must code your program using information given in the CICS documentation, in addition to the WebSphere MQ programming documentation. The requirements for asynchronous message consumption in a CICS environment are listed in Asynchronous message consumption and callback routines.

---

## **Possible application behavior changes for CICS-WebSphere MQ connection**

You can start the CICS-WebSphere MQ connection from an application in the same way as you did prior to CICS TS 4.1, by issuing an EXEC CICS LINK command to link to program DFHMQQCN (or CSQCQCON, which is retained for compatibility) and passing a set of parameters. However, if you continue to use this method of starting the CICS-WebSphere MQ connection, you might experience some new results depending on the parameters that you use in the application.

If you upgrade your application to use the new SET MQCONN command to control the CICS-WebSphere MQ connection, you can avoid these results. The new results that you might now experience when you use program DFHMQQCN to start the CICS-WebSphere MQ connection are as follows:

**CONNSSN parameter**

If your application uses the CONNSSN parameter to specify the name of a WebSphere MQ queue manager for the connection, CICS connects to this queue manager as before. In addition, your setting for the MQNAME attribute in the installed MQCONN definition is replaced with the name of the queue manager that you specified on the command. If you want to revert to the original queue manager or queue-sharing group, set MQNAME in the resource definition again.

**CONNIQ parameter**

If your application uses the CONNIQ parameter to specify the name of the default initiation queue for the connection, CICS uses that initiation queue name, and the INITQNAME attribute in the installed MQINI resource definition is replaced with the name of the initiation queue that you specified on the command. (MQINI is an implicit resource definition that CICS installs when you install the MQCONN resource definition.)

**INITP parameter**

If your application uses the INITP parameter, which specifies that the default settings are used, these default settings are now taken from the installed MQCONN resource definition, and not from the INITPARM system initialization parameter. The INITP parameter is therefore now known as MQDEF. When MQDEF is set to Y, the setting from the MQCONN resource definition applies as follows:

- If the MQCONN resource definition specifies the name of a WebSphere MQ queue manager in the MQNAME attribute, CICS connects to that queue manager.
- If the MQCONN resource definition specifies a WebSphere MQ queue-sharing group in the MQNAME attribute, CICS connects to any active member of that group. In the event of reconnection, CICS might either connect to the same queue manager or to a different queue manager, depending on the setting for the RESYNCMEMBER attribute in the MQCONN resource definition. You might need to modify your application to take this new behavior into account.

You can stop the CICS-WebSphere MQ connection from an application in the same way as before, by issuing an EXEC CICS LINK command to program DFHMQDSC (or CSQCDSC, which is retained for compatibility). The results of this operation remain unchanged.

---

## Upgrading your application for CICS-WebSphere MQ connection

You can upgrade your application to specify a queue-sharing group, or use the new SET MQCONN command to control the CICS-WebSphere MQ connection instead of linking to another program.

**Procedure**

- In the parameter list that your application passes to DFHMQQCN (or CSQCQCON), the CONNSSN parameter maps to the MQNAME attribute in the installed MQCONN definition. You can therefore now use this parameter to specify either the name of a WebSphere MQ queue-sharing group, or the name of a single WebSphere MQ queue manager.
- As an alternative to using the EXEC CICS LINK command to DFHMQQCN, you can use the new EXEC CICS SET MQCONN CONNECTED command to start the CICS-WebSphere MQ connection. You can specify the name of a

queue-sharing group and suitable resynchronization behavior, or use the settings specified in the MQCONN resource definition for the CICS region.

- You can also use the new EXEC CICS SET MQCONN NOTCONNECTED command to stop the CICS-WebSphere MQ connection. You can specify a force stop or a quiesce stop with the new command, and, in addition, for a quiesce stop you can specify whether control is returned to the application before or after the connection is stopped.
- If you want to enable or disable the CICS-WebSphere MQ API-crossing exit while the connection is active, you must still link to the adapter reset program, DFHMQRS (or CSQCRST, which is retained for compatibility).



---

## Chapter 28. Upgrading the CICS DB2 connection

This information enables you to plan and carry out installation or upgrade procedures in the CICS DB2 environment.

CICS provides an attachment facility (the CICS DB2 adapter) that works with all supported releases of DB2. The CICS DB2 attachment facility is shipped with CICS Transaction Server and you must use this version of the attachment facility to connect a CICS region to DB2. Always use the correct attachment facility for the release of CICS under which a region is running.

With the group attach facility, instead of connecting to a specific DB2 subsystem, you can choose to connect to any one member of a data-sharing group of DB2 subsystems which is active on an MVS image. You can use a common DB2CONN resource, specifying a group ID, across multiple cloned AORs, and reconnect rapidly if the connection to DB2 fails. See Using the DB2 group attach facility for more information.



---

## Chapter 29. Upgrading CICS web support applications

CICS Transaction Server for z/OS, Version 5 Release 2 supports your existing CICS web support architecture for both web-aware and non-web-aware application programs. Existing web-aware application programs that send and receive HTTP messages can work unchanged, until you choose to upgrade them to take advantage of the enhancements described here.

- If you have a CICS region that has experienced performance problems due to long-lived persistent HTTP connections from web clients, you can now use the **MAXPERSIST** attribute in the **TCPIP SERVICE** resource definition for the port to limit the number of persistent connections that the CICS region accepts at any one time. An HTTP/1.1 server should normally allow persistent connections, so only set up connection throttling in a CICS region that has experienced performance problems for this reason. For more information about connection throttling, see *How CICS web support handles persistent connections*.

---

### Implementing connection pooling for client HTTP connections

To activate connection pooling, your CICS web support or web services application programs must specify a **URIMAP** resource with the **SOCKETCLOSE** attribute on the **INVOKE SERVICE** or **WEB OPEN** command. For event processing, the HTTP EP adapter must use a **URIMAP** resource with the **SOCKETCLOSE** attribute.

#### About this task

Connection pooling can provide performance benefits where multiple invocations of CICS web support applications, web services applications, or the HTTP EP adapter make connection requests for a particular host and port, or where a web services application makes multiple requests and responses. Connection pooling does not enhance performance for a single invocation of a user-written CICS web support application, a single web services request and response, or a single event emission.

Connection pooling is specified by the **SOCKETCLOSE** attribute in a **URIMAP** resource with **USAGE(CLIENT)**. **SOCKETCLOSE** defines if, and for how long, CICS keeps a client HTTP connection open after the CICS program has finished using it. After use, CICS checks the state of the connection and then places it in a pool in a dormant state. The dormant connection can be reused by the same application or by another application that connects to the same host and port.

For the client HTTP connections opened by your applications to be pooled after use, ensure that your applications handle the connections as described in the following procedure.

#### Procedure

1. When opening the client (outbound) HTTP connection, specify a **URIMAP** resource with the **SOCKETCLOSE** attribute set.
  - In CICS web support applications, you can specify a **URIMAP** resource on the **WEB OPEN** command to provide the URL for the connection. If you code the URL directly in the application, CICS does not access the **URIMAP** resource and the connection cannot be pooled after use.

- In CICS web services applications that are service requesters, you can specify a URIMAP resource on the **INVOKE SERVICE** command to provide the URI of the web service. If you code the URL directly in the application, or if you use a URI from the web service description, CICS does not access the URIMAP resource.
  - For the HTTP EP adapter, you specify a URIMAP resource in your event binding.
2. Ensure that CICS web support applications do not use the option **CLOSESTATUS(CLOSE)** on any of the **WEB SEND** or **WEB CONVERSE** commands that they issue. **CLOSESTATUS(CLOSE)** requests the server to close the connection, and closed connections cannot be pooled. Previously, the use of this option was suggested as best practice when the application sent its last request to the server, but it was not a required action.
  3. Ensure that CICS web support applications issue the **WEB CLOSE** command when they have completed their use of the client HTTP connection. Previously, CICS closed the connection when the application issued this command. Now, the command notifies CICS that the application has finished using the connection. If connection pooling is in use, CICS leaves the connection open and places it in the pool after checking. If connection pooling is not in use, CICS closes the connection as before. In CICS web services applications, the **INVOKE SERVICE** command completes the application's use of the connection, so CICS web services applications do not need to issue any additional commands to complete their use of the connection.

## What to do next

If your applications already use URIMAP resources when opening outbound connections, and your CICS web support applications issue the **WEB CLOSE** command and do not use the option **CLOSESTATUS(CLOSE)** on any commands, you do not need to make any changes to your applications to implement connection pooling. You can specify the **SOCKETCLOSE** attribute on the URIMAP resources that are already used by your CICS web support and web services applications and by the HTTP EP adapter. The session token used by CICS web support applications does not persist on a pooled connection, so your applications reuse a pooled connection in exactly the same way as they use a new connection.

If you do not currently use URIMAP resources for CICS web support and web services client requests, and you want to implement connection pooling, you must set up URIMAP resources for the relevant client requests, and change your applications to specify the URIMAP resources when opening the connections. Make sure CICS web support applications also issue the **WEB CLOSE** command and do not use the option **CLOSESTATUS(CLOSE)** on any commands. When you start to use URIMAP resources for client requests, in addition to enabling connection pooling, you enable systems administrators to manage any changes to the endpoint of the connection, and you do not need to recompile applications if the URI of a service provider changes.

---

## Upgrading Atom feeds from SupportPac CA8K

If you set up Atom feeds using the CA8K SupportPac in CICS TS for z/OS, Version 3.1 or CICS TS for z/OS, Version 3.2, you can use these unchanged in CICS TS for z/OS, Version 5.2, or you can upgrade them to use the CICS TS for z/OS, Version 5.2 support for Atom feeds.



## About this task

CICS TS for z/OS, Version 5.2 supports Atom feeds that were set up with the CA8K SupportPac. If you do not want to upgrade your Atom feed yet, you must retain all the resources unchanged, and continue to use the PIPELINE resource support instead of the new ATOMSERVICE resource support.

When you upgrade Atom feeds from the CA8K SupportPac, you can continue to use your service routines after some modifications. However, you must replace most of the supporting resources, such as pipeline configuration files, with their CICS TS for z/OS, Version 5.2 replacements, such as Atom configuration files. You can use the CICS Explorer to set up the resources that you need for an Atom feed in CICS TS for z/OS, Version 5.2.

Table 24 summarizes the resources used for an Atom feed with the CA8K SupportPac, and how they are reused or replaced in CICS TS for z/OS, Version 5.2 support for Atom feeds.

*Table 24. Reusing SupportPac CA8K resources*

SupportPac CA8K resource	CICS TS for z/OS, Version 5.2 usage
URIMAP resource (samples DFH\$W2U1 and DFH\$W2V1)	Can be reused, with change from USAGE(PIPELINE) to USAGE(ATOM), or CICS creates a URIMAP resource automatically when you use the CICS Explorer to set up the resources for your Atom feed
PIPELINE resource (samples DFH\$W2F1 and DFH\$W2Q1)	Replace with ATOMSERVICE resource; CICS creates an ATOMSERVICE resource automatically when you use the CICS Explorer to set up the resources for your Atom feed
Pipeline configuration file	Replace with Atom configuration file
Terminal handler parameter list in pipeline configuration file	Most elements can be reused in Atom configuration file, except <cics:layout> element using DFDL, which is no longer required (the XML binding now describes the structure of the resource)
Message handler program (samples DFH\$W2FD and DFH\$W2SD)	No longer required; CICS performs this processing
Service routine (samples DFH\$W2TS and DFH0W2FA)	Can be reused, with some modifications. The sample service routine DFH0W2F1 is an updated version of DFH0W2FA, and a new sample service routine DFH\$W2S1 is provided
Resource Layout Mapping structure	Replace with XML binding
CICS resource containing Atom feed data (such as temporary storage queue)	Can be reused unchanged

Follow these steps to upgrade or replace each of your SupportPac CA8K resources to create a CICS TS for z/OS, Version 5.2 Atom feed:

## Procedure

1. Modify your service routine as follows:
  - a. Rename the ATOMPARAMETERS container to DFHATOMPARGS.

- b. Rename the ATOMCONTENT container to DFHATOMCONTENT.
- c. If you used the optional containers ATOMTITLE and ATOMSUMMARY, rename these to DFHATOMTITLE and DFHATOMSUMMARY. If you used the optional container ATOMSUBTITLE, discard this container, as subtitles are not valid for an Atom entry, only for an Atom feed.
- d. Replace the references to the copybooks that mapped the parameters passed in the ATOMPARAMETERS container, with the copybooks that map the DFHATOMPARMS container, as follows:

Copybook	Replace with
DFH\$W2PD for Assembler	DFHW2APD
DFH0W2PO for Cobol	DFHW2APO
DFH\$W2PL for PL/I	DFHW2APL
DFH\$W2PH for C	DFHW2APH

The parameters in the container are listed in the *CICS Internet Guide*. The following parameters from the list in SupportPac CA8K are no longer used:

- **ATMP\_RLM**, which pointed to the Resource Layout Mapping structure
- **ATMP\_KEY\_FLD**
- **ATMP\_SUBTITLE\_FLD**

A number of new parameters are added in the DFHATOMPARMS container, and there are also some new bit values in **ATMP\_OPTIONS**.

- e. Replace the references to the copybooks that contained the constant definitions referenced by the copybooks for the ATOMPARAMETERS container, with the copybooks that contain the new constant definitions, as follows:

Copybook	Replace with
DFH\$W2CD for Assembler	DFHW2CND
DFH0W2CO for Cobol	DFHW2CNO
DFH\$W2CL for PL/I	DFHW2CNL
DFH\$W2CH for C	DFHW2CNH

- f. Check the instructions in the *CICS Internet Guide* to see whether you want to make any additional modifications to your service routine to take advantage of new features. You might want to use some of the additional containers and parameters that are available for returning data.

When you have made these changes, recompile the modules for the service routine.

2. Use the CICS XML assistant program DFHLS2SC to produce an XML binding for the resource that contains the data for your Atom feed. The XML binding replaces the <cics:layout> element in the pipeline configuration file, and also the Resource Layout Mapping structure. To create an XML binding, you must have a high-level language structure, or copybook, in COBOL, C, C++, or PL/I, that describes the structure of the records in the resource. For instructions to use DFHLS2SC, see the *CICS Application Programming Guide*.
3. Follow the instructions in the *CICS Internet Guide* to use the CICS Explorer to set up and deploy a bundle project for an Atom feed. You create an Atom configuration file in the bundle project. You can edit the Atom configuration file to reuse most of the elements from your terminal handler parameter list. If you edit the Atom configuration file using an XML editor or a text editor, make

sure that you follow the new nesting structure for those elements in the Atom configuration file. The elements that you can reuse from your terminal handler parameter list are as follows:

- a. Reuse the <cics:resource> element, which specifies the name and type of the CICS resource that provides the data for the feed.
- b. Reuse the <cics:fieldnames> element, which specifies the fields in your CICS resource that provide metadata for the Atom entries. Rename the "id" attribute as "atomid". Some new attributes are also available for this element in the Atom configuration file.
- c. Reuse the <atom:feed> element and its child elements, which specify metadata for the Atom feed.
- d. Reuse the <atom:entry> element and its child elements, which specify metadata and name the resource that provides the content for the Atom entries.

The <cics:layout> element, which described the CICS resource using the Data File Descriptor Language (DFDL), is no longer required.

When you deploy the bundle project to your CICS region and install the BUNDLE resource, CICS creates ATOMSERVICE and URIMAP resources that you can use for your Atom feed.

4. If you want to use your existing URIMAP resource for your Atom feed instead of the one that CICS created, modify your existing resource to point to the ATOMSERVICE resource in place of a PIPELINE resource.
  - a. Change USAGE(PIPELINE) to USAGE(ATOM).
  - b. Delete the PIPELINE attribute.
  - c. Add the ATOMSERVICE attribute, specifying the name of the ATOMSERVICE resource that CICS created when you installed the BUNDLE resource.
  - d. Change the TRANSACTION attribute to specify CW2A, the default alias transaction for Atom feeds, or another alias transaction that runs DFHW2A, the W2 domain alias program. The *CICS Internet Guide* explains how to set up an alternative alias transaction.

## Results

When you have completed these steps, your upgraded Atom feed is ready for use in CICS TS for z/OS, Version 5.2.



---

## Chapter 30. Upgrading SOAP web services

If you have used SOAP web services in earlier CICS releases, be aware of the following changes when you upgrade to CICS Transaction Server for z/OS, Version 5 Release 2.

- WEBSERVICE resources can now be defined and packaged in CICS bundles. The resource is dynamically installed in the CICS region when you install the BUNDLE resource. You can import a web service binding file and a WSDL document or WSDL archive file to be packaged with the resource definition, and for a service provider you can include a PROGRAM definition in the bundle. You can also use an existing WEBSERVICE definition in a CICS bundle to generate related URIMAP resources and alias transactions.
- SOAP message validation is now performed in a JVM server. To enable SOAP message validation, you must set up a JVM server in the CICS region. JVM servers can run different workloads, and SOAP validation can run in a JVM server that is configured to support an OSGi framework or Axis2. SOAP validation cannot run in a Liberty JVM server.
- To enable SOAP message validation, the DFHPIVAL program must refer to a JVMSERVER resource. By default, the program uses the sample JVM server DFHJVMS. To change the JVM server, edit the DFHPIVAL definition in group DFHPIVAL.
- Connection pooling can provide performance benefits where a service requester application makes multiple requests and responses. When you implement connection pooling, CICS keeps the client HTTP connection open after the application finishes making its request and receiving its response. The application can reuse the connection to make further requests and responses, rather than opening a new connection each time. Connection pooling is specified on the URIMAP resource for a client HTTP connection, so the application must specify a URIMAP resource on the INVOKE SERVICE command. For more information about connection pooling, see “Implementing connection pooling for client HTTP connections” on page 245.
- A pipeline scan now produces a second URIMAP resource for each WSDL document that is present in the pickup directory. This URIMAP resource defines a URI that points to the location of the WSDL document. You can use this URI to publish WSDL documents so that external requesters can create web service applications.
- The performance of XML parsing in CICS improved with the introduction of the IBM z/OS XML System Services (XMLSS) parser, which can be accessed directly from CICS. The XMLSS parser uses above-the-bar storage, so there is more below-the-bar storage available for user programs. The XMLSS parser also allows XML parsing to be offloaded to an IBM System z® Application Assist Processor (zAAP). The zAAP-eligible proportion of the infrastructure for a web service is small, but if zAAP capacity is available then this can reduce the cost of hosting web services in CICS.  
For more information on zAAP, see IBM Redbooks: zSeries Application Assist Processor (zAAP) Implementation.
- Improvements in the XML parsing of SOAP messages mean that some malformed SOAP messages that were previously tolerated by CICS are now rejected.

For more information on XML parsing in z/OS, see the *z/OS XML System Services User's Guide and Reference* on the IBM z/OS XML System Services Library page.

- Web Services Atomic Transactions (WS-AT) use Web Services Addressing (WS-Addressing) elements in their SOAP headers. The default namespace prefix for these WS-Addressing elements changed from wsa to cicswsa.

## Data mapping

SOAP web services are enhanced to provide additional data mapping.

CICS now provides data mapping to support COBOL OCCURS DEPENDING ON and OCCURS INDEXED BY clauses.

- The OCCURS DEPENDING ON clause is supported at a mapping level of 4.0 or higher. Complex OCCURS DEPENDING ON is not supported. This limitation means that OCCURS DEPENDING ON is only supported for the last field of a structure.
- The OCCURS INDEXED BY clause is supported at any mapping level.

CICS now provides support for transforming application data encoded in UTF-16 at a mapping level of 4.0 or higher.

- You can enable this behavior by using language-specific data types for UTF-16 when you use the DFHLS2JS, DFHLS2SC, or DFHLS2WS assistants.
- You can enable this behavior by setting CCSID=1200 when you use the DFHJS2LS, DFHSC2LS, or DFHWS2LS assistants.

---

## Chapter 31. Upgrading JSON web services

If you used JSON web services in earlier releases, be aware of the following changes when you upgrade to CICS Transaction Server for z/OS, Version 5 Release 2.

In previous releases support for JSON web services was provided by CICS TS Feature Pack for Mobile Extensions. In CICS TS 5.2 this function is incorporated into CICS, therefore there is no longer a requirement to install the feature pack.

JSON web services are enhanced to provide additional data mapping.

CICS now provides data mapping to support COBOL OCCURS DEPENDING ON and OCCURS INDEXED BY clauses.

- The OCCURS DEPENDING ON clause is supported at a mapping level of 4.0 or higher. Complex OCCURS DEPENDING ON is not supported. This limitation means that OCCURS DEPENDING ON is only supported for the last field of a structure.
- The OCCURS INDEXED BY clause is supported at any mapping level.

CICS now provides support for transforming application data encoded in UTF-16 at a mapping level of 4.0 or higher.

- You can enable this behavior by using language-specific data types for UTF-16 when you use the DFHLS2JS, DFHLS2SC, or DFHLS2WS assistants.
- You can enable this behavior by setting CCSID=1200 when you use the DFHJS2LS, DFHSC2LS, or DFHWS2LS assistants.

---

### Upgrading the JSON web services assistant

In previous releases, the JSON assistant batch jobs DFHJS2LS and DFHLS2JS were provided as part of CICS TS Feature Pack for Mobile Extensions. These functions are now incorporated into CICS TS, so you must change any JCL that calls the assistant.

#### Procedure

1. Change the JCL procedure library where DFHJS2LS or DFHLS2JS are located. In CICS TS 5.2, these batch jobs are in the HLQ.XDFHINST library.
2. Review the values of the symbolic parameters **JAVADIR**, **PATHPREF**, and **USSDIR**. In CICS TS 5.2, you might not need to specify them at all, as the DFHJS2LS and DFHLS2JS procedures are customized by DFHISTAR. For more information about these parameters, see DFHJS2LS: JSON schema to high-level language conversion for request-response services and DFHLS2JS: High-level language to JSON schema conversion for request-response services.





---

## Chapter 32. Upgrading SAML support

If you used Security Assertion Markup Language (SAML) support in earlier CICS releases, follow this procedure to upgrade to CICS Transaction Server for z/OS, Version 5 Release 2.

### About this task

In previous releases, support for SAML was provided by CICS TS Feature Pack for Security Extensions V1.0. In CICS TS 5.2, this function is incorporated into CICS and the feature pack is not supported.

### Procedure

1. Copy your STS configuration file to a new location on z/OS UNIX to use with the new CICS release.
2. Upgrade your `java.policy` file.

- a. If you are using a user `java.policy` file, copy it to a new location on z/OS UNIX to use with the new CICS release.

- b. Update the following rule to refer to the new CICS root directory.

```
:// All permissions granted to CICS codesource protection domain
grant codeBase "file://USSHOME/-" {
  permission java.security.AllPermission;
};
```

where *USSHOME* is the name and path of the root directory for CICS Transaction Server files on z/OS® UNIX.

- c. Remove the rule that applies to the feature pack files:

```
grant codeBase "file:fp_dir-" { permission java.security.AllPermission;
};
```

where *fp\_dir* is the Feature Pack installation directory.

3. Upgrade your JVM profile by following the general instructions for upgrading JVM profiles, which are given in Chapter 26, "Upgrading the Java environment," on page 223. Perform the following additional steps:
  - a. Delete the `CLASSPATH_SUFFIX` line from your JVM server profile.
  - b. If you are using a user `java.policy` file, update the `java.security.policy` property to refer to the new location of this file.
4. When no CICS instances are using it, uninstall the feature pack.



---

## Chapter 33. Upgrading platforms, applications, policies, and CICS bundles

If you have used platforms, applications, policies, and CICS bundles in CICS in earlier releases, be aware of the following changes when you upgrade to CICS Transaction Server for z/OS, Version 5 Release 2.

---

### Requirements for application entry points and operation names

In CICS regions from CICS TS 5.2, applications that are deployed on platforms must have application entry points declared for all the resources that are an access point to the application. Application entry points are now used to control users' access to different versions of an application that is deployed on a platform. An application that defines a PROGRAM resource cannot be made available to callers in CICS TS 5.2 regions unless it declares an application entry point for that resource.

The resource for an application entry point does not have to be defined in the same CICS bundle as the application entry point. CICS adds the application operation to the specified resource when the application is installed. For PROGRAM resources that are declared as application entry points, the application entry point controls users' access to the program regardless of the location of the PROGRAM resource. However, for URIMAP resources that are declared as application entry points, the application entry point only controls access to the URIMAP resource if it is declared in the same CICS bundle where the URIMAP resource is defined.

You can declare an application entry point for a resource that is not defined in any CICS bundle, but already exists in the CICS regions where the bundle will be deployed. You can also declare an application entry point for a PROGRAM resource that can be autoinstalled in the CICS regions where the bundle will be deployed. When you install an application, if the resource targeted by an application entry point is not present and cannot be autoinstalled, the CICS bundle containing the declaration of the application entry point does not install and is marked with a warning.

CICS bundles that are installed as part of platform bundles, or added to a running platform, must not contain declarations of application entry points in the bundle manifest. Application entry points are not supported for CICS bundles installed directly on platforms, and CICS does not enable the application entry points in this situation, although the CICS bundle and its resources are installed. Standalone CICS bundles that are installed directly in CICS regions can contain declarations of application entry points to enable scoping of region level policies.

Application entry points only control users' access to the resources that are specified in the application entry points. If an application includes any public resources that are not named as application entry points, when the application is installed and enabled, these resources can be accessed by other applications installed on the platform or in the CICS region regardless of the availability status of the application. Private resources for an application version cannot be accessed by other applications.

Each application entry point names an operation. For example, you could declare application entry points for create, read, update, or delete operations in the application. In CICS regions from CICS TS 5.2, an operation name must now be unique within an application. An application cannot be made available to callers in CICS TS 5.2 regions if it contains duplicate operation names. Operation names are case sensitive, so you may use operation names that are differentiated only by case, such as “browse” and “Browse”.

---

## Making applications and CICS bundles available

A new availability status has been introduced for applications that are deployed on platforms, so that you can install and verify installation of an application version before making the application version available to users of the platform.

Applications that are deployed on platforms therefore now require an additional step to make them available for users in CICS regions from CICS TS 5.2. After installing and enabling the application, you must perform the **Make Available** action in the CICS Explorer to make the application available to users.

You can make an installed application version available or unavailable in the Cloud Explorer view, or in the online application editor for installed applications. Making an application available makes the application entry points, and therefore the resources for the application, available to callers. For more details, see “Multi-versioning for applications deployed on platforms” on page 265.

Standalone CICS bundles must also be made available in CICS regions from CICS TS 5.2 if they contain application entry points. After installing and enabling the CICS bundle, you can perform the **Make Available** action in the CICS Explorer, or use the new AVAILSTATUS option on the **EXEC CICS SET BUNDLE** command to set the status of the CICS bundle to AVAILABLE.

Before you disable or discard an application that is deployed on a platform in CICS regions from CICS TS 5.2, you must perform the **Make Unavailable** action in the CICS Explorer. Before you disable or discard a standalone CICS bundle that contains application entry points, you must perform the **Make Unavailable** action in the CICS Explorer, or use the AVAILSTATUS option on the **EXEC CICS SET BUNDLE** command to set the status of the CICS bundle to UNAVAILABLE.

If your platform includes any CICS regions that are still at CICS TS 5.1, the **Make Available** and **Make Unavailable** actions are not required or supported for applications or standalone CICS bundles installed in those CICS regions. In CICS TS 5.1 regions, applications or standalone CICS bundles are assumed to be available when they have been enabled using the **Enable** action, and unavailable when they have been disabled using the **Disable** action, as was the case for all applications in CICS TS 5.1.

The availability status of an application version is not applied at the start of a CICS region that is defined as part of a platform, and it is not recovered during a restart of a CICS region. The CICS bundles for all application versions are in an unavailable state in a started or restarted CICS region. Use the Cloud Explorer view in the CICS Explorer to make the appropriate version of the application available.

CICS bundles that are deployed with platform bundles, or added to a platform, do not require the **Make Available** and **Make Unavailable** actions, because these actions are performed on the application entry points for applications.

---

## Changes to resources defined in CICS bundles

You can now create resource definitions in CICS bundles for the additional CICS resource types FILE, JVMSERVER, PIPELINE, TCPIPService, and WEBSERVICE. You can issue commands to change the status of dynamically generated JVMSERVER and TCPIPService resources. A URIMAP resource defined in a CICS bundle can be specified as an application entry point to control access to the service that it provides.

You use new wizards in the CICS Explorer to define FILE, JVMSERVER, PIPELINE, TCPIPService, and WEBSERVICE resources in CICS bundles.

When you define resources in CICS bundles, they can be packaged, deployed, and managed as part of applications on a platform. You can also deploy the CICS bundles at the level of the platform, to provide services to all the applications on the platform, or you can install them as standalone CICS bundles in CICS regions that are not part of a platform.

The full list of CICS resource types for which you can create resource definitions in CICS bundles is as follows:

- FILE
- JVMSERVER
- LIBRARY
- PIPELINE
- PROGRAM
- TCPIPService
- TRANSACTION
- URIMAP
- WEBSERVICE

For the list of all artifacts that you can define and deploy in CICS bundles, including OSGi bundles and events, see *Artifacts that can be deployed in bundles* in *Administering*.

Some characteristics of CICS resources change because they are defined in a CICS bundle and dynamically created as part of a bundle deployment.

### FILE resources

The following file types are supported for definition in CICS bundles:

- VSAM files (including files that refer to CICS-maintained, user-maintained, and coupling facility data tables, as well as files that refer to VSAM data sets)
- Remote VSAM files
- Remote BDAM files

The initial status of a FILE resource that is dynamically created from a CICS bundle is derived from the initial status of the CICS bundle that defines the resource. As a result, it is not possible to define a FILE resource with a STATUS of UNENABLED to inhibit the implicit opening of files by applications.

The PASSWORD attribute is not supported for dynamically created FILE resources.

## JVMSERVER resources

For JVM servers that are packaged in CICS bundles, the JVM profiles are packaged with the resource definitions in the CICS bundles. You can therefore install the JVM server in any CICS region without needing to set up a JVM profile in the local JVM profile directory for the CICS region.

When creating a JVM server, you can create the JVM profile using sample templates for an OSGi JVM server, an Axis2 JVM server, or a Liberty JVM server, or import an existing JVM profile to the CICS bundle from elsewhere in the workspace or from the local file system.

The set of acceptable characters in the JVM profile name is more restricted when the JVMSERVER resource is defined in a CICS bundle. For details, see JVMSERVER attributes.

A JVM server that is defined in a CICS bundle must be installed and enabled before you install OSGi bundles or other application artifacts for Java applications that run in it. It is good practice to deploy a CICS bundle containing the definition for a JVMSERVER resource as part of a platform bundle, and to then deploy the CICS bundles containing OSGi bundles or other Java application artifacts as part of applications that are deployed on the platform. This architecture ensures that when the resources are first installed in a CICS region or if the CICS region is restarted, the JVM server and the Java application resources are installed and enabled in the correct order.

## PIPELINE resources

For pipelines that are packaged in CICS bundles, the pipeline configuration files are also packaged with the resource definitions in the CICS bundles. You can create a pipeline configuration file using one of the CICS-supplied sample pipeline configuration files, or import an existing pipeline configuration file from the local file system.

If a PIPELINE resource is packaged in a CICS bundle, it should be deployed as part of a platform for hosting WEBSERVICE resources that are defined using CICS bundles. PIPELINE resources that are defined in CICS bundles can only be used with WEBSERVICE resources that are defined in CICS bundles or created dynamically by a pipeline scan. WEBSERVICE resources defined using the CICS CSD or BAS are not compatible with PIPELINE resources that are defined in CICS bundles.

A PIPELINE resource that is packaged in a CICS bundle must be installed and enabled before you install the WEBSERVICE resources that require it. It is good practice to deploy a CICS bundle containing the definition for a PIPELINE resource as part of a platform bundle, and to then deploy the CICS bundles containing WEBSERVICE resources as part of applications that are deployed on the platform. This architecture ensures that when the resources are first installed in a CICS region or if the CICS region is restarted, the PIPELINE resource and the WEBSERVICE resources are installed and enabled in the correct order.

A PIPELINE resource that is defined in a CICS bundle can specify a WSDIR attribute, but this is discouraged. The SHELF attribute is not used for PIPELINE resources that are defined in CICS bundles.

## WEBSERVICE resources

For web services that are packaged in CICS bundles, you can import a web service binding file and a WSDL document or WSDL archive file to be packaged in the bundle along with the resource definition. To support the web service, you can use a WEBSERVICE definition packaged in a CICS bundle to generate a URIMAP definition in a separate bundle. You can also create an alias transaction for the URI map, and an optional URIMAP definition for WSDL discovery.

Web services that are packaged in CICS bundles have additional states of **DISABLING** and **DISABLED**, which do not apply to web services created using other methods. When disabling is in progress for a CICS bundle, WEBSERVICE resources defined in the bundle enter **DISABLING** state. Work that is currently executing is allowed to complete, but the web service does not accept new work. When the web service is no longer in use, the WEBSERVICE resource enters **DISABLED** state. Requests to a web service in **DISABLING** or **DISABLED** state are rejected and a SOAP fault, “Web service is not in service”, is sent. If CICS is the web service requester, the **INVOKE SERVICE** command returns a **RESP** code of **INVREQ** and a **RESP2** value of 8.

If the CICS bundle is enabled again, the WEBSERVICE resource returns to **INSERVICE** state. Otherwise, the WEBSERVICE resource can be discarded by discarding the CICS bundle. You can inquire on the state of a WEBSERVICE resource using the **EXEC CICS** or **CEMT INQUIRE WEBSERVICE** command, the CICSplex SM web user interface, or the CICS Explorer, but you cannot set it manually.

## Direct access to bundle resources

You can now issue commands to change the status of certain CICS resources that are defined in a CICS bundle and dynamically generated in the CICS region. With this function, in a situation that requires immediate removal of a resource, you can force completion of the disable process when the resources are still in use.

With the default disable process, **FILE**, **JVMSEVER**, and **TCPIP SERVICE** resources are not disabled until all the current tasks have finished using them. When these resources are defined in a CICS bundle, you must first disable the CICS bundle or the application with which it is deployed. If the disable process does not complete, because the resource is still in use, you can now take the following actions:

- For a **JVMSEVER** resource, if you want to disable the JVM server immediately and purge the tasks that are running in it, you can use the **SET JVMSEVER PURGE**, **FORCEPURGE**, or **KILL** command on the dynamically generated resource in the CICS region. You can also perform this action in CICS Explorer.
- For a **TCPIP SERVICE** resource, if you want to disable the service immediately and close all the connections, you can use the **SET TCPIP SERVICE IMMCLOSE** command on the dynamically generated resource in the CICS region. You can also perform this action in CICS Explorer.
- If you are experiencing a problem with disabling a CICS bundle that defines a **FILE** resource, you may issue the **EXEC CICS SET FILE DISABLED** or **EXEC CICS SET FILE CLOSED** command with the **FORCE** option, or the **CEMT SET FILE FORCECLOSE** command, against the dynamically generated resource, if this action is required. CICS also issues message **DFHFC6043** when you have attempted to disable a file defined in a CICS bundle, but the file is still in use, or there is a retained lock on the file.



Follow the troubleshooting procedure in Diagnosing application errors to diagnose the problem and take suitable action.

The **EXEC CICS SET BUNDLE** command also has a new option **AVAILSTATUS** to make available or unavailable an individual CICS bundle that contains application entry points. This action is normally performed using the CICS Explorer at the level of the application that packages the CICS bundle, but you can use the command to operate directly on the individual CICS bundle.

## **URIMAP resources as application entry points**

When you define a URIMAP resource in a CICS bundle, you can use an application entry point declaration to control users' access to the service provided by the URIMAP resource. For this function, declare the application entry point and define the URIMAP resource in the same CICS bundle. In this case, when you install and enable the application, the service provided by the URIMAP resource is not yet available to callers. When you choose to provide the service to users, you make the CICS bundle containing the application entry point and the URIMAP resource available using the CICS Explorer. This action makes the application entry point, and therefore the service provided by the URIMAP resource, available to callers.

If you do not want the application entry point to control access to the service provided by the URIMAP resource, declare the application entry point and define the URIMAP resource in different CICS bundles. You can also declare as an application entry point a URIMAP resource that is defined outside the application and declared as a dependency, or import, for the application. In either of these cases, the service becomes available to users as soon as you install and enable the URIMAP resource.

---

## **Private resources for application versions on platforms**

When you define certain CICS resources in CICS bundles as part of an application installed on a platform, the resources are private to that version of that application. You can therefore install more than one resource of those types with the same name, at the same time.

This facility avoids resource name clashes between applications that were developed independently, but used the same resource names. The requirement for unique resource names for the supported CICS resources can be removed by managing the resources as part of applications deployed on a platform. You can use this process to assist with server consolidation.

For supported resource types, a CICS resource is private if the resource is defined in a CICS bundle that is packaged and installed as part of an application, either as part of the application bundle, or as part of the application binding. When you create a CICS resource in this way, the resource is not available to any other application or version installed on the platform, and it is not available to other applications in the CICS region. It can only be used by the version of the application where the resource is defined. These resources are known as private resources.

The following CICS resources are supported as private resources for applications:

- **LIBRARY** resources, which represent one or more data sets, known as dynamic program **LIBRARY** concatenations, from which program load modules can be loaded.



- PROGRAM resources, which represent an application program. A program that is auto-installed by a task for an application that is deployed on a platform is also private to that version of the application.

CICS resources of other resource types that are defined as part of applications, and CICS resources that are defined by any other methods, are publicly available for all tasks. These resources are known as public resources. In applications that have only a single version, private resources that are declared as application entry points become public resources when the application entry point is made available. For multi-versioned applications, if the application is the highest available version, a program that is declared as an application entry point is public. The programs that are declared as application entry points for the other versions of the same application are private.

If you do not want a resource of the supported resource types to be private, do not package the resource definition as part of an application. Instead, define the CICS resource using a standalone CICS bundle, a CICS bundle that is installed at the level of a platform, the CICS CSD, or the CICSplex SM data repository. If an application requires the CICS resource to be available in the CICS region, add the resource as a dependency for the application or the application binding, in an `<import>` element of the bundle manifest.

Policies, which are not a CICS resource, have the same support as private resources when they are defined in a CICS bundle that is deployed as part of an application. You can therefore use policies with the same name in different applications and application versions.

## Managing private resources in CICS bundles

When you make changes to an application, you use the CICS Explorer to modify the relevant elements of the application that are packaged in CICS bundles, apply a new version number to those CICS bundles to identify the change, and then reversion and reinstall the application. You leave any unmodified CICS bundles at the same version number as before, because CICS manages the process of multiple installations of CICS bundles with the same ID and version number.

Reinstallation of unmodified CICS bundles is only available for CICS bundles that are installed as part of an application deployed on a platform. Standalone CICS bundles cannot be reinstalled if they are already installed with the same ID and version, or in the case of CICS bundles created in releases before CICS TS 5.1, installed with no ID and version. However, the same CICS bundle can be installed in CICS regions as a standalone CICS bundle, and also installed and reinstalled as part of one or more applications deployed on a platform.

Special CICS messages are issued when actions such as installing and discarding are performed on private resources. The messages provide the same information as for the corresponding actions on public resources of that type, but they also state the platform, application, and application version to which the private resource applies, so that you can audit or troubleshoot the actions in the relevant context.

To view the private resources for each installed version of an application, use the CICS Explorer. In the online application editor, you can view the private resources and the application entry points for the application by resource type, and filter them by CICS region or by CICS bundle to help locate particular resources. You can also view the DD names that z/OS has generated for the LIBRARY concatenation of data sets for private LIBRARY resources.

You can inquire on or browse private resources using the **EXEC CICS INQUIRE** system programming command for the resource type. By default, CICS searches for the resources that are available to the program where the **EXEC CICS INQUIRE** command is issued. You can also choose to browse private resources for a specified application.

CICS produces separate statistics records for private resources. A statistics record for a private resource has information about the application for which the resource was defined. The statistics DSECTs and DFHSTUP reports for public program and library resources have corresponding DSECTs and DFHSTUP reports for private resources. Programs that are declared as application entry points are identified and reported in both the public and private statistics, because, while the entry point is publicly accessible, it is also part of the application.

## Private **LIBRARY** resources in CICS bundles

LIBRARY resources represent one or more data sets, known as dynamic program LIBRARY concatenations, from which program load modules can be loaded. The LIBRARY resource is supported as a private resource for an application version. Each version of an application should include at least one private LIBRARY resource representing the version-specific data sets containing the load modules for the application.

If any of the private LIBRARY concatenations for an application are disabled, because the CICS bundle that defines the relevant LIBRARY resource is disabled, CICS does not search any other private LIBRARY concatenations, or any public LIBRARY concatenations that are defined for the whole CICS region. All subsequent program loads by the application therefore fail until the CICS bundle that defines the LIBRARY resource is enabled.

For a private LIBRARY resource that is defined in a CICS bundle that is packaged and installed as part of an application bundle or application binding bundle, the name of the LIBRARY resource is not used as the DD name for the LIBRARY concatenation of data sets. Instead, CICS requests a unique DD name for the LIBRARY concatenation of data sets when the application is installed on the platform. The resource name can therefore be the same as LIBRARY names used elsewhere in the installation, or by different versions of the application. CICS issues message DFHLD0518 to state the DD name that z/OS has generated for the LIBRARY concatenation. You can also view the data set names for an installed application in the CICS Explorer.

## Private **PROGRAM** resources in CICS bundles

A PROGRAM resource represents a program load module that is stored in the program library. The PROGRAM resource is supported as a private resource for an application version. A program that is auto-installed by a task for an application that is deployed on a platform is also private to that version of the application.

Only one copy of each version of each program is loaded in CICS storage. Before loading a private program, CICS checks whether that version of the program has already been loaded from the same data set (PDS or PDSE) with a matching PROGRAM resource definition. If so, CICS uses the existing copy. The following rules therefore apply when you are reusing PROGRAM resource names:

- Multiple applications that are intended to share the same program loaded from the same PDS or PDSE must use the same attributes in the PROGRAM resource definition.

- If multiple applications use the same name for different program resources, each application must load the programs from a different data set (PDS or PDSE).

If you specify **RELOAD=YES** in the PROGRAM resource definition for a private program, its behavior for program loading changes to be the same as for a public program. A program control link, load, or XCTL request brings a fresh copy of the program into storage. RELOAD(YES) programs cannot be reused, and they cannot be shared by multiple applications. Each of the program copies must be removed from storage explicitly, using a storage control FREEMAIN request, when it is no longer required and before the transaction terminates.

If a program that is required by an application is not found in the private program directory for the application, CICS searches the public program directory.

Programs that are declared as an application entry point must have a unique PROGRAM resource name in your environment. To enable these programs to be called from outside the application, they must be public resources. When you make an application available that contains an application entry point for a private PROGRAM resource, the PROGRAM resource that is named as the application entry point changes from a private resource to a public resource. Only one instance of a public resource with a particular name can exist in a CICS region. The PROGRAM resource therefore cannot have the same name as a public program that is installed in the CICS region, or the same name as a public program that is defined as an application entry point by a different installed application. However, multiple versions of the same PROGRAM resource defined as an application entry point can be installed for multiple versions of the same application, because CICS manages the promotion of PROGRAM resources to public status for the versions of an application.

---

## Multi-versioning for applications deployed on platforms

You can now install and manage multiple versions of an application at the same time on the same platform instance. New versions of an application can be deployed to the platform without the need to disable or remove the previous version. When you have installed and enabled a version of an application, you take an additional step to make it available to users.

Applications deployed on platforms that use the CICS resources that are supported as private resources, in combination with other resources designed for applications and with imported resources, are eligible for multi-versioning. The following resources are supported as part of multi-versioned applications:

- PROGRAM resources defined in CICS bundles that are part of the application
- LIBRARY resources defined in CICS bundles that are part of the application
- Policies
- Statements of application entry points
- Any resource that is defined as a dependency, or import, for the application

For more details about the CICS resources that are supported as private resources, see Private resources for application versions in Configuring.

Other resources may be involved with multi-versioned applications if you manage the resources appropriately to avoid resource name clashes between different versions of the application. For example, a URIMAP resource that is part of an application can be renamed when packaging and installing a new version of the application. Or an application can be architected so that a resource not supported for multi-versioning is managed outside the application, but declared as a

dependency, or import, for the application. For resources that are, or could be, used by different applications, such as JVMSERVER resources, deploy and manage the resource at the level of the platform, where it can be used by any version of any application deployed on the platform.

Applications that are eligible for multi-versioning benefit from more sophisticated management capabilities:

- You can install multiple versions of the application, at the same time, on the same platform instance.
- New versions of an application can be deployed to the platform and phased in without the need to remove the previous versions.
- You can install and verify installation of an application version before making the application version available to users of the platform.
- Users can be moved over to a new version of the application without a break in service, and quickly moved back to another version if necessary.
- Programs that are not aware of multi-versioning automatically link to the highest version of the application that you have made available on the platform.
- Programs can exploit multi-versioning by invoking any available version of the application using the INVOKE APPLICATION command.

You control users' access to the resources in a multi-versioned application by declaring application entry points. PROGRAM and URIMAP resources can be declared as application entry points, which can be set as available or unavailable to users. With application entry points, you can install the application and its resources in the CICS regions in the platform, then enable them to verify the installation. When you choose to provide the service to users, you make the application entry points, and therefore the resources that they control for the application, available to callers.

You can use the CICS Cloud perspective in the CICS Explorer to view, update, and remove all the versions of an application that are deployed on a platform. You can open an installed application version in the online application editor to view more details about it, including the private resources and application entry points for the application. You can make available or unavailable, enable or disable, and install or discard an installed application version in the Cloud Explorer view, and you can also modify its state in the online application editor for installed applications.

---

## Application context enhancements

You can now use the application context of the current application set onto the task instead of the initial application context of the first application set onto the task.

A task may pass through one or more applications as it executes. Each task can have up to two application contexts associated with it at any time:

- The **initial** application context of a task is used for monitoring and measuring how much resource an application or a particular application operation is using across CICS regions and multiple tasks. The initial application context can be used when applying a policy to tasks that are part of an application, to define threshold conditions to manage the behavior of the tasks. The initial application context can be inherited from an invoking task, or set when the task first passes through an application entry point.

- The **current** application context of a task is used for loading private libraries and WLM user exits. The current application context can be queried using XPI, SPI, and API calls. The current application context changes each time the task passes through an application entry point.

The initial or current application context can be used with the transaction tracking capability in the CICS Explorer to quickly identify and diagnose application-related problems. Both the initial and the current application contexts are propagated from task to task.

The behaviour when a CICS TRANSACTION names an initial program that is an entry point, is changed from CICS TS 5.1. When issuing EXEC CICS START TRANSACTION, where the initial program named on the started transaction is an entry point, the application context is not passed from the issuing task to the newly started task.

The TASK base table and the HTASK base tables contain the initial application context values, the TASKASSC base table contains the current application context values.

The behavior of the EXEC CICS INQUIRE ASSOCIATION, EXEC CICS ASSIGN, and XPI - INQUIRE\_APP\_CONTEXT commands are changed to refer to the current application context. You can also use the new JCICS Task.getApplicationContext() method to return the current application context.

For more information, see Application context in Product overview.

---

## New policy rule types and rule items

Some new policy rule types and rule items are available to help you manage the run time behavior of your CICS applications and platforms.

### New policy rule types

The following new policy rule types are now available to take an automatic action if a specified threshold is exceeded:

*Table 25. New policy rule types*

New policy rule type	Policy rule items
<b>Start request</b> Used to define a threshold for the number of <b>EXEC CICS START</b> requests issued by a user task.	<b>START command</b> The <b>START</b> command rule item allows a user to define a threshold for the number of <b>EXEC CICS START</b> requests issued by a user task.
<b>Syncpoint request</b> Used to define a threshold for the number of <b>EXEC CICS SYNCPOINT</b> and <b>SYNCPOINT ROLLBACK</b> requests issued by a user task.	<b>SYNCPOINT command</b> The <b>SYNCPOINT</b> command rule item allows a user to define a threshold for the number of <b>EXEC CICS SYNCPOINT</b> and <b>SYNCPOINT ROLLBACK</b> requests issued by a user task.

Table 25. New policy rule types (continued)

New policy rule type	Policy rule items
<p><b>TD Queue request</b></p> <p>Used to define a threshold for the number of <b>EXEC CICS READQ</b> and <b>WRITEQ TD</b> requests issued by a user task.</p>	<p><b>READQ TD command</b></p> <p>The <b>READQ TD</b> command rule item allows a user to define a threshold for the number of <b>EXEC CICS READQ TD</b> requests issued by a user task to either intrapartition or extrapartition transient data queues.</p> <p><b>WRITEQ TD command</b></p> <p>The <b>WRITEQ TD</b> command rule item allows a user to define a threshold for the number of <b>EXEC CICS WRITEQ TD</b> requests issued by a user task to either intrapartition or extrapartition transient data queues.</p>
<p><b>TS Queue bytes</b></p> <p>Used to define a threshold for the amount of data written to temporary storage by <b>EXEC CICS WRITEQ TS</b> requests issued by a user task.</p>	<p><b>WRITEQ TS command</b></p> <p>The <b>WRITEQ TS</b> command rule item allows a user to define a threshold for the total amount of data that is written to both auxiliary and main temporary storage queues by a user task.</p> <p><b>WRITEQ TS auxiliary command</b></p> <p>The <b>WRITEQ TS</b> auxiliary command rule item allows a user to define a threshold for the total amount of data that is written to auxiliary temporary storage queues by a user task.</p> <p><b>WRITEQ TS main command</b></p> <p>The <b>WRITEQ TS</b> main command rule item allows a user to define a threshold for the total amount of data that is written to main temporary storage queues by a user task.</p>

Table 25. New policy rule types (continued)

New policy rule type	Policy rule items
<b>TS Queue request</b> Used to define a threshold for the number of <b>EXEC CICS READQ</b> and <b>WRITEQ TS</b> requests issued by a user task.	<b>READQ TS command</b> The <b>READQ TS</b> command rule item allows a user to define a threshold for the number of <b>EXEC CICS READQ TS</b> requests issued by a user task to both auxiliary and main temporary storage queues.  <b>WRITEQ TS command</b> The <b>WRITEQ TS</b> command rule item allows a user to define a threshold for the number of <b>EXEC CICS WRITEQ TS</b> requests issued by a user task to both auxiliary and main temporary storage queues.  <b>WRITEQ TS auxiliary command</b> The <b>WRITEQ TS auxiliary</b> command rule item allows a user to define a threshold for the number of <b>WRITEQ TS</b> requests issued by a user task to auxiliary temporary storage queues.  <b>WRITEQ TS main command</b> The <b>WRITEQ TS main</b> command rule item allows a user to define a threshold for the number of <b>WRITEQ TS</b> requests issued by a user task to main temporary storage queues.

## New policy rule items for existing policy rule types

The following new policy rule items are available for existing policy rule types:

Table 26. New policy rule items

Policy rule type	New policy rule items
Time	<b>Elapsed limit</b> Used to define a threshold for a user task's elapsed time.

For more information about policies, see Policies in Product overview.





---

## Chapter 34. Upgrading event processing

When you upgrade to a new CICS release, you are likely to require changes to your event processing environment. You might also require changes to your event processing applications and monitoring tools.

---

### New events for Atom feeds and WebSphere MQ bridge

Application programmers can now request that events be emitted when files and temporary storage queues are accessed by Atom feeds or when programs are linked to through the CICS-WebSphere MQ bridge.

---

### Upgrading event processing data types

You can filter, capture, and create CICS event processing events with additional, commonly used data types.

- COBOL zoned decimal numbers with options SIGN SEPARATE and SIGN LEADING.
- Floating point numbers.
- Null-terminated strings.

For a complete list of the data types that are supported, see Information Sources tab.

#### Application and hardware considerations

No action is required if you do not plan to use the additional data types that are provided for CICS Transaction Server for z/OS, Version 5 Release 2. However, to get the benefit of the additional data types, some action is required.

Benefitting from the additional data types for event processing requires that you update:

- Existing event bindings, or create new event bindings, to specify the additional data types.
- Custom EP adapters, if applicable.
- Event consumers, as needed.

You must have the corresponding hardware floating point unit to use binary or decimal floating point.

---

### Upgrading TS queue EP adapter formats

The temporary storage queue (TSQ) EP adapter now supports common base event, common base event REST, and WebSphere Operational Decision Management (WODM) XML event formats, in addition to the CICS flattened event (CFE) format.

For information about these event formats and how to work with them, see Event processing formats in Getting started.

---

## Upgrading the HTTP EP adapter to use connection pooling

Connection pooling can provide performance benefits for the HTTP EP adapter. When you implement connection pooling, CICS keeps the client HTTP connection open after the HTTP EP adapter has emitted the business event. The HTTP EP adapter can reuse the client HTTP connection to emit further events, rather than opening a new connection each time.

To implement connection pooling, add the `SOCKETCLOSE` attribute to the URIMAP resources that the HTTP EP adapter uses to open connections to an HTTP/1.1 compliant server. The URIMAP resources are named in the EP adapter configuration in the event bindings for your events. You do not need to make any changes to the event bindings. Choose a suitable setting for the `SOCKETCLOSE` attribute depending on the frequency with which the HTTP EP adapter emits events.

For more information about implementing connection pooling, see “Implementing connection pooling for client HTTP connections” on page 245.

---

## Upgrading to use the INQUIRE CAPTURESPEC command improvements

Using the `INQUIRE CAPTURESPEC` command, you can now determine information about the context and primary predicate filters that are set for a given capture specification.

New options for the `INQUIRE CAPTURESPEC` command mean that you can determine information about any primary predicate or application context filters that are enabled for a given capture specification. To benefit from the improvements to the `INQUIRE CAPTURESPEC` command, you must update your existing applications or write new applications. However, no action is required if you do not plan to benefit from the additional capability to inquire about capture specifications using filters. See `INQUIRE CAPTURESPEC` for a complete list of options for the `INQUIRE CAPTURESPEC` command.

You can also determine how many application command options, application data predicates, and information sources there are for a given capture specification. Details about the predicates and information sources that are defined for a given capture specification can be seen by using the new `INQUIRE CAPDATAPRED`, `INQUIRE CAPOPTPRED`, and `INQUIRE CAPINFOSRCE` commands.

---

## Part 3. Changes to CICSplex SM externals

CICSplex SM views and functions have changed to support the changes in function for this release of CICS and CICSplex SM. Check which changes might affect your system.



---

## Chapter 35. Changes to CICSplex SM installation and definition

Changes to CICSplex SM installation, initialization parameters, resource definition, or setup are summarized here.

---

### New CICSplex SM system parameters

You use CICSplex system parameters to identify or alter CICSplex SM attributes. These parameters are specified in the extrapartition transient data queue COPR. The parameters can be assigned to a DD \* file, sequential data set, or a partitioned data set member. The DD name for the extrapartition transient data queue is EYUPARM.

#### New CICSplex SM system parameters in CICS Transaction Server for z/OS, Version 4 Release 2

**MASTASKPROT**= {YES | NO}

The **MASTASKPROT** system initialization parameter was available as a PTF for CICS TS for z/OS, Version 4.2. It controls whether the CICSplex SM API, Web User Interface (WUI), and CICS Management Client Interface (CMCI) are allowed to perform actions or set attribute values for CICSplex SM MAS agent tasks with transaction IDs COIE, COIO, CONA, or CONL.

If NO is specified, users of the CICSplex SM API, WUI, and CMCI are allowed to FORCEPURGE or modify attribute values for CICSplex SM MAS agent tasks.

If YES is specified, CICSplex SM validates the transaction ID of all tasks before allowing actions to be performed, or attribute values to be modified for active tasks.

---

### New and changed CICSplex SM WUI server initialization parameters

You can specify these CICSplex SM Web User Interface server initialization parameters in the startup job or in a fixed block 80 data set.

#### Changed CICSplex SM WUI server initialization parameter in CICS Transaction Server for z/OS, Version 4 Release 1

**TCPIPSSLCERT**(*name*)

Specifies the label for the SSL certificate that is to be used for the connection between the Web User Interface and the Web browser. The value that you specify for this parameter is now case-sensitive. In previous releases, CICS folded the value to uppercase. If you previously entered the value in lowercase and relied on the folding behavior to set the correct SSL certificate name, you must now change the value to uppercase.

---

### Changes to the EYU9XDBT utility for CMAS and CICSplex definition

EYU9XDBT, the CICSplex SM data repository utility program, has enhanced functional and reporting capability.

EYU9XDBT enables you to export and import complete CICSplex SM data repository backups, at the level of a CMAS or a CICSplex context. The following enhancements complete this capability:

- Relationships between CMASes and CICSplex definitions can now be exported from one CMAS and re-imported to a new CMAS, retaining the CPLXCMAS associations.
- Relationships between RTA, Monitor, and Workload specifications and the CICS regions with which they are associated now have their creation modes retained when imported to a new CICSplex. Previously, INHERIT relationships between a WLM Specification (WLMSPEC), RTA Specification (RTASPEC), or Monitor Specification (MONSPEC) and a CICS region were converted to EXPLICIT relationships when they were imported to a new CICSplex. INHERIT relationships can only occur when you associate these specifications with a CICS system group (CSYSGRP). EYU9XDBT now ignores any link records in an import that specify an INHERIT relationship between these specifications and a CICS region, and automatically restores the correct INHERIT relationships when the link records for the parent CSYSGRP are imported.

EYU9XDBT also reports more summary data for each command processed. In addition to the existing Command Execution Summary and Data Repository Access Summary reports, EYU9XDBT now provides a command execution summary by resource type. For example, the new data might show that 2 CICSplex objects were defined, or 3 WLMSPEC records were imported.

---

## Change to Common Work Area size for a CMAS

The size of the Common Work Area has increased to 2048 bytes. You specify the Common Work Area size in the CICS system initialization parameter WRKAREA.

For a complete list of CICS system initialization parameters for a CMAS, see in the *CICS Transaction Server for z/OS Installation Guide*.

---

## Removal of SEYUMLIB, SEYUPLIB, and SEYUTLIB libraries

Following the removal of the CICSplex SM TSO end-user interface (EUI) in CICS TS for z/OS, Version 3.2, the libraries SEYUMLIB, SEYUPLIB, and SEYUTLIB and all their contents are no longer shipped with CICS Transaction Server. If you have any references to these libraries in your TSO login profiles or other locations, remove them.

Referencing these libraries might cause your TSO login to fail.

---

## Change to generic alert structures used by CICSplex SM

When you upgrade to CICS Transaction Server for z/OS, Version 5, there is a change to SNA generic alerts and resolutions as they are used by CICSplex SM.

“Product Set ID” (X'10') MS common subvector is a “Product ID” (X'11') common subvector that identifies the product as IBM Software (X'04'). It contains a “Product Number” (X'08') Product ID subfield that identifies the product number. In CICS Transaction Server for z/OS, Version 5, this product number has changed to 5655Y04.

The previous product numbers were as follows, depending on the version of CICS TS from which you are upgrading:

- In CICS Transaction Server for z/OS, Version 2, the product number was 5695081.
- In CICS Transaction Server for z/OS, Version 3, the product number was 5655M15.
- In CICS Transaction Server for z/OS, Version 4, the product number was 5655S97.





---

## Chapter 36. Changes to CICSplex SM views and resource tables

These changes affect CICSplex SM views, resource tables, and Business Application Services definition objects.

---

### Obsolete CICSplex SM views, resource tables, and attributes

These CICSplex SM views and resource tables have had certain functions removed, or have been removed completely, because of changes to CICS resource types and functions.

In the operations view **CICS region operations views > Dynamic storage area global - CICSSTOR**, the fields **Number of GCDSA cushion releases** and **Cushion limit** are displayed as "Not applicable" for regions from CICS Transaction Server for z/OS, Version 4 Release 2. The corresponding SMSATBCUSHRE and SMSATBCUSHLI attributes in the CICSSTOR resource table return "Not applicable" for regions from CICS Transaction Server for z/OS, Version 4 Release 2.

---

### Changed CICSplex SM views and resource tables

A number of changed CICSplex SM views and resource tables now support new or changed CICS resource types and functions.

#### Changed CICSplex SM views

Table 27. Changed CICSplex SM views

Changed CICS resource type or function	Corresponding CICSplex SM views that have changed
Bundles	<ol style="list-style-type: none"><li>1. Administration views &gt; Basic CICS resource administration views &gt; Resource definitions</li><li>2. CICS operations views</li><li>3. CICS Bundles view</li></ol>
CICS monitoring: new fields added or obsolete fields made invalid in new releases	<ol style="list-style-type: none"><li>1. CICS operations views &gt; Task operations views &gt; Active tasks</li><li>2. CICS operations views &gt; Task operations views &gt; Completed tasks</li><li>3. Monitoring views &gt; Transaction monitoring views &gt; Local or dynamic</li></ol>
CICS system: changed MAXTASKS input value	CICS operations views > CICS region operations views > CICS regions
Client HTTP connections	<ol style="list-style-type: none"><li>1. CICS operations views &gt; TCP/IP service operations views &gt; URI maps</li><li>2. Administration views &gt; Basic CICS resource administration views &gt; Resource definitions &gt; URI mapping definitions</li></ol>
Configuring z/OS Communications Server persistent sessions support	CICS operations views > CICS region operations views > CICS regions
Domain subpool storage: GUDSA and GSDSA are now supported	CICS operations > CICS region operations views > Domain subpool

Table 27. Changed CICSplex SM views (continued)

Changed CICS resource type or function	Corresponding CICSplex SM views that have changed
Dynamic storage areas: GUDSA and GSDSA are now supported	CICS operations > CICS region operations views > Dynamic storage areas
Dynamic storage areas: GUDSA and GSDSA are now supported	CICS operations > CICS region operations views > Dynamic storage area global
Event processing: assured events	<ol style="list-style-type: none"> <li>1. CICS operations views &gt; Application operations views &gt; Event processing</li> <li>2. CICS operations views &gt; Application operations views &gt; Event binding</li> <li>3. CICS operations views &gt; Application operations views &gt; Event capture specifications</li> <li>4. CICS operations views &gt; Task operations views &gt; Completed tasks</li> <li>5. CICS operations views &gt; Task operations views &gt; Active tasks</li> </ol>
Event processing: capture specifications	CICS operations views > Application operations views > Event capture specifications
Event processing: EP adapter sets	CICS operations views > Application operations views > Event binding
Event processing: HTTP EP adapter	CICS operations views > Application operations views > Event processing
Event processing: system events	<ol style="list-style-type: none"> <li>1. CICS operations views &gt; Application operations views &gt; Event processing</li> <li>2. CICS operations views &gt; Application operations views &gt; Event capture specifications</li> </ol>
Identity propagation	<ol style="list-style-type: none"> <li>1. CICS operations views &gt; Task operations views &gt; Task association information</li> <li>2. CICS operations views &gt; CICS region operations views &gt; CICS regions</li> <li>3. Administration views &gt; Monitor administration views &gt; Definitions</li> </ol>
IPv6	<ol style="list-style-type: none"> <li>1. CICS operations views &gt; TCP/IP service operations views &gt; IPIC connections</li> <li>2. CICS operations views &gt; Task operations views &gt; Task association information</li> </ol>
JVMs: withdrawal of pooled JVMs	<ol style="list-style-type: none"> <li>1. CICS operations views &gt; CICS region operations views &gt; CICS regions</li> <li>2. Monitoring views &gt; Transaction monitoring views &gt; Local or dynamic</li> <li>3. CICS operations views &gt; Task operations views &gt; Active tasks</li> <li>4. CICS operations views &gt; Task operations views &gt; Completed tasks</li> </ol>
JVM servers	<ol style="list-style-type: none"> <li>1. CICS operations views &gt; CICS region operations views &gt; CICS regions</li> <li>2. EYUSTARTCICSRGN.DETAILED &gt; Logging and journaling activity &gt; Monitor status</li> <li>3. CICS operations views &gt; Task operations views</li> <li>4. CICS operations views &gt; Enterprise Java component operations views &gt; JVM servers</li> </ol>

Table 27. Changed CICSplex SM views (continued)

Changed CICS resource type or function	Corresponding CICSplex SM views that have changed
Loader information: RO TCB load fields	<ol style="list-style-type: none"> <li>1. CICS operations views &gt; CICS region operations views &gt; Loader information</li> <li>2. CICS operations views &gt; CICS region operations views &gt; Loader by dynamic storage area</li> </ol>
Monitoring details: new DPLLIMIT field, DPLLIMIT, FILELIMIT, and TSQLIMIT values can be set	CICS Regions > CICS system name > Monitoring and statistics details > Monitoring details
MVS workload manager statistics	CICS operations views > CICS region operations views > MVS workload management
Platform and region type details	SM Administration Views > System Group Definitions
SSL connections: SSL rebuild and cipher identification	<ol style="list-style-type: none"> <li>1. CICS operations views &gt; CICS region operations views &gt; CICS regions</li> <li>2. CICS operations views &gt; Task operations views &gt; Active tasks</li> <li>3. CICS operations views &gt; Task operations views &gt; Completed tasks</li> </ol>
SYSLINK objects that support IPIC connections	<ol style="list-style-type: none"> <li>1. Administration views &gt; Basic resource administration views</li> <li>2. Administration views &gt; Fully functional resource administration views</li> <li>3. Administration views &gt; Basic CICS resource administration views &gt; CICS system links and related resources &gt; System link definitions</li> <li>4. Administration views &gt; Basic CICS resource administration views &gt; CICS system links and related resources &gt; CICS system definitions</li> <li>5. Administration views &gt; Basic CICS resource administration views &gt; System link definitions &gt; MASSs known to CICSplex</li> </ol>
Task storage: GCDSA and GUDSA are now supported	CICS operations > CICS region operations views > Task subpool
TCP/IP	CICS operations views > TCP/IP service operations views > TCP/IP services
TCPIPSERVICE resource definition attributes	Administration views > Basic CICS resource administration views > Resource definitions > TCP/IP service definitions
Temporary storage queues: automatic deletion	<ol style="list-style-type: none"> <li>1. Administration views &gt; CICS resource definitions &gt; Temporary storage model definitions</li> <li>2. CICS operations views &gt; Temporary storage queue (TSQ) operations views &gt; Temporary storage queues, Shared queues, Temporary storage queues, Models</li> </ol>
Temporary storage queues: limit for main storage	CICS operations views > Temporary storage queue (TSQ) operations views > Global temporary storage statistics

Table 27. Changed CICSplex SM views (continued)

Changed CICS resource type or function	Corresponding CICSplex SM views that have changed
Workload management improvements	<ol style="list-style-type: none"> <li>1. Active workload views</li> <li>2. Active workload views &gt; Active workloads</li> <li>3. Active workload views &gt; Active routing regions</li> <li>4. Active workload views &gt; Active workload target distribution factors</li> <li>5. Active workload views &gt; CICSplex definitions</li> <li>6. Active workload views &gt; CICS system definitions</li> <li>7. Active workload views &gt; Active MASs in CICSplex</li> <li>8. CICSplex SM operations views &gt; CMASs managing CICSplex</li> <li>9. Administration views &gt; CMAS configuration administration views &gt; CMAS in CICSplex definitions</li> </ol>
Dynamic workload management improvements	<ol style="list-style-type: none"> <li>1. Active workload views &gt; Active workloads</li> <li>2. Active workload views &gt; Transaction groups</li> <li>3. Active workload views &gt; Transaction group affinities</li> <li>4. Active workload views &gt; Active routing regions</li> <li>5. Administration views &gt; Workload manager administration views &gt; Specifications</li> <li>6. Administration views &gt; Workload manager administration views &gt; Transaction group definitions</li> </ol>
WEBSERVICE resources in CICS bundles	<ol style="list-style-type: none"> <li>1. CICS operations views &gt; TCP/IP service operations views &gt; Web services</li> </ol>
XMLTRANSFORM resources	<ol style="list-style-type: none"> <li>1. CICS operations views &gt; CICS region operations views &gt; Request statistics processing</li> <li>2. EYUSTARTCICSRGN.DETAILED &gt; Monitoring and statistics details &gt; Statistics details &gt; Request statistics processing</li> </ol>
z/OS Communications Server and partner system information	CICS operations views > TCP/IP service operations views > IP connections
z/OS Communications Server information	CICS operations views > Task operations views > Task association information

## Changed CICSplex SM resource tables

Review the following resource tables for possible effects on any RTA evaluation definitions (EVALDEF) or CICSplex SM API programs that you are using:

- APPLCTN
- BUNDLE
- BUNDPART
- CICSDSA
- CICSplex
- CICSrgn
- CICSSTOR
- CMAS
- CMASplex

- CONNECT
- CPLEXDEF
- CPLXCMAS
- CRESBUND
- CSYSDEF
- CSYSGRP
- DB2CONN
- DB2CDEF
- DB2ENTRY
- DB2TRN
- DOCTEMP
- DOMSPOOL
- DSPPOOL
- EMSTATUS
- ENQMODEL
- EPLEXCHG
- EVCSPEC
- EVNTBIND
- EVNTGBL
- EXTRATDQ
- HTASK
- INDTDQ
- INTRATDQ
- IPCONDEF
- IPCONN
- JRNLMODL
- JCMSERV
- LIBDSN
- LIBRARY
- LOADACT
- LOADER
- LOCFIL
- LOCTRAN
- MAS
- MCICSRGN
- MGMTPART
- MLOCTRAN
- MONDEF
- MONITOR
- MVSWLM
- PIPELINE
- PROCTYP
- PROFILE
- PROGRAM
- REMFILE

- REMTDQ
- REMTRAN
- RESDESC
- RQMODEL
- SYSLINK
- TASK
- TASKASSC
- TCPDEF
- TCPIPS
- TRANCLAS
- TRANGRP
- TSKSPOOL
- TSMDEF
- TSMODEL
- TSQGBL
- TSQNAME
- TSQSHR
- TSQUEUE
- URIMAP
- URIMPDEF
- WEBSERV
- WLMATAFF
- WLMATARG
- WLMATGRP
- WLMAWAOR
- WLMAWORK
- WLMAWTOR
- WLMSPEC
- WORKREQ

Resource tables that support CICS management client interface (CMCI) requests include a new URI resource name attribute. The CICS management client interface uses these resource name attributes to specify CICS and CICSplex SM resources in URI requests. See CICS management client interface resource names in Reference for details of the CICSplex SM resources involved.

## Changes to views for the resource signature

Detailed resource signature information can be viewed in the CICS operations views, listed in the following table. These new fields can also be displayed in the Web User Interface resource administration views.

View set	Navigation
EYUSTARTATOMSERV	<b>CICS operations views &gt; TCP/IP service operations views &gt; Atomservices &gt; EYUSTARTATOMSERV.DETAILED1</b>
EYUSTARTBUNDLE	<b>CICS operations views &gt; Application operations views &gt; Bundles &gt; EYUSTARTBUNDLE.DETAILED1</b>

View set	Navigation
EYUSTARTCONNECT	CICS operations views > Connection operations views > ISC/MRO connections > EYUSTARTCONNECT.DETAILED
EYUSTARTDB2CONN	CICS operations views > DB2, DBCTL and WebSphere MQ operations views > Connections > EYUSTARTDB2CONN.DETAILED
EYUSTARTDB2ENTRY	CICS operations views > DB2, DBCTL and WebSphere MQ operations views > Entries > EYUSTARTDB2ENTRY.DETAILED
EYUSTARTDB2TRN	CICS operations views > DB2, DBCTL and WebSphere MQ operations views > Entry associated transactions > EYUSTARTDB2TRN.DETAILED
EYUSTARTDOCTEMP	CICS operations views > Document template operations views > Document template > EYUSTARTDOCTEMP.DETAILED
EYUSTARTEJCOSE	CICS operations views > Enterprise Java component operations views > CorbaServers > EYUSTARTEJCOSE.DETAILED
EYUSTARTEJDJAR	CICS operations views > Enterprise Java component operations views > CICS-deployed JAR files > EYUSTARTEJDJAR.DETAILED
EYUSTARTENQMODEL	CICS operations views > Enqueue model operations views > Enqueue model > EYUSTARTENQMODEL.DETAILED
EYUSTARTEXTRATDQ	CICS operations views > Transient data queue (TDQ) operations views > Extrapartition > EYUSTARTEXTRATDQ.DETAILED
EYUSTARTINDTDQ	CICS operations views > Transient data queue (TDQ) operations views > Indirect > EYUSTARTINDTDQ.DETAILED
EYUSTARTINTRATDQ	CICS operations views > Transient data queue (TDQ) operations views > Intrapartition > EYUSTARTINTRATDQ.DETAILED
EYUSTARTJRNLMDL	CICS operations views > Journal operations views > Models > EYUSTARTJRNLMDL.DETAILED
EYUSTARTJVMSESV	CICS operations views > Enterprise Java component operations views > JVM server > EYUSTARTJVMSESV.DETAILED
EYUSTARTLIBRARY	CICS operations views > Program operations views > LIBRARYs, including DFHRPL > EYUSTARTLIBRARY.DETAILED
EYUSTARTLOCFILE	CICS operations views > File operations views > Local files > EYUSTARTLOCFILE.DETAILED
EYUSTARTLOCTRAN	CICS operations views > Transaction operations views > Local or dynamic > EYUSTARTLOCTRAN.DETAILED
EYUSTARTMQCON	CICS operations views > DB2, DBCTL and WebSphere MQ operations views > WebSphere MQ connections > EYUSTARTMQCON.DETAILED
EYUSTARTMQINI	CICS operations views > DB2, DBCTL and WebSphere MQ operations views > WebSphere MQ initiation queue > EYUSTARTMQINI.DETAILED

View set	Navigation
EYUSTARTPIPELINE	CICS operations views > TCP/IP service operations views > Pipelines > EYUSTARTPIPELINE.DETAILED1
EYUSTARTPROCTYP	CICS operations views > CICS Business Transaction Services (BTS) operations views > Process type > EYUSTARTPROCTYP.DETAILED1
EYUSTARTPROFILE	CICS operations views > Connection operations views > Profiles > EYUSTARTPROFILE.DETAILED1
EYUSTARTPROGRAM	CICS operations views > Program operations views > Programs > EYUSTARTPROGRAM.DETAILED1
EYUSTARTREMPFILE	CICS operations views > File operations views > Remote files > EYUSTARTREMPFILE.DETAILED1
EYUSTARTREMTDQ	CICS operations views > Transient data queue (TDQ) operations views > Remote > EYUSTARTREMTDQ.DETAILED1
EYUSTARTREMPTRAN	CICS operations views > Transaction operations views > Remote > EYUSTARTREMPTRAN.DETAILED1
EYUSTARTRQMODEL	CICS operations views > Transaction operations views > Request model > EYUSTARTRQMODEL.DETAILED1
EYUSTARTTCPIPS	CICS operations views > TCP/IP service operations views > TCP/IP service > EYUSTARTTCPIPS.DETAILED2
EYUSTARTTRANCLAS	CICS operations views > CICS region operations views > Transaction classes > EYUSTARTTRANCLAS.DETAILED1
EYUSTARTTSMODEL	CICS operations views > Temporary storage queue (TSQ) operations views > Models > EYUSTARTTSMODEL.DETAILED1
EYUSTARTURIMAP	CICS operations views > TCP/IP service operations views > URI map > EYUSTARTURIMAP.DETAILED3
EYUSTARTWEBSERV	CICS operations views > TCP/IP service operations views > Web services > EYUSTARTWEBSERV.DETAILED1
EYUSTARTXMLTRANS	CICS operations views > Application operations views > XML transformation > EYUSTARTXMLTRANS.DETAILED1

## Changed operations base tables for the resource signature

The resource signature attributes are added to the following operations base tables:

ATOMSERV  
 BUNDLE  
 CONNECT  
 CRESBUND  
 DB2CONN  
 DB2ENTRY  
 DB2TRN  
 DOCTEMP  
 EJCOSE  
 EJDJAR  
 ENQMODEL  
 EXTRATDQ



INDTDQ  
 INTRATDQ  
 IPCONN  
 JRNLMODL  
 JVMSERV  
 LIBRARY  
 LOCFILE  
 LOCTRAN  
 MQCON  
 MQINI  
 PIPELINE  
 PROCTYP  
 PROFILE  
 PROGRAM  
 REMFILE  
 REMTDQ  
 REMTRAN  
 RQMODEL  
 TCPIPS  
 TRANCLAS  
 TSMODEL  
 URIMAP  
 WEBSERV  
 XMLTRANS

*Table 28. New fields in views for the resource signature*

Field	Attribute name	Description
BAS resource definition version	BASDEFINEVER	The BAS version number of this definition.
Last modification agent	CHANGEAGENT	The change agent identifier that made the last modification.
Last modification agent release	CHANGEAGREL	The CICS release level of the agent that made the last modification to the resource definition.
Last modification user ID	CHANGEUSRID	The user ID that made the last modification to the resource definition.
Source of the resource definition	DEFINESOURCE	The source of the definition, depending on which agent made the last change.
Creation time	DEFINETIME	The local date and time when the resource definition record was created on DFHCSD or EYUDREP.

Table 28. New fields in views for the resource signature (continued)

Field	Attribute name	Description
Installation agent	INSTALLAGENT	The change agent identifier that made the installation.
Installation time	INSTALLTIME	The local date and time when the definition was installed.
Installation user ID	INSTALLUSRID	The user ID that installed the resource definition.

For more information, see the *CICSplex System Manager Application Programming Guide*.

## New CICSplex SM views and resource tables

New CICSplex SM views and resource tables support CICS resource types and functions.

No new CICSplex SM views and resource tables were added in CICS Transaction Server for z/OS, Version 5 Release 2.

The following new CICSplex SM views and resource tables were added in earlier releases:

### New views and resource tables by functional area

Table 29. New CICSplex SM views and resource tables

Resource type or function	CICSplex SM views	CICSplex SM resource tables
Applications	Not applicable	APPLCTN
Application definitions	Not applicable	APPLDEF
Atom feeds	<b>CICS operations views &gt; TCP/IP service operations views &gt; Atomservice definitions</b>	ATOMSERV
ATOMSERVICE resource definitions	<b>Administration views &gt; Basic CICS resource administration views and Resource definitions &gt; Atomservice definitions</b>	ATOMDEF
ATOMSERVICE resources in a resource group	<b>Administration views &gt; Basic CICS resource administration views &gt; Resource definitions in a resource group</b>	ATMINGRP
Bundles	<b>CICS operations views &gt; Applications &gt; Bundles</b>	BUNDLE, CRESBUND
BUNDLE resource definitions	<b>Administration views &gt; Basic CICS resource administration views and Resource definitions &gt; BUNDLE definitions</b>	BUNDDEF

Table 29. New CICSplex SM views and resource tables (continued)

Resource type or function	CICSplex SM views	CICSplex SM resource tables
BUNDLE resources in a resource group	Administration views > Basic CICS resource administration views > Resource definitions in a resource group	BUNINGRP
Data predicates for a capture specification	CICS operations views > Application operations views > Event capture specification data predicates	EVCSDATA
Event processing adapter	CICS operations views > Application operations views > Event processing adapter	CRESEPAD, EPADAPT
Event capture specifications	Application operations views > Event capture specification	CRESEVCS, EVCSPEC
Event bindings	Application operations views > Event bindings	CRESEVBD, EVNTBIND
Event processing	Application operations views > Global event processing attributes	EVNTGBL
Event processing adapter sets	Not applicable	EPADSET
Event processing adapters in an event processing adapter set	Not applicable	EPAINSET
Information sources for a capture specification	CICS operations views > Application operations views > Event capture specification information sources	EVCSINFO
JVM servers	CICS operations views > Enterprise Java operations views > JVM servers	JVMSERV
JVMSERVER resource definitions	Administration views > Basic CICS resource administration views > Resource definitions > JVMSERVER definitions	JVMSVDEF
JVMSERVER resources in a resource group	Administration views > Basic CICS resource administration views > Resource definitions in a resource group	JMSINGRP
Management parts	Not applicable	MGMTPART
MQCONN resource definitions	Administration views > Basic CICS resource administration views and Resource definitions > WebSphere MQ connection definitions	MQCONDEF

Table 29. New CICSplex SM views and resource tables (continued)

Resource type or function	CICSplex SM views	CICSplex SM resource tables
MQCONN resources in a resource group	Administration views > Basic CICS resource administration views > Resource definitions in a resource group	MQCINGRP
Option predicates for a capture specification	CICS operations views > Application operations views > Event capture specification option predicates	EVCSOPT
OSGi bundles	Not applicable	OSGIBUND
OSGi services	Not applicable	OSGISERV
Platforms	Not applicable	PLATFORM
Platform definitions	Not applicable	PLATDEF
Policy rule information	Not applicable	RULE
System link definitions	Administration views > Basic CICS resource administration views > CICS system links and related resources	SYSLINK (existing resource table)
Target region for one or more active workloads	Active workload views > Target region distribution statistics	WLMATARG
Topology base table for event processing adapter sets resource table	Not applicable	CRESEPAS
WebSphere MQ connection definition with MQCONN resource	CICS operations views > DB2, DBCTL and WebSphere MQ operations views > WebSphere MQ Connection	MQCON
WebSphere MQ connection with dynamically created MQINI resource	CICS operations views > DB2, DBCTL and WebSphere MQ operations views > WebSphere MQ initiation queue	MQINI
XMLTRANSFORM resources	Application operations views > XMLTRANSFORM resources	XMLTRANS

## New Business Application Services definition objects

These new Business Application Services definition objects describe new CICS resource types and functions.

Table 30. New BAS definition objects

BAS object	What is it?
ATOMDEF	CICS definition that describes an ATOMSERVICE resource.

Table 30. New BAS definition objects (continued)

BAS object	What is it?
ATMINGRP	BAS definition that describes the membership of an ATOMSERVICE definition (ATOMDEF) in a resource group.
BUNDDEF	CICS definition that describes a BUNDLE resource.
BUNINGRP	BAS definition that describes the membership of a BUNDLE definition (BUNDDEF) in a resource group.
JVMSVDEF	CICS definition that describes a JVMSERVER resource.
JMSINGRP	BAS definition that describes the membership of a JVMSERVER definition (JVMSVDEF) in a resource group.
MQCONDEF	CICS definition that describes an MQCONN resource.
MQCINGRP	BAS definition that describes the membership of an MQCONN definition (MQCONDEF) in a resource group.



---

## Chapter 37. Changes to CICSplex SM transactions

These changes affect CICSplex SM transactions.

---

### Changed Web User Interface control transaction (COVC)

The Web User Interface control transaction (COVC) has changed to display IPv6 information.

Several COVC panels have changed to support IPv6 addressing.

#### **COVC front panel**

The Current Status, Time, Applid, and Date fields have moved by one line down the screen COVC status screen. Please review any automated processes that use these fields.

#### **COVC status panel**

A new field, TCP/IP Family, displays whether the address of the connected region is an IPv4 or IPv6 address.

#### **COVC user sessions panel**

An existing field, ClientIp, now displays IPv6 addresses. The IPv6 address extends over two lines, which reduces the number of users visible per page (to a minimum of three users, if they all have IPv6 addresses). IPv4 addresses are displayed on a single line.

---

### New CICSplex SM transactions

The following new transactions have been added to support enhancements in CICSplex SM. These transactions are listed in the CSD group EYU\$CDEF and must be defined to your external security manager.

The new CICSplex SM transactions are as follows:

- WMWD
- XZLT





---

## Chapter 38. Programs that connect to a previous release of CICSplex SM

CICSplex SM API programs that use the CONNECT verb specifying a VERSION keyword for a previous release of CICSplex SM can experience significant increases in both CPU consumption by the CMAS address space and data space storage use by the Environment Services System Services (ESSS) address space.

API programs that specify a CRITERIA string to limit the size of a result set on a GET or PERFORM OBJECT request, or use the SPECIFY FILTER verb, can experience the increase in CMAS CPU and ESSS storage. Batch job run times might also increase.

You are not required to recompile your CICSplex SM API programs when you upgrade to the new release. However, if you do not recompile affected programs, the CMAS has to convert the records from the current release format to the level specified on the VERSION keyword on the CONNECT verb. This transformation process is highly intensive for CPU and storage when the result set is very large, for example, 300,000 to 500,000 records. The increases are observed in most cases when a criteria string is used to filter the result set; for example, specifying a criteria for the PROGRAM object using the NAME key for a specific or generic program. In this case, CICSplex SM has to retrieve all program objects and return them to the CMAS where the API is connected, transform the records to the version of the API, and then apply the filtering.

If you recompile your programs to specify the VERSION keyword to match the current release of CICSplex SM, this conversion does not take place, and storage and CPU consumption do not increase significantly.



---

## Part 4. Upgrading CICSplex SM

To upgrade CICSplex SM to the CICS Transaction Server for z/OS, Version 5 Release 2 level, carry out the tasks described here. Also check the important information here about the compatibility of CICSplex SM with previous releases of CICS Transaction Server.

Make sure that you complete all your upgrades to CICS TS for z/OS, Version 5.2 CICSplex SM, including your CMAS, all MASs that are connected to it, and all MASs that act as Web User Interface servers for it, before you restart CICSplex SM.

Several skeleton postinstallation members are distributed with CICSplex SM. You must generate these postinstallation members for use during the upgrade. For information about generating the postinstallation members, see CICS Transaction Server for z/OS Installation Guide.

So that you can revert to the previous release of CICSplex SM if you encounter problems during the upgrade to CICS TS for z/OS, Version 5.2 CICSplex SM, take backup copies of the previous release components such as JCL, CLISTs, CICS tables, CMAS data repositories, and WUI repositories before you start the upgrade process.



---

## Chapter 39. Conditions for running CICSplex SM Version 5.2 and earlier releases concurrently

You can run CICSplex SM Version 5.2 and earlier releases concurrently, but you must take account of a number of conditions for compatibility.

The CICSplex SM releases referred to in this information are the CICSplex SM element of CICS Transaction Server for z/OS releases. They are not available as separate products. For example, CICSplex SM Version 5.2 is the CICSplex SM element of CICS Transaction Server for z/OS, Version 5 Release 2.

You can run CICSplex SM Version 5.2, Version 5.1, Version 4.2, Version 4.1, Version 3.2, and Version 3.1 at the same time, with interconnected CMASs at different levels. The ability to do this allows gradual upgrading of the environment to Version 5.2. However, in CICS TS for z/OS, Version 5.2, a CICSplex SM CMAS will run only in a CICS system at Version 5.2.

CICS systems (MASs) running the following supported CICS releases can be connected to CICSplex SM Version 5.2:

- CICS TS for z/OS, Version 5.2
- CICS TS for z/OS, Version 5.1
- CICS TS for z/OS, Version 4.2
- CICS TS for z/OS, Version 4.1
- CICS TS for z/OS, Version 3.2
- CICS TS for z/OS, Version 3.1

To be connected to CICSplex SM Version 5.2, CICS systems must use the CICSplex SM Version 5.2 MAS agent, so they must have the CICSplex SM Version 5.2 libraries in their CICS JCL. For a CICS system running CICS TS for z/OS, Version 3.1, you must also apply the compatibility APAR PK17360 to the CICS system.

If you have difficulty running CICSplex SM with CICS TS for z/OS, Version 3.2 because of a recursive 0c4 protection exception in module DFHMSMR, apply PTF UK43094 for apar PK77484 and restart the system.

If you have any CICS systems at the release levels listed here that are connected to an earlier release of CICSplex SM, you are recommended to migrate them to the current release of CICSplex SM to take full advantage of the enhanced management services.

If you want to manage CICS systems at an earlier release level than those listed here, connect them to a CMAS running at an earlier release level that supported those systems. This CMAS can be connected to your CICSplex SM Version 5.2 CMAS, so that the older CICS systems are indirectly connected to the Version 5.2 CMAS.

The following conditions apply to environments in which CICSplex SM Version 5.2 and earlier releases of CICSplex SM are running concurrently:

- For a CMAS and a MAS (including those MASs that act as Web User Interface servers) to communicate, they must be running at the same release of CICSplex SM.

- A CMAS running at Version 5.2 can be connected to a CMAS running at Version 5.2, Version 5.1, Version 4.2, Version 4.1, Version 3.2, or Version 3.1.
- In a CICSplex that consists of CMASs at the Version 5.2 level and at one or more earlier levels, the maintenance point CMAS must be at the Version 5.2 level. So, when a CICSplex contains CMASs at more than one level, the first CMAS upgraded to Version 5.2 must be the maintenance point.
- If you are using the API or Web User Interface to manage MASs connected to a CMAS at an earlier release, you must ensure that the MASs are managed indirectly from the Version 5.2 CMAS:
  - All WUI servers must connect to the Version 5.2 CMAS.
  - All API programs must run in such a way that they are connected to the Version 5.2 CMAS. This requirement applies only if the API program accesses new fields or later-level CICS systems. If the API program connects to an earlier-level CMAS, any resource tables that contain new or updated fields for the new release are not returned to the API program connected to the earlier release level CMAS.
- You cannot view all resources of a CICS TS for z/OS, Version 5.2 region using a CMAS running at an earlier release.
- A WUI server at an earlier release that is connected to a CMAS at an earlier release can retrieve data from a MAS connected to a Version 5.2 CMAS if the CMAS participates in the management of the CICSplex. However, the WUI server cannot retrieve data about resource types that were not available in the earlier release.
- If you want to create any of the following CICSplex SM objects, you must create them using a WUI server that is running at the same CICSplex SM release level as the maintenance point CMAS:
  - CPLEXDEF (CICSplex definition)
  - CMTCMDEF (CMAS to CMAS link definition)
  - CSYSGRP (system group definition)
  - PERIODEF (time period definition)
  - MONSPEC (monitor specification)
  - MONGROUP (monitor group)
  - MONDEF (monitor definition)
  - RTAGROUP (RTA group)
  - RTADEF (RTA definition)
  - WLMSPEC (WLM specification)
  - WLMGROUP (WLM group)
  - WLMDEF (WLM definition)
  - TRANGRP (transaction group)

If you use the API or the BATCHREP batched repository-update facility to create these objects, CICSplex SM and the maintenance point CMAS release level must, again, be at the same release level.

- If you are using workload management, to use the unit of work (UOW) affinities introduced in CICS TS for z/OS, Version 4.2, the CMAS that owns the workload must be at the Version 4.2 level or later.

Workload function is controlled by the CMAS that owns a workload. The workload owner is assigned to the CMAS that manages the first started TOR that causes the workload to be initialized. If the workload is not shown as ACTIVE, the first started TOR associated with the workload will cause its associated CMAS to be the workload owner. If the workload owning CMAS is

not at the Version 4.2 level or later, any UOW affinity definitions cannot be honored, which means that affinities will not be correctly created and obeyed, and will be denied to any other CMASs that subsequently join the workload, even if those CMASs are at the Version 4.2 level or later.

To ensure that UOW affinities can be exploited by a workload, ensure that the existing workload is cloned to a new name, and that any required UOW affinity definitions are applied to the new name. You must then ensure that the first TOR that is started for the new name is at the Version 4.2 level or later. This will cause UOW affinities to be honoured by any other region joining the workload name that is at the Version 4.2 level or later. If any regions that are at earlier release levels join the workload, they are not able to use the UOW affinity function, and must continue to make routing decisions on the basis of the standard workload routing algorithms.

If you believe that your defined UOW affinities are not being implemented, use the **System ID of workload owner** hyperlink in any of the WUI workload runtime views to determine the CICSplex SM version of the workload owning CMAS. If the CPSM version of CMAS attribute is not at least at the 0420 level, the workload is not capable of exploiting any defined UOW affinities.





---

## Chapter 40. Upgrading CICSplex SM API programs

CICSplex SM API programs that were written to run in a MAS at a previous release can be run in a Version 5.2 MAS.

You can either continue to access the data provided by the previous release or access the new data available from Version 5.2. For information about using API programs with different releases of CICSplex SM, see the *CICSplex System Manager Application Programming Guide*.

If you have modified your application programs to make a call to EYU9XLOP using the EYUAWTRA commarea, you must recompile and link-edit them using the Version 5 libraries.

### New EYUDA values

The following new EYUDA general values are added for the CICSplex SM API:

- AVAILABLE (778)
- UNAVAILABLE (779)
- SOMEAVAIL (780)

### WLMAWTOR additional storage requirements

The number of records returned by CICSplex SM API programs querying the WLMAWTOR (Active routing regions) resource has increased because WLMAWTOR now includes extra statistical information about units of work as a result of the new key attribute RPTINGCMAS (Reporting CMAS name).

For each TOR in a workload, a WLMAWTOR record is returned from every CMAS that takes part in the workload; that is, every CMAS that manages a TOR in the workload. API programs querying WLMAWTOR, therefore, have more records to process, the number depending on the end of unit-of-work count. However existing API applications are unaffected if the first record in the result set is treated as the only record.



---

## Chapter 41. Upgrading a CMAS

You must upgrade your CICSplex SM CMAS to Version 5.2 at the same time as you upgrade the CICS system on which it runs. A CICSplex SM CMAS runs only in a CICS system of the same release level. During startup, the CMAS checks the CICS release level and stops with message EYUXL0142 if the release does not match.

### Before you begin

In a CICSplex that consists of CMASs at the Version 5.2 level and at one or more earlier levels, the maintenance point CMAS must be at the Version 5.2 level. So, when a CICSplex contains CMASs at more than one level, the first CMAS upgraded to Version 5.2 must be the maintenance point.

Before you upgrade a CMAS, check that the maintenance point CMAS for the CICSplex has been upgraded in every CICSplex where the CMAS is a member. Remove the CMAS from any CICSplex where the maintenance point CMAS is still at an earlier level. If the CMAS is started in a CICSplex that has a maintenance point CMAS at an earlier level, message EYUCP0012E is issued. In an environment with multiple interconnecting CICSplexes, this message and message EYUTS0012E can be issued repeatedly.

**Note:** When you upgrade a CMAS that is not a maintenance point CMAS, all of the CICSplex records are removed from its data repository. It cannot connect to its MASs, or join MASs connected to other CMASs, until it reconnects to its maintenance point, at which point its data repository is resynchronized for the CICSplex. Both the maintenance point and non-maintenance point issue EYULOG messages EYUCP0203I and EYUCP0204I. The data repository synchronize is not complete until both CMASs issue both messages. Depending upon the number of records in the CICSplex, the maintenance point usually takes longer than the non-maintenance point, and so the time between the two messages on the non-maintenance point is short, while the time between the two messages on the maintenance point is longer.

### Procedure

1. If the CMAS is running, stop it and upgrade the CICS modules to Version 5.2. For more information about dynamically updating DFHIRP, see Chapter 25, “Upgrading multiregion operation (MRO),” on page 221.
2. In the z/OS image that contains the CMAS, verify that the IEASYSxx member of the SYS1.PARMLIB library that you use for z/OS initialization includes the **MAXCAD** and **NSYSLX** parameters, with an appropriate value. the *CICS Transaction Server for z/OS Installation Guide* explains what values are suitable. If you are running both a previous release and Version 5.2 of CICSplex SM, an Environment Services System Services (ESSS) space is started for each release, so you might need to modify the **NSYSLX** value.
3. Authorize the Version 5.2 libraries by adding them to the list of APF-authorized libraries in the appropriate PROGxx or IEAAPFxx member in SYS1.PARMLIB. See in the *CICS Transaction Server for z/OS Installation Guide*.
4. Update the MVS linklist with the Version 5.2 modules that are required for CICS and CICSplex SM. See the *CICS Transaction Server for z/OS Installation Guide*.

5. Upgrade the CSD file with the Version 5.2 group of resource definitions and CICS startup group list. See “Upgrading the CSD for CICS-supplied and other IBM-supplied resource definitions” on page 202. You do not need to carry out an additional upgrade using a release-dependent set of definitions for CICSplex SM.
6. If you modified the default resource definitions for your earlier release, supplied by CICSplex SM in the EYU\$CDEF sample (which contains definitions for a CMAS), manually upgrade your modified resource definitions using the equivalents in the EYU\$CDEF sample for Version 5.2. The safest way is to copy the upgraded default resource definitions and reapply your modifications. It is important to upgrade your modified definitions to ensure that they are defined correctly with nondefault values for attributes that are new. If you fail to upgrade modified definitions, CICS assigns default values to any new attributes. The default values might be inappropriate for your requirements.
7. Edit the JCL used to start the CMAS, changing the previous release of CICSplex SM library names to the Version 5.2 names. If you have BBACTDEF, BBVDEF, or BBIPARM DD statements in the JCL, delete them. For information about the CMAS startup JCL, see the *CICS Transaction Server for z/OS Installation Guide*.
8. Use the EYU9XDUT utility to upgrade the data repository (EYUDREP data set) for the CMAS to Version 5.2. For information about how to upgrade the data repository, see the *CICS Transaction Server for z/OS Installation Guide*. The conversion utility copies the contents of the existing data repository to a newly allocated data repository. The existing data repository is not modified.

**Note:** After upgrading the data repository for the CMAS, the next time the CMAS is started it must point to the upgraded EYUDREP data set. If it does not, data repository updates might be lost. This loss can lead to incorrect results, which can include other CMASs isolating themselves when they connect to this CMAS.

9. Delete, redefine, and initialize the CICS local catalog and global catalog using the DFHCCUTL and the DFHRMUTL utility programs.
10. Verify the CICSplex SM system parameters referenced by the EYUPARM DD statement. If the CASNAME system parameter is present, delete it. For information about these parameters, see the *CICS Transaction Server for z/OS Installation Guide*.
11. Verify that the CICS system initialization parameter GRPLIST references the CICS supplied default startup group list, DFHLIST, and any CSD groups containing resource definitions that were modified.
12. Verify that the maintenance point CMAS for the CICSplex is running in every CICSplex where the CMAS is a member, then perform a cold start of the upgraded CMAS. Allow the upgraded CMAS to perform repository synchronization with the other CMASs in the network. EYULOG messages EYUCP0203I and EYUCP0204I are issued when repository synchronization begins and completes.

---

## Chapter 42. Upgrading a Web User Interface server

A Web User Interface server and the CMAS to which it connects must be at the highest level of CICSplex SM and CICS in the CICSplex. They must be at the same level as the maintenance point CMAS. Web User Interface servers that have not yet been upgraded to the same level as the maintenance point CMAS can be used, but they might return unreliable results until you upgrade them.

### About this task

A Web User Interface server can connect only to a CMAS at the same release level. Before you upgrade a Web User Interface server, you must upgrade the CMAS to which it connects. If the CMAS to which the Web User Interface server connects is not the maintenance point CMAS, you must also upgrade the maintenance point CMAS before you start the Web User Interface server and the CMAS to which it connects. Upgrade the Web User Interface server to Version 5.2 before you start any other MASs, so that it is ready to manage the upgraded MASs.

A CICS system that acts as a Web User Interface server is a local MAS. However, when you upgrade a Web User Interface server, you must upgrade both the CICSplex SM MAS agent and the CICS region to Version 5.2. In other MASs you may upgrade only the CICSplex SM MAS agent, and you are not required to upgrade the CICS region.

### Procedure

1. Increase the size of the DFHTEMP data set, which is used in the COVC import process. The standard CICS sample has only a primary allocation, but include a secondary allocation for RECORDS, as shown in the following statements:

```
//DEFTS    JOB accounting info,name
//AUXTEMP  EXEC PGM=IDCAMS
//SYSPRINT DD  SYSOUT=A
//SYSIN    DD  *
           DEFINE CLUSTER(NAME(CICSTS52.CICS.CNTL.CICSqualifier.DFHTEMP)-
                           RECORDSIZE(4089,4089)           -
                           RECORDS(200 200)                 -
                           NONINDEXED                         -
                           CONTROLINTERVALSIZE(4096)         -
                           SHAREOPTIONS(2 3)                 -
                           VOLUMES(volid))                   -
                           DATA(NAME(CICSTS52.CICS.CNTL.CICSqualifier.DFHTEMP.DATA) -
                           UNIQUE)
/*
```

2. With your Web User Interface server still running at your current release, use the export function of the COVC transaction to export your existing view set and menu definitions from the Web User Interface server repository (EYUWREP) to an extrapartition transient data queue. It is not necessary for the Web User Interface server to be connected to a CMAS. For information about exporting definitions, see the *CICSplex System Manager Web User Interface Guide*. You will use this information when you upgrade the contents of the Web User Interface server repository in a later process.
3. Authorize the Version 5.2 CICS and CICSplex SM libraries. See the *CICS Transaction Server for z/OS Installation Guide*.

4. If you use the link pack area (LPA), decide when you will replace the previous release modules in the LPA with the Version 5.2 modules. Every CICSplex SM module installed in the LPA can be used only by the release of CICSplex SM to which it relates.
  - a. If you put the Version 5.2 modules in the LPA immediately, change your previous release MASs to use the previous release modules from the STEPLIB and DFHRPL concatenations, instead of the LPA.
  - b. If you put the Version 5.2 modules in the LPA at the end of the upgrade process, make sure your upgraded MASs are using the Version 5.2 modules from the STEPLIB and DFHRPL concatenations instead of the LPA, then change them to use the LPA when you replace the modules.

For more information, see the *CICS Transaction Server for z/OS Installation Guide*.

5. Upgrade the CSD file with the Version 5.2 group of resource definitions and CICS startup group list. For information about upgrading the CSD, see “Upgrading the CSD for CICS-supplied and other IBM-supplied resource definitions” on page 202. You do not need to carry out an additional upgrade using a release-dependent set of definitions for CICSplex SM.
6. If you made any modifications to the dynamically created resource definitions for your earlier release that were supplied by CICSplex SM in the EYU\$WDEF sample, manually upgrade your modified resource definitions using the equivalents in the EYU\$WDEF sample for Version 5.2. The safest way to do this is to copy the Version 5.2 resource definitions and reapply your modifications. It is important to upgrade your modified definitions to ensure that they are defined correctly with nondefault values for attributes that are new. If you fail to upgrade modified definitions, CICS assigns default values to any new attributes, and these might be inappropriate for CICS-supplied resource definitions.
7. Edit the JCL used to start the Web User Interface server, changing library names for the previous release of CICSplex System Manager to the Version 5.2 names. For information about the MAS startup JCL, see the *CICS Transaction Server for z/OS Installation Guide*.
8. Verify that the CICS system initialization parameter **EDSALIM** is specified for the CICS region, and set it to a value of 800 MB. 800 MB is the default EDSALIM value for a CICS region in Version 5.1 and later. This value may be tuned by the user in a similar manner to tuning CICS storage in a CMAS. System initialization parameters can be specified before startup in the following locations:
  - In the system initialization table specified in the DFHSITxx load module whose suffix (xx) is specified as a SIT= system initialization parameter.
  - In the PARM parameter of the EXEC PGM=DFHSIP statement.
  - In the SYSIN data set defined in the startup job stream.
9. Verify that the CICS system initialization parameter **CPSMCONN=WUI** is specified for the CICS region. This system initialization parameter initializes the CICS region as a Web User Interface server and dynamically creates the required resource definitions for CICSplex SM.
10. Verify that the CICS system initialization parameter **GRPLIST** references the CICS-supplied default startup group list, DFHLIST, any CSD groups containing resource definitions that you have modified, and the lists of definitions for your own applications.

11. Ensure that you have deleted, redefined, and initialized the CICS local catalog and global catalog using the DFHCCUTL and the DFHRMUTL utility programs.
12. If you use MAS history recording, define new history data sets using the EYUJHIST sample job. If you prefer to upgrade your existing history data sets, you can also do this using the EYUJHIST sample job by following the upgrading instructions, supplied as comments, in the sample. The EYUJHIST sample is supplied uncustomized in the TDFHINST library, and customized by DFHISTAR in the XDFHINST library. Remember to edit the MAS startup JCL to include the history data sets.
13. Upgrade the contents of the Web User Interface server repository (EYUWREP). During this process you will start the Web User Interface server at Version 5.2. See “Upgrading the contents of the Web User Interface server repository (EYUWREP)” on page 310.

---

## Phased upgrade scenario for Web User Interface servers

If you have CICSplex SM Web User Interface servers connected to CMASs other than the maintenance point CMAS, which have many other MASs connected to them, you might not want to upgrade the other MASs at the same time as the CMAS. In that case, consider using this phased upgrade path.

### About this task

Assuming you are running the latest CICSplex SM maintenance levels, you can upgrade one LPAR at a time.

### Procedure

1. Define a new Version 5.2 CMAS on the same z/OS image as the Web User Interface server.
2. Define CMAS to CMAS links between the new Version 5.2 CMAS and the maintenance point CMAS in the CICSplex where the Web User Interface server CMAS is connected.
3. Upgrade the maintenance point CMAS in the CICSplex to Version 5.2.
4. Assign the new Version 5.2 CMAS to the CICSplex.
5. Upgrade the Web User Interface server to Version 5.2 and, when you restart it, connect it to the Version 5.2 CMAS. If the Web User Interface server is configured to connect specifically to the original CMAS, you must change the configuration to connect to the Version 5.2 CMAS.
6. Upgrade the remaining MASs to Version 5.2 when required, and connect them to the Version 5.2 CMAS as you restart them. If the MASes are configured to connect specifically to the original CMAS, you must change their configuration to connect to the Version 5.2 CMAS.
7. When you have moved all the MASs to the Version 5.2 CMAS, you can remove the original CMAS from the CICSplex, and delete CMAS to CMAS links between the original CMAS and the other CMASes in the CICSplex.



---

## Upgrading the contents of the Web User Interface server repository (EYUWREP)

With each release of CICS, internal Web User Interface repository record versions might be incremented to enable the new features in view definitions. For this reason, if your existing Web User Interface repository contains customized view sets or menus, you must upgrade your view set and menu definitions.

### Before you begin

At the start of your upgrade of the Web User Interface server, when your Web User Interface server is still running at your current release, use the export function of the COVC transaction to export your existing view set and menu definitions from the Web User Interface server repository to an extrapartition transient data queue. This step is included in the upgrade instructions Chapter 42, “Upgrading a Web User Interface server,” on page 307.

### About this task

When you upgrade the Web User Interface server repository to CICS TS for z/OS, Version 5.2, you can import a view set and menu definitions from a previous release into your new Web User Interface server repository.

You do not need to make any changes to existing customized views and menus, but you can consider modifying or creating view sets to take into account the new attributes and resources.

### Procedure

1. Create a new Web User Interface server repository using the JCL described in the *CICS Transaction Server for z/OS Installation Guide*.
2. Start the CICS TS for z/OS, Version 5.2 Web User Interface server using the new Web User Interface server repository.
3. Use COVC to import the view set and menu definitions from your previous release from the extrapartition transient data queue to which you exported them. For information about the import function of the COVC transaction, see the *CICSplex System Manager Web User Interface Guide*. This import is necessary for each type of resource (VIEW, MENU, USER, USERGRP, and so on) that you had previously customized.
4. Use COVC to import the new starter set definitions. Specify the **OVERWRITE** option on the **Import option** field of the COVC panel to ensure that none of the new starter set views are accidentally overwritten by views from a previous release. For information about using COVC, see the *CICSplex System Manager Web User Interface Guide*.

### What to do next

You can also export view set and menu definitions from a CICS TS for z/OS, Version 5.2 Web User Interface server and import them into a server repository of a previous release. However, any new attributes or resources that are new in this release are not accessible in previous releases. You can remove these attributes and view sets using the View Editor. For information about the View Editor, see the *CICSplex System Manager Web User Interface Guide*.



---

## Chapter 43. Upgrading a CICSplex SM managed CICS system (MAS)

When you upgrade a CICSplex SM MAS to CICSplex SM Version 5.2, you might choose to upgrade only the CICSplex SM MAS agent. You are not required to upgrade the CICS region to Version 5.2 at the same time.

### Before you begin

Before you upgrade a CICSplex SM MAS to CICSplex SM Version 5.2, you must upgrade the CICSplex SM CMAS to which it connects, following the instructions in Chapter 41, “Upgrading a CMAS,” on page 305. You must also upgrade the Web User Interface server for the CICSplex, following the instructions in Chapter 42, “Upgrading a Web User Interface server,” on page 307.

### About this task

These steps explain how to upgrade the CICSplex SM MAS agent in a CICS region to Version 5.2. For details of supported combinations of CICSplex SM and CICS releases, see Chapter 39, “Conditions for running CICSplex SM Version 5.2 and earlier releases concurrently,” on page 299.

### Procedure

1. If you use the link pack area (LPA), decide when you will replace the previous release modules in the LPA with the Version 5.2 modules. Every CICSplex SM module installed in the LPA can be used only by the release of CICSplex SM to which it relates.
  - a. If you put the Version 5.2 modules in the LPA immediately, change your previous release MASs to use the previous release modules from the STEPLIB and DFHRPL concatenations, instead of the LPA.
  - b. If you put the Version 5.2 modules in the LPA at the end of the upgrade process, make sure your upgraded MASs are using the Version 5.2 modules from the STEPLIB and DFHRPL concatenations instead of the LPA, then change them to use the LPA when you replace the modules.

For more information, see the *CICS Transaction Server for z/OS Installation Guide*.

2. If you made any modifications to the default resource definitions for your earlier release that were supplied by CICSplex SM in the EYU\$MDEF sample (which contains definitions for a MAS), or the EYU\$WDEF sample (which contains definitions for a WUI), manually upgrade your modified resource definitions using the equivalents in the EYU\$MDEF or EYU\$WDEF sample for Version 5.2. The safest way to do this is to copy the upgraded default resource definitions and reapply your modifications. It is important to upgrade your modified definitions to ensure that they are defined correctly with nondefault values for attributes that are new. If you fail to upgrade modified definitions, CICS assigns default values to any new attributes, and these might be inappropriate for CICS-supplied resource definitions.
3. In the JCL that is used to start the MAS, replace the previous release SEYUAUTH library name in the STEPLIB concatenation, and the previous release SEYULOAD library name in the DFHRPL concatenation, with the Version 5.2 SEYUAUTH and SEYULOAD library names. The Version 5.2 SEYUAUTH library must be authorized for APF, which you did when you

upgraded the CMAS, but the SEYULOAD library must not be authorized. For information about the MAS startup JCL, see the *CICS Transaction Server for z/OS Installation Guide*.

4. Verify that the CICS system initialization parameter **EDSALIM** is specified for the CICS region, and set it to a value of 800 MB. 800 MB is the default EDSALIM value for a CICS region in Version 5.2. System initialization parameters can be specified before startup in the following locations:
  - In the system initialization table specified in the DFHSITxx load module whose suffix (xx) is specified as a SIT= system initialization parameter.
  - In the PARM parameter of the EXEC PGM=DFHSIP statement.
  - In the SYSIN data set defined in the startup job stream.
5. Verify that the CICS system initialization parameter **CPSMCONN=LMA5** is specified for the CICS region. This system initialization parameter initializes the CICS region as a MAS and dynamically creates the required resource definitions for CICSplex SM. If you made any modifications to the dynamically created resource definitions in your previous release, you must manually upgrade these using the equivalents in the EYU\$MDEF sample for Version 5.2.
6. If you use MAS history recording, define new history data sets using the EYUJHIST sample job. If you prefer to upgrade your existing history data sets, you can also do this using the EYUJHIST sample job by following the upgrading instructions, supplied as comments, in the sample. The EYUJHIST sample is supplied uncustomized in the TDFHINST library, and customized by DFHISTAR in the XDFHINST library. Remember to edit the MAS startup JCL to include the history data sets.
7. Optional: If you also want to upgrade the CICS region to Version 5.2 at this time, follow the instructions in Chapter 19, “Upgrade procedures for all CICS regions,” on page 201. You must upgrade the CSD for CICS as instructed, but you do not need to carry out any additional upgrade to your CSD to obtain the resource definitions for CICSplex SM, because all CICSplex SM resources are defined and installed dynamically.

## Results

When you have completed this task, you can carry out a cold start of the MAS.

---

## Chapter 44. Upgrading CICSplex SM workload management

Changes to CICSplex SM workload management, modules, application programs, or parameters are summarized here.

### Changes to dynamic workload management

CICS TS 4.2 introduced a new type of CICS affinity associated with a UOW, and extended CICSplex SM workload management (WLM) to manage these UOW affinities for DPL requests. The new affinity is restricted to programs that are dynamically linked. Programs with this type of affinity are routed to the same target region for the duration of a unit of work. These affinities are defined with an affinity relation of LOCKED and an affinity lifetime of UOW. To use the new UOW affinity with existing workloads you must restart the workloads at the CICS TS 4.2 level or later.

### Changes to real-time analysis

From CICS TS 4.2, enhanced security is provided when running custom status probe definitions (STATDEFs). You can use the CICSplex SM Real Time Analysis (RTA) component to write STATDEFs to report on conditions not covered by the RTA functions. The definition for a STATDEF now supports a user ID under which the STATDEF runs. You must ensure that the specified user ID on the START command for the STATDEF task has sufficient authority to access the required resources.

### Changes to dynamic workload routing

For workload routing that uses the queue or goal algorithm to determine which target region processes the work in a workload, the weighting that is applied to certain connection types has changed. The weighting that is applied to IP connectivity (IPIC) connections is decreased so that this type of connection has higher priority relative to LU6.2 connections than in previous releases of CICS TS.

If you have routing and target regions that are connected with LU6.2 and other connection types, for example MRO, check that the change in routing behavior has not affected your workload flow. You can check the transaction execution statistics for any change in the percentage of dynamic transactions that are routed to LU6.2 linked target regions.

If workload flow is affected, consider the following approaches:

- Convert the LU6.2 links to a connection type with a higher priority, for example MRO.
- Use the link neutral queue or link neutral goal algorithm for workload routing.
- Use the task load threshold value for target regions that are not connected using LU6.2, so that there is less preference for these targets after their task loads reach their threshold percentages.
- Direct specific transactions to the LU6.2 linked target regions using the standard WLM workload separation function.

See Managing workloads. For information about the task load health threshold, see CICS system definitions - CSYSDEF.

If a workload is imported from a CMAS running CICS TS 4.2 or later to a CMAS running a release earlier than CICS TS 4.2, the algorithm definition will be removed from active TRANGRPs in the workload imported into the CMAS running the earlier release. If another CMAS running CICS TS 4.2 or later imports the workload from this CMAS, the algorithm defined in the active TRANGRPs will revert to INHERIT. The routing algorithm used for transactions associated with active TRANGRPs will be inherited from the local active workload.

If a workload specifying LINGOAL or LINGQUEUE is imported from a CMAS running CICS TS 4.2 or later to a CMAS running a release earlier than CICS TS 4.2, the routing algorithm used by the workload imported into the CMAS running the earlier release will revert to GOAL or QUEUE. If another CMAS running CICS TS 4.2 or later imports the workload from this CMAS, the original routing algorithm will not be restored. The routing algorithm for the workload will remain GOAL or QUEUE, and the routing algorithm specified in any active TRANGRPs will revert to INHERIT. The algorithm used for transactions associated with active TRANGRPs will be inherited from the local active workload.

The ability to define the link neutral routing algorithms for a transaction group must be used with caution until all CMASs which manage a workload are upgraded to run CICS TS 4.2 or later. TORs connected to different CMASs running CICS TS 4.2 or later might route work differently depending on whether the workload was, at any time, imported from a CMAS running an earlier release of CICS TS.

## Changes to CICSplex SM EYU9WRAM module

If you use the workload management functions of CICSplex SM and you use your own version of the CICSplex SM user-replaceable Workload Routing Action Module, EYU9WRAM, you must recompile and link edit your version of EYU9WRAM to use the Version 5 libraries.

## Changes to CICSplex SM EYUPARM values

The **WLMLOADCOUNT** and **WLMLOADTHRSH** EYUPARM values are discontinued. You must now specify these attributes in the CSYSDEF and MAS resource tables.

**WLMLOADTHRSH** is now defined by using the **Task load health threshold** attribute in the CSYSDEF resource table. The value can now be modified for an active CICS by using the **CICS system definitions** view or the **MASs known to CICSplex** view found in **CICSplex SM operations views**. The value is also reported in the WLMATARG resource table. The attribute is used to specify a percentage threshold for the task load of a dynamic routing target region, which is calculated by dividing the current task count by the maximum task count. When the load for a target region reaches this threshold, WLM considers the region to be relatively unhealthy, causing higher link weights to be applied to the WLM routing algorithm when evaluating this region. The possible range for the value is 1 - 100. The default value is 60.

By changing the value of the **Task load health threshold** attribute to an active CICS region, by using the MAS resource table, you can change the routing weight factor of that region to make it more, or less, favorable as a dynamic routing target when it is evaluated against other target regions in a similar load and health state. Raising the value makes the region more likely to be selected; lowering it has the opposite effect. When the WLMLOADTHRSH value is exceeded, CICSplex SM applies a higher link weight to the overall routing weight evaluation for a target

region. Changes to this value are not reflected in the “WLM routing weight for region” displayed in the WLMATARG and WLMAWAOR views, which show only the weight factors applying to the target region in isolation from the overall WLM link weight, which excludes the abend probability factor and (healthy or unhealthy) link weight to a routing region.

**Note:** If you are using WLMLOADTHRSH EYUPARM, you must now specify the WLMLOADTHRSH EYUPARM as a **Task load health threshold** attribute in your target regions. This specification is a change from the discontinued EYUPARM that you previously specified in the routing regions.

**WLMLOADCOUNT** is now defined by using the **Task load queue mode** attribute in the CSYSDEF resource table. The value can now be modified for an active CICS region by using the **CICS system definitions** view or the **MASS known to CICSplex** view found in **CICSplex SM operations views**. The value is also reported in the WLMATARG resource table. This attribute is used by CICSplex SM Workload Manager. It specifies how the queued task load of a dynamic routing target region is to be evaluated, with these values:

- **MAXTASK** specifies that both active and MAXTASK queued tasks are to be included in the task load evaluation for a target region.
- **ALL** specifies that the task load evaluation for a region includes active tasks, tasks queued for the MAXTASK limit, and tasks that are queued because of a TRANCLASS limit.

The default value is **ALL**.



---

## Part 5. Changes to CICS messages and codes

This section lists messages and abend codes that have been removed, changed, and added for CICS Transaction Server for z/OS, Version 5 Release 2.

The DFHCMACD file is not updated by PTFs that are applied to CICS. For the latest message updates, see the descriptions in CICS messages in Reference -> Diagnostics. The CMAC transaction uses the DFHCMACD file to provide online descriptions of the CICS messages and codes.

### **Normalization of spaces in message text**

From CICS Transaction Server for z/OS, Version 5 Release 1, CICS messages have been normalized to remove duplicate spaces from the text of a message and leave a single space. Spaces before and after the message text are also removed. If you have automated processes that depend on message text, check whether they are affected by this change, and modify them as necessary to match the normalized message output.





---

## Chapter 45. Deleted messages

These messages are deleted for CICS Transaction Server for z/OS, Version 5 Release 2. Where a range of message numbers is specified, all the message numbers in that range were previously issued and have now been deleted.

### **Messages deleted in CICS Transaction Server for z/OS, Version 5 Release 2**

- DFHSJ0902
- DFHCZ0357 to DFHCZ0362

### **Messages deleted in CICS Transaction Server for z/OS, Version 5 Release 1**

- DFHAD0201 to DFHAD0209
- DFHAD0210 to DFHAD0216
- DFHAD0231
- DFHAD0232
- DFHAD0261 to DFHAD0269
- DFHAD0270 to DFHAD0273
- DFHAM4921 to DFHAM4927
- DFHAP1217
- DFHCA4921 to DFHCA4927
- DFHEJ0101
- DFHEJ0102
- DFHEJ5001 to DFHEJ5009
- DFHEJ5010 to DFHEJ5019
- DFHEJ5020 to DFHEJ5029
- DFHEJ5030
- DFHEJ5031
- DFHEJ5036 to DFHEJ5039
- DFHEJ5040
- DFHEJ5041
- DFHEJ5043 to DFHEJ5049
- DFHEJ5050 to DFHEJ5059
- DFHEJ5060 to DFHEJ5062
- DFHEJ5101 to DFHEJ5109
- DFHEJ5110 to DFHEJ5114
- DFHEJ6000
- DFHEJ6001
- All DFHIIInnnn messages, as follows:
  - DFHII0001
  - DFHII0002
  - DFHII0004
  - DFHII0100 to DFHII0109

- DFHII0110
- DFHII0200 to DFHII0202
- DFHII0204 to DFHII0209
- DFHII0210
- DFHII0212 to DFHII0219
- DFHII0220 to DFHII0229
- DFHII0230 to DFHII0239
- DFHII0240 to DFHII0249
- DFHII0250 to DFHII0252
- DFHII0300
- DFHII0301
- DFHII0401
- DFHII0402
- DFHII0501
- DFHII0601 to DFHII0604
- DFHII1000 to DFHII1009
- DFHII1010 to DFHII1019
- DFHII1020 to DFHII1029
- DFHII1030 to DFHII1039
- DFHII1040
- DFHII1050
- DFHIS0003
- DFHIS0004
- DFHIS0006
- DFHIS1024
- DFHIS1038
- All DFHMuUnnnn messages, as follows:
- DFHMu0102 to DFHMu0109
- DFHMu0110 to DFHMu0119
- DFHMu0120 to DFHMu0129
- DFHMu0130 to DFHMu0139
- DFHMu0140 to DFHMu0149
- DFHMu0150 to DFHMu0159
- DFHMu0160
- DFHMu0162
- DFHMu0163
- DFHMu0165 to DFHMu0167
- DFHMu0169
- DFHMu0170
- DFHMu0171
- DFHMu0999
- DFHMuV0001
- All DFHREGxx messages, as follows:
- DFHREG01 to DFHREG07
- DFHSI8444

- DFHSJ0206
- DFHSJ0501 to DFHSJ0503
- DFHSJ0505 to DFHSJ0509
- DFHSJ0510 to DFHSJ0512
- DFHSJ0514 to DFHSJ0518
- DFHSJ0521 to DFHSJ0529
- DFHSJ0530 to DFHSJ0539
- DFHSJ0540
- DFHSJ0900
- DFHTR0101
- DFHTR0102
- DFHWU4015
- DFHWU4023
- DFHWU4024
- EYUVC1228
- EYUVC1229
- EYUVS0025
- EYUVS0992

#### **Messages deleted in CICS Transaction Server for z/OS, Version 4 Release 2**

- DFHAP1600
- DFHAP1601
- DFHAP1602
- DFHAP1603
- DFHCA5161S
- DFHCA5274W
- DFHCA5292W
- DFHCA5603E
- DFHEC1010
- DFHEC4112
- DFHFC0112
- DFHSM0603
- DFHSN1150
- DFHSN1250

#### **Messages deleted in CICS Transaction Server for z/OS, Version 4 Release 1**

- DFHIS0003
- DFHIS0004
- DFHIS0006
- DFHIS1024
- DFHMQ0212 E
- DFHMQ0213 E
- DFHMQ0214 E
- DFHMQ0216 E

- DFHMQ0217 E
- DFHSJ0504
- DFHSJ0513
- DFHSJ0519
- DFHSJ0520
- DFHSJ0540
- DFHSJ0541
- DFHSJ0701
- DFHSJ0702
- DFHSJ0703
- DFHSJ0704
- DFHSJ0705
- DFHSJ0706
- DFHSJ0707
- DFHSJ0708
- DFHSJ0709
- DFHSJ0801
- DFHSJ0802
- DFHSJ0803
- EYUNL0125W
- EYUNX0042E
- EYUNX0043E

## Chapter 46. Changed messages

These messages are changed for CICS Transaction Server for z/OS, Version 5 Release 2.

### Messages changed in CICS Transaction Server for z/OS, Version 5 Release 2

Table 31. Messages changed in CICS Transaction Server for z/OS, Version 5 Release 2

Message number	Message text
DFHAM4952	<i>applid</i> The installation of standalone CICS bundle <i>resourcename</i> failed because its ID and version are a duplicate of a standalone CICS bundle that already exists.
DFHAP1903	<i>date time applid</i> CICS failed to write SPI audit message DFHAP1900.
DFHCA4952	<i>applid</i> The installation of standalone CICS bundle <i>resourcename</i> failed because its ID and version are a duplicate of a standalone CICS bundle that already exists.
DFHLD0503W	<i>date time applid termid tranid</i> Install of LIBRARY <i>libname</i> has failed to complete successfully, for reason: { <i>library not found.</i>   <i>dynamic allocation of data set failed.</i>   <i>concatenation of data sets failed.</i>   <i>open of library concatenation failed.</i>   <i>close of library concatenation failed.</i>   <i>deconcatenation of data sets failed.</i>   <i>de-allocation of data set failed.</i>   <i>mvs abend condition.</i>   <i>incompatible bundle set.</i>   <i>library not disabled.</i>   <i>insufficient storage.</i>   <i>library lock error.</i>   <i>library chain error.</i>   <i>catalog write failed.</i>   <i>catalog_delete failed.</i>   <i>unknown.</i> } Enablement status is Disabled.
DFHLD0513W	<i>date time applid termid tranid</i> Discard of LIBRARY <i>libname</i> has failed for reason: { <i>library not found.</i>   <i>dynamic allocation of data set failed.</i>   <i>concatenation of data sets failed.</i>   <i>open of library concatenation failed.</i>   <i>close of library concatenation failed.</i>   <i>deconcatenation of data sets failed.</i>   <i>de-allocation of data set failed.</i>   <i>mvs abend condition.</i>   <i>incompatible bundle set.</i>   <i>library not disabled.</i>   <i>insufficient storage.</i>   <i>library lock error.</i>   <i>library chain error.</i>   <i>catalog write failed.</i>   <i>catalog_delete failed.</i>   <i>unknown.</i> }
DFHLD0525W	<i>date time applid termid tranid</i> Attempt to set attributes or status of LIBRARY <i>libname</i> has failed for reason: { <i>library not found.</i>   <i>dynamic allocation of data set failed.</i>   <i>concatenation of data sets failed.</i>   <i>open of library concatenation failed.</i>   <i>close of library concatenation failed.</i>   <i>deconcatenation of data sets failed.</i>   <i>de-allocation of data set failed.</i>   <i>mvs abend condition.</i>   <i>incompatible bundle set.</i>   <i>library not disabled.</i>   <i>insufficient storage.</i>   <i>library lock error.</i>   <i>library chain error.</i>   <i>catalog write failed.</i>   <i>catalog_delete failed.</i>   <i>unknown.</i> }
DFHLD0850	<i>date time applid</i> BUNDLE <i>bundlename</i> has successfully installed LIBRARY <i>library</i> as { <i>Enabled</i>   <i>Disabled</i> }.
DFHMP2006	<i>date time applid</i> The CICS managed platform domain failed to create the policy <i>policyname</i> in BUNDLE resource <i>bundle</i> because the rule <i>rulename</i> { <i>has an invalid rule type</i>   <i>has an invalid condition name for rule type</i>   <i>has an invalid item name</i>   <i>has an invalid operator value</i>   <i>has an invalid storage unit</i>   <i>has an invalid count unit</i>   <i>has an invalid time unit</i>   <i>has an invalid abend code</i>   <i>has an invalid EP adapter name</i>   <i>has an invalid EP adapter set name</i>   <i>has a missing XML element</i> }: 'error_data'.
DFHPA1909	<i>applid</i> DATA <i>data</i> IS INVALID FOR KEYWORD <i>keyword</i> . RESPECIFY KEYWORD AND DATA OR BYPASS BY TYPING '.END'.
DFHPG0304	<i>date time applid</i> BUNDLE <i>bundlename</i> has made the PROGRAM <i>programname</i> available as an entry point for operation <i>operationname</i> of application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> , on platform <i>platformname</i> .
DFHPG0305	<i>date time applid</i> BUNDLE <i>bundlename</i> has made the PROGRAM <i>programname</i> unavailable as an entry point for application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> , on platform <i>platformname</i> .

Table 31. Messages changed in CICS Transaction Server for z/OS, Version 5 Release 2 (continued)

Message number	Message text
<b>DFHPG0306</b>	<i>date time applid BUNDLE bundlename unable to enable PROGRAM programname as an entry point for operation operationname as {the PROGRAM does not exist.   the PROGRAM failed to autoinstall.   an internal error occurred.   the PROGRAM name is invalid.   the named PROGRAM is remote.   the named resource is a MAPSET.   the named resource is a PARTITIONSET.   the PROGRAM has the same name as an existing public program.}</i>
<b>DFHPI0516</b>	<i>date time applid tranid A request to the SAML security token service on JVM server jvmserver has failed because {of an invalid token.   of a container error.   a required input container is missing.   the JVM server is not enabled.   the JVM server cannot be found.   the DFHSAML-FUNCTION container is not DATATYPE(CHAR).   the DFHSAML-TOKEN container is not found.   the DFHSAML-TOKEN container is not DATATYPE(CHAR).   the DFHSAML-JVM container is not DATATYPE(CHAR).   the DFHSAML-FILTER container is not DATATYPE(CHAR).   the DFHSAML-SIGNED container is not DATATYPE(CHAR).   of an error in parsing the token.   the DFHSAML-FILTER container has invalid data.   the DFHSAML-FUNCTION container has invalid data.   the DFHSAML-SIGNED container has invalid data.   the DFHSAML-OUTTOKEN container is not found.   the certificate in the token has expired.   the token is no longer valid.   the certificate in the token is not trusted   the DFHSAML-RESPONSE container cannot be found.   of an internal error.}</i>
<b>DFHPI0914</b>	<i>date time applid userid WEBSERVICE WebService is UNUSABLE because: {the WSBind file was not found   CICS is not authorized to read the WSBind file   there is insufficient storage to load the WSBind file   the zFS read for the WSBind file failed   writing the WSBind file to the shelf failed   the PIPELINE is incompatible with this WEBSERVICE   the CPIR resolution transaction could not be attached   the direction of the PIPELINE can't be determined   the WSBind file is corrupt   the WSBind file has an invalid version number   the WSBind file has an out of date version number   the WSBind file product number was not recognized   the PIPELINE is not a SOAP PIPELINE   the PIPELINE does not support SOAP version 1.2   the PIPELINE is not configured for SOAP version 1.1   the WSBind file is incompatible with the LOCALCCSID   it is incompatible with a Bundle defined PIPELINE} .</i>
<b>DFHPI1007</b>	<i>DATE TIME APPLID TRANNUM {XML   JSON} to data transformation failed because of incorrect input ({XML_FORMAT_ERROR   UNEXPECTED_CONTENT   HEADER_FORMAT_ERROR   UNDEFINED_ELEMENT   UNDEFINED_NAME_SPACE   ARRAY_OVERFLOW   NAME_TOO_LONG   PREFIX_TOO_LONG   NAME_SPACE_TOO_LONG   UNEXPECTED_XOP_INCLUDE   XOP_INCLUDE_ERROR   DUPLICATE_CHOICE   MISSING_XSI_TYPE   UNKNOWN_XSI_TYPE   MISSING_ATTRIBUTE   MIXED_CONTENT   MISSING_EQUALS_ATTR   MISSING_CLOSE_TAG_CHAR   MISSING_QUOTE_OR_APOSTROPHE   MISSING_END_QUOTE   DUPLICATE_ATTRIBUTE   MISMATCHED_TAGS   UNSUPPORTED_ENTITY   INVALID_UNICODE_DATA} error_qualifier) for {WEBSERVICE   XMLTRANSFORM   BUNDLE   EVENTBINDING   SCACOMPOSITE   JVMSERVER pipeline handler program   EPADAPTER   OSGIBUNDLE   PROGRAM   POLICY   EPADAPTERSET   APPLDEF   TRANSACTION   URIMAP   PLATDEF   LIBRARY   WARBUNDLE   EBABUNDLE   TCPIPService   JVMSERVER   FILE   PIPELINE   JSONTRANSFRM   TYPE UNKNOWN} resource_name.</i>
<b>DFHPI1008</b>	<i>DATE TIME APPLID TRANID TRANNUM {XML   JSON} generation failed because of incorrect input ({ARRAY_CONTAINER_TOO_SMALL   DATA_STRUCTURE_TOO_SMALL   ARRAY_TOO_LARGE   ARRAY_TOO_SMALL   CONTAINER_NOT_FOUND   CONTAINER_NOT_BIT   CONTAINER_NOT_CHAR   BAD_CHOICE_ENUM   LENGTH_TOO_LONG   LITTLE_ENDIAN_BOM   INVALID_UNICODE_DATA} error_qualifier) for {WEBSERVICE   XMLTRANSFORM   BUNDLE   EVENTBINDING   SCACOMPOSITE   JVMSERVER pipeline handler program   EPADAPTER   OSGIBUNDLE   PROGRAM   POLICY   EPADAPTERSET   APPLDEF   TRANSACTION   URIMAP   PLATDEF   LIBRARY   WARBUNDLE   EBABUNDLE   TCPIPService   JVMSERVER   FILE   PIPELINE   JSONTRANSFRM   TYPE UNKNOWN} resource_name.</i>

Table 31. Messages changed in CICS Transaction Server for z/OS, Version 5 Release 2 (continued)

Message number	Message text
<b>DFHPI1009</b>	<i>DATE TIME APPLID TRANNUM {XML   JSON} to data transformation failed. A conversion error ({UNKNOWN_CONVERSION   INPUT_TOO_LONG   OUTPUT_OVERFLOW   NEGATIVE_UNSIGNED   NO_FRACTION_DIGITS   FRACTION_TOO_LONG   INVALID_CHARACTER   ODD_HEX_DIGITS   INVALID_BASE64   NOT_PURE_DBCS   INVALID_FIELD_SIZE   EXPONENT_OVERFLOW   EXPONENT_UNDERFLOW   ABSTIME_INVALID}) occurred when converting field fieldname for {WEBSERVICE   XMLTRANSFORM   BUNDLE   EVENTBINDING   SCACOMPOSITE   JVMSERVER pipeline handler program   EPADAPTER   OSGIBUNDLE   PROGRAM   POLICY   EPADAPTERSET   APPLDEF   TRANSACTION   URIMAP   PLATDEF   LIBRARY   WARBUNDLE   EBABUNDLE   TCPIPSERVICE   JVMSERVER   FILE   PIPELINE   JSONTRANSFORM   TYPE UNKNOWN} resource_name.</i>
<b>DFHPI1010</b>	<i>DATE TIME APPLID TRANNUM {XML   JSON} generation failed. A conversion error ({UNKNOWN_CONVERSION   NEGATIVE_UNSIGNED   INVALID_CHARACTER   INVALID_PACKED_DEC   INVALID_ZONED_DEC   INCOMPLETE_DBCS   ODD_DBCS_BYTES   INVALID_FIELD_SIZE   EXPONENT_OVERFLOW   EXPONENT_UNDERFLOW   ABSTIME_INVALID}) occurred when converting field fieldname for {WEBSERVICE   XMLTRANSFORM   BUNDLE   EVENTBINDING   SCACOMPOSITE   JVMSERVER pipeline handler program   EPADAPTER   OSGIBUNDLE   PROGRAM   POLICY   EPADAPTERSET   APPLDEF   TRANSACTION   URIMAP   PLATDEF   LIBRARY   WARBUNDLE   EBABUNDLE   TCPIPSERVICE   JVMSERVER   FILE   PIPELINE   JSONTRANSFORM   TYPE UNKNOWN} resource_name.</i>
<b>DFHRL0115 W</b>	<i>date time applid tranid The attempt to {enable   disable   discard} the BUNDLE bundle_name failed because one or more of its defined resources are {in an ENABLED   in an UNUSABLE   not in a DISABLED} state.</i>
<b>DFHRL0128 I</b>	<i>date time applid userid The CICS resource lifecycle manager has started to create BUNDLE bundle_name with bundle ID bundle_id and version bundle_major_ver.bundle_minor_ver.bundle_micro_ver for application application_id version appl_major_ver.appl_minor_ver.appl_micro_ver on platform platform_id.</i>
<b>DFHSJ0914 E</b>	<i>date time applid userid JVMSERVER jvmserver is installed as DISABLED because {the JVM server was not found.   CICS is not authorized to read the JVM profile.   the CJSR transaction could not be attached.   there is insufficient storage available.   the activate mode failed.   the add of the TP tcb failed.   the change mode to the TP tcb failed.   the Language Environment Enclave was not created.   there was a runtime options failure.   there was a failure updating the JVMProfile table.   there were insufficient threads available.the CJSR transaction could not be attached.   the CJSR ThreadJoiner class could not be created.}</i>
<b>DFHSJ1105</b>	<i>date time applid bundletypeBUNDLE resname from BUNDLE bundlename has been installed as {Enabled   Disabled}.</i>
<b>DFHWP0800</b>	<i>date time applid BUNDLE bundlename has successfully installed URIMAP urimdef as {Enabled   Disabled}.</i>
<b>DFHXM0600</b>	<i>date time applid BUNDLE bundlename has successfully installed TRANSACTION trandef as {Enabled   Disabled}.</i>
<b>EYUWI0020</b>	<i>date time applid WLM Routing initiated for workload(ins#1) in Routing Region(ins#2), CICSplex(plexname).</i>
<b>EYUWI0021</b>	<i>date time applid WLM Routing initialization failed for workload(workload) in Routing Region(region), CICSplex(plexname).</i>
<b>EYUWI0080</b>	<i>date time applid WLM Workload {query   analysis} process for workload(workload), CICSplex(plexname) has been started {- directed to CMAS (   - initiated by CMAS (} cmasname).</i>
<b>EYUWI0081</b>	<i>date time applid WLM Workload {analysis   build} process for workload(workload) , CICSplex(plexname) has been completed {- initiated by CMAS (} cmasname).</i>



Table 31. Messages changed in CICS Transaction Server for z/OS, Version 5 Release 2 (continued)

Message number	Message text
EYUWI0082	<i>date time applid</i> WLM Workload { <i>query</i>   <i>analysis</i> } process failed for workload( <i>workload</i> ), CICSplex( <i>plexname</i> ) {- directed to CMAS (   - initiated by CMAS (} <i>cmasname</i> ).
EYUWI0083	<i>date time applid</i> WLM Query Workload has encountered an unknown { <i>object</i>   <i>command</i> } for workload( <i>workload</i> ), CICSplex( <i>plexname</i> ) during workload build process - { <i>object</i>   <i>command</i> } ( <i>nn</i> ) ignored.
EYUWI0084	<i>date time applid</i> WLM Query Workload was unable to locate object( <i>nn</i> ), key( <i>type</i> ), workload( <i>workload</i> ), CICSplex( <i>plexname</i> ), update ignored.
EYUWI0085	<i>date time applid</i> WLM Query Workload has detected a workload synchronization failure for workload( <i>workload</i> ), CICSplex( <i>plexname</i> ).
EYUWI0090	<i>date time applid</i> CMAS <i>ins#1</i> is unavailable for workload( <i>ins#2</i> ), CICSplex( <i>ins#3</i> ).
EYUWM0400	<i>date time applid</i> Workload { <i>Specification</i>   <i>Group</i>   <i>Definition</i> } ( <i>name</i> ) has been successfully installed for CICSplex( <i>plexname</i> ), workload( <i>workload</i> ) {- initiated by CMAS (} <i>cmasname</i> ).
EYUWM0401	<i>date time applid</i> Workload { <i>Specification</i>   <i>Group</i>   <i>Definition</i> } ( <i>name</i> ) failed to install for CICSplex( <i>plexname</i> ), workload( <i>workload</i> ) {- initiated by CMAS (   - initiated by join of router (} <i>objectname</i> ).
EYUWM0402	<i>date time applid</i> Workload { <i>Specification</i>   <i>Definition</i>   <i>Transaction Group</i> } ( <i>name</i> ) { <i>is not defined</i>   <i>has no transaction links</i>   <i>has an invalid scope specification</i> } for CICSplex( <i>plexname</i> ), workload( <i>workload</i> ).
EYUWM0420	<i>date time applid</i> Routing region ( <i>sysname</i> ) for CICSplex( <i>plexname</i> ) has been joined to workload( <i>name</i> ).
EYUWM0421	<i>date time applid</i> Routing region ( <i>sysname</i> ) for CICSplex( <i>plexname</i> ) has been removed from workload( <i>name</i> ).
EYUWM0422	<i>date time applid</i> Routing region ( <i>sysname</i> ) for CICSplex( <i>plexname</i> ) already active in workload( <i>name</i> ).
EYUWM0424	<i>date time applid</i> Target region ( <i>sysname</i> ) for CICSplex ( <i>plexname</i> ) has been activated in workload ( <i>name</i> ).
EYUWM0425	<i>date time applid</i> Target region ( <i>sysname</i> ) for CICSplex ( <i>plexname</i> ) has been terminated in workload ( <i>name</i> ).
EYUWM0426	<i>date time applid</i> { <i>Definition</i>   <i>Transaction Group</i>   <i>Transaction</i> } ( <i>name</i> ) already installed in workload( <i>name</i> ) for CICSplex( <i>plexname</i> ) - parameter ignored.
EYUWM0427	<i>date time applid</i> Parameters have been ignored during the installation of Workload { <i>Group</i>   <i>Definition</i> } ( <i>name</i> ) for CICSplex( <i>plexname</i> ), workload( <i>workload</i> ) {- initiated by CMAS (} <i>cmasname</i> ).
EYUWM0428	<i>date time applid</i> WLMDEF ( <i>defname1</i> ) already installed in workload( <i>workloadname</i> ) as ( <i>defname2</i> ) for CICSplex( <i>plexname</i> ) - parameter ignored.
EYUWM0429	<i>date time applid</i> WLMDEFs ( <i>defname1</i> ) and ( <i>defname2</i> ) in workload( <i>workloadid</i> ) for CICSplex( <i>plexname</i> ) contain conflicting parameters. WLMDEF( <i>defname3</i> ) is ignored.
EYUWM0430	<i>date time applid</i> Workload( <i>workloadid</i> ) for CICSplex( <i>plexname</i> ) transition to type: <i>sysname</i> at <i>sysplex</i> reason.
EYUWM0431	<i>date time applid</i> AOR ( <i>name</i> ) has failed activation for workload( <i>workloadid</i> ), CICSplex( <i>plexname</i> ) because it has the same APPLID( <i>applid</i> ) as previously activated AOR( <i>name2</i> ).
EYUWM0432	<i>date time applid</i> WLMDEF ( <i>defname</i> ) in workload( <i>workloadid</i> ) cannot be processed for CICSplex( <i>plexname</i> ) due to a CICS BTS Processtype specification.
EYUWM0433	<i>date time applid</i> TRANGRP ( <i>trangrpname</i> ) in workload( <i>workloadname</i> ) cannot be processed for CICSplex( <i>plexname</i> ) due to a CICS BTS Affinity specification.
EYUWM0503	<i>date time applid</i> Routing region ( <i>name</i> ), CICSplex( <i>plexname</i> ) is running in Sysplex Optimized WLM state for workload( <i>workload</i> ).



Table 31. Messages changed in CICS Transaction Server for z/OS, Version 5 Release 2 (continued)

Message number	Message text
EYUWM0504	<i>date time applid</i> Routing region ( <i>name</i> ), CICSplex( <i>plexname</i> ) is not running in Sysplex Optimized WLM state for workload( <i>workload</i> ).
EYUWM0505	<i>date time applid</i> Target region ( <i>name</i> ), CICSplex( <i>plexname</i> ) is running in Sysplex Optimized WLM state.
EYUWM0506	<i>date time applid</i> Target region ( <i>name</i> ), CICSplex( <i>plexname</i> ) is not running in Sysplex Optimized WLM state.
EYUWM0507	<i>date time applid</i> Routing region ( <i>name</i> ), CICSplex( <i>plexname</i> ) optimization termination in workload( <i>workload</i> ) reason: {RS server failure   Optimization disabled   RSPoolID changed}).
EYUWM0508	<i>date time applid</i> Target region ( <i>name</i> ), CICSplex( <i>plexname</i> ) optimization termination reason: {RS server failure   Optimization disabled   RSPoolID changed   Link to DFHRSFDL failed}).

## Messages changed in CICS Transaction Server for z/OS, Version 5 Release 1

Table 32. Messages changed in CICS Transaction Server for z/OS, Version 5 Release 1

Message number	Message text
DFHEC1013	<i>date time applid</i> The CICS event capture component failed to create the EVENTBINDING resource <i>evbname</i> in BUNDLE <i>bundle</i> because {the LOCALCCSID SIT parameter is not supported   the event binding schema level is not supported   the event binding USERTAG is invalid   the EP adapter name is invalid   the EP adapterset name is invalid   of an invalid numeric filter value }: error_data.
DFHEP1001	<i>date time applid</i> EPADAPTER <i>adaptername</i> from BUNDLE <i>bundle</i> installed successfully.
DFHEP1002	<i>date time applid</i> EPADAPTER <i>adaptername</i> from BUNDLE <i>bundle</i> discarded successfully.
DFHEP1003	<i>date time applid</i> EPADAPTER <i>adaptername</i> from BUNDLE <i>bundle</i> installed successfully, replacing a previously installed version.
DFHME0006	<i>applid</i> Insufficient storage to satisfy GETMAIN (code X' <i>code</i> ') in module <i>modname</i> . MVS code <i>mvscode</i> .
DFHRL0113	<i>date time applid tranid</i> The CICS resource lifecycle manager failed to create the BUNDLE resource <i>bundle_name</i> because CICS failed to parse the manifest <i>manifest_name</i> specified in the bundle root directory. {The manifest is not valid.   Failed to convert the manifest.   The specified bundleVersion is not supported.   The specified bundleRelease is not supported.   The specified id contains invalid characters.   The specified bundleMajorVer is invalid.   The specified bundleMinorVer is invalid.   The specified bundleMicroVer is invalid.   Bundle ID mismatch.   Bundle version mismatch.}
DFHPI0400	<i>date time applid tranid</i> The CICS pipeline HTTP transport mechanism failed to send a request because {the request was using an invalid host codepage   there was a socket error (IO_ERROR)   the URL was invalid   the connection was closed   a socket request timed out   a proxy error was detected   there was an HTTP error   an invalid media type was used   there was an authorization problem   there was a problem with the client certificate   there was a URIMAP problem   SSL is not supported in CICS   there was a error with exit XWBAUTH   the URIMAP is disabled   there was a socket error (ADDRESS_IN_USE)   there was a socket error (ADDRESS_NOT_AVAILABLE)   there was a socket error (ALREADY_ASSOCIATED)   the connection was refused   there was a socket error (INVALID_OPTION)   there was a socket error (MAX_PORTS_REACHED)   there was a socket error (MISSING_OPTION)   there was a socket error (NEVER_ASSOCIATED)   there was a socket error (NO_CONNECTION)   there was a socket error (NO_SOCKET_AVAILABLE)   there was a socket error (NOT_PENDING)   there was a socket error (NOTIFIED)   there was a socket error (SCHEDULED)   there was a socket error (SOCKET_IN_USE)   there was a socket error (STATE_ERROR)   there was a socket error (TASK_CANCELLED)   there was a socket error (TCP_NOT_ACTIVE)}. Problem occurred for URI <i>URI</i> .

Table 32. Messages changed in CICS Transaction Server for z/OS, Version 5 Release 1 (continued)

Message number	Message text
DFHSJ1100	<i>date time applid</i> An attempt to install the <i>bundletype</i> bundle with symbolic name <i>bundlename</i> , version <i>version</i> into JVM server <i>jvmserver</i> has failed with reason code { <i>ERROR_CODE_UNRECOGNIZED</i>   <i>JVMSERVER_NOT_FOUND</i>   <i>EXCEPTION_FROM_JVMSERVER</i>   <i>JVMSERVER_NOT_OSGI_ENABLED</i>   <i>INTERNAL_ERROR</i>   <i>DUPLICATE_OSGI_BUNDLE_FOUND</i>   <i>JVMSERVER_NOT_LIBERTY_SERVER</i> }.
DFHSJ1101	<i>date time applid</i> An attempt to enable the <i>bundletype</i> bundle with symbolic name <i>bundlename</i> , version <i>version</i> in JVM server <i>jvmserver</i> has failed with reason code { <i>ERROR_CODE_UNRECOGNIZED</i>   <i>EXCEPTION_FROM_JVMSERVER</i> }.
DFHSJ1102	<i>date time applid</i> An attempt to disable the <i>bundletype</i> bundle with symbolic name <i>bundlename</i> , version <i>version</i> in JVM server <i>jvmserver</i> has failed with reason code { <i>ERROR_CODE_UNRECOGNIZED</i>   <i>EXCEPTION_FROM_JVMSERVER</i> }.
DFHSJ1104	<i>date time applid</i> The <i>bundletype</i> bundle with symbolic name <i>bundlename</i> , version <i>version</i> has not been installed because the JVM server <i>jvmserver</i> is not enabled.
DFHSJ1106	<i>date time applid bundletype</i> BUNDLE <i>resname</i> from BUNDLE <i>bundlename</i> has been discarded.
DFHSM0602	<i>applid</i> Insufficient storage to allocate the minimum above the bar memory object.
DFHSR0622	<i>applid</i> An attempt to { <i>overwrite</i>   <i>access</i> } the <i>dsaname</i> has caused the following abend.
DFHTR0103	TRACE TABLE SIZE IS <i>nmK</i> .
DFHTS1605	<i>date time applid</i> Scan of temporary storage queues completed. XXXX temporary storage queues were scanned and YYYY were deleted.
DFHWU4001	The URI specified contains a PATH that exceeds the maximum allowable length of 256 bytes.
DFH7054IS	xxxxxxx COMMAND IS NOT SUPPORTED AND IS NOT TRANSLATED.
DFH7089IE	'LABEL' OPTION IS NOT SUPPORTED AND IS IGNORED.
EYUNL0150W	Get Topology for resource <i>restype</i> failed, COMMAND= <i>cmdname</i> RESP= <i>respcode</i> RESP2= <i>resp2code</i>
EYUNL0151I	Get Topology for resource <i>restype</i> has zero data records
EYUNL0153W	Get Topology for resource <i>restype</i> is incomplete

## Messages changed in CICS Transaction Server for z/OS, Version 4 Release 2

Table 33. Messages changed in CICS Transaction Server for z/OS, Version 4 Release 2

Message number	Message text
DFHAM4843 W	<i>applid</i> GROUP/LIST <i>name</i> is internally locked to OPID <i>opid</i> APPLID <i>applid</i> .
DFHAM4868 W	<i>applid</i> The LSRPOOLNUM of the LSRPOOL <i>lsrname</i> in group <i>grpname</i> duplicates that of LSRPOOL <i>lsrname</i> in group <i>grpname</i>
DFHAM4943 E	<i>applid</i> The installation of { <i>ATOMSERVICE</i> } <i>resourcenname</i> failed because the associated { <i>CONFIGFILE</i>   <i>BINDFILE</i>   <i>URIMAP</i> } is invalid.
DFHAM4944 W	<i>applid</i> JVMSERVER <i>resourcenname</i> has been installed with fewer threads than requested on its definition.
EYUXD1024	<i>date time applid</i> Discovery of <i>booktype</i> ( <i>resource</i> ) suppressed by filter ( <i>filter</i> ).
DFHBR0412	<i>date time applid</i> Dynamic transaction routing program <i>prog</i> resource definition not found.
DFHCA4833 E	<i>date time applid tranid</i> A security error has occurred while attempting to install { <i>TDQUEUE</i>   <i>URIMAP</i> } <i>resourcenname</i> . The definition has not been installed.
DFHCA4843 W	<i>date time applid tranid</i> GROUP/LIST <i>name</i> is internally locked to OPID <i>opid</i> APPLID <i>applid</i> .

Table 33. Messages changed in CICS Transaction Server for z/OS, Version 4 Release 2 (continued)

Message number	Message text
<b>Messages in the range DFHCA4800 - DFHCA4999</b>	Where any of these messages did not include a transaction ID ( <i>tranid</i> ), this item has been added after the APPLID ( <i>applid</i> ).
DFHCA5120	<i>date time applid netname tranid csdtype</i> CSD opened; ddname: <i>ddname</i> - dsname: <i>dsname</i>
DFHCA5123	<i>date time applid netname tranid csdtype</i> CSD closed; ddname: <i>ddname</i> - dsname: <i>dsname</i>
DFHCA5540	<i>date time applid netname xxxxxx</i> value is greater than <i>yyyyyyy</i> value. The lower value takes precedence.
<b>Messages in the range DFHCA5544 - DFHCA5634</b>	Where any of these messages did not include a network identifier ( <i>netname</i> ) and transaction ID ( <i>tranid</i> ), these items have been added after the APPLID ( <i>applid</i> ).
DFHCE3503	Incorrect password length. Sign-on is terminated.
DFHCE3504	Incorrect new password length. Sign-on is terminated.
DFHDB2005	<i>date time applid</i> Transaction <i>tran</i> is not defined for CICS DB2.
DFHDB2057	<i>date time applid tranid termid</i> Abend <i>abcode</i> in DFHD2EX1 - resource definition for dynamic plan exit program <i>programe</i> was not found.
DFHDB2066	<i>date time applid tranid termid</i> Abend <i>abcode</i> in DFHD2EX1 - resource definition for dynamic plan exit program <i>programe</i> defines the program as remote.
DFHEC1001	<i>date time applid</i> EVENTBINDING <i>evbname</i> from BUNDLE <i>bundle</i> installed successfully.
DFHEC1002	<i>date time applid</i> EVENTBINDING <i>evbname</i> from BUNDLE <i>bundle</i> discarded successfully.
DFHEC1003	<i>date time applid</i> The CICS event capture component failed to create the EVENTBINDING resource <i>evbname</i> in BUNDLE <i>bundle</i> because { <i>the event binding name is invalid.</i>   <i>XML data in the event binding could not be parsed.</i>   <i>the eventDispatcher is missing or invalid.</i>   <i>the EPADAPTER create failed.</i>   <i>the eventBinding is invalid.</i>   <i>there are no capture specifications.</i>   <i>the EVENTBINDING is a duplicate in the BUNDLE.</i> }
DFHEC1009	<i>date time applid</i> The CICS event capture component found an inconsistency in one or more values during install of EVENTBINDING <i>evbname</i> in BUNDLE <i>bundle</i> because the capture specification <i>capspec</i> { <i>has an overlength formatPrecision in data item:</i>   <i>has an invalid formatlength in data item:</i> } <i>dataItem</i> .
DFHEC4007 E	<i>date time applid tranid</i> Transaction start EP adapter failed to emit an event to transaction <i>tranid</i> for event binding <i>evbname</i> . START TRANSID failed with response code <i>response</i> and reason code <i>reason</i> .
DFHEC4008	<i>date time applid tranid</i> TSQ EP adapter failed to emit an event to queue <i>queuename</i> for event binding <i>evbname</i> . WRITEQ TS returned with condition <i>resp</i> reason code <i>reason</i> .
DFHEC4009	<i>date time applid tranid</i> TSQ EP Adapter failed to emit an event to queue <i>queuename</i> for event binding <i>evbname</i> because the queue is not defined as recoverable.
DFHEC4111	<i>date time applid tranid</i> WebSphere MQ EP adapter failed to emit an event to queue <i>queue_name</i> for event binding <i>evbname</i> . WebSphere MQ function MQPUT1 returned with completion code <i>comp_code</i> .
DFHEC4117	<i>date time applid tranid</i> The WebSphere MQ EP adapter failed to emit an event for capture specification <i>csname</i> in event binding <i>evbname</i> to queue <i>queueName</i> . The event's size of <i>buffer_length</i> bytes exceeds the queue's maximum message length.
DFHEJ0101	<i>applid</i> Enterprise Java domain initialization has started.
DFHEP0114	<i>date time applid tranid</i> The EP adapter user ID of <i>adapter_userid</i> in event binding <i>evbname</i> is revoked, not valid, or not defined. Event discarded.
DFHEP0117	<i>applid</i> The EPADAPTER transaction ID <i>adapter_tranid</i> is disabled or undefined. An event from EVENTBINDING <i>evbname</i> has been discarded.
DFHEP0118	<i>applid</i> The EPADAPTER transaction ID <i>adapter_tranid</i> is remote. An event from EVENTBINDING <i>evbname</i> has been discarded.

Table 33. Messages changed in CICS Transaction Server for z/OS, Version 4 Release 2 (continued)

Message number	Message text
DFHFC0202	<i>date time applid terminal userid tranid</i> Resource definition for FILE <i>filename</i> has been added.
DFHFC0203	<i>date time applid terminal userid tranid</i> Resource definition for FILE <i>filename</i> has been deleted.
DFHFC0204	<i>date time applid terminal userid tranid</i> Resource definition for FILE <i>filename</i> has been updated.
DFHFC0206	<i>date time applid terminal userid tranid</i> Resource definition for FILE <i>filename</i> has been added.
DFHFC0207	<i>date time applid terminal userid tranid</i> Resource definition for FILE <i>filename</i> has been deleted.
DFHFC0150	<i>date time applid termid tranid</i> An attempt to release locks for unit of work <i>X'uwoid'</i> failed. VSAM return code <i>X'rrrr'</i> reason code <i>X'cccc'</i> .
DFHFC0151	<i>date time applid termid tranid</i> An attempt to retain locks for unit of work <i>X'uwoid'</i> failed. VSAM return code <i>X'rrrr'</i> reason code <i>X'cccc'</i> .
DFHFC0152	<i>date time applid termid tranid</i> An attempt to retain locks for data set within unit of work <i>X'uwoid'</i> failed. VSAM return code <i>X'rrrr'</i> reason code <i>X'cccc'</i> .
DFHFC0157	<i>applid tranid termid userid</i> An I/O error has occurred on base data set <i>dsname</i> accessed via file <i>filename</i> component code <i>X'code'</i> .
DFHFC0164	<i>date time applid tranid trannum termid userid.</i> A request has timed out waiting for an RLS lock. There are <i>nn</i> transactions or Transactional VSAM units of recovery holding this lock.
DFHFC0165	<i>date time applid tranid trannum termid userid.</i> Transaction <i>transid (tasknum)</i> unit of work <i>X'uwoid'</i> running in job <i>jobname</i> with applid <i>applid2</i> in MVS <i>mvsid</i> holds { <i>add to end lock</i>   <i>internal lock</i>   <i>exclusive lock on key</i>   <i>shared lock on key</i> } <i>X'keyid'</i> in data set <i>dsname</i> causing { <i>true</i>   <i>false</i> } contention.
DFHFC0166	<i>date time applid tranid termid userid.</i> VSAM RLS has detected a deadlock. There are <i>nn</i> transactions or Transactional VSAM units of recovery in the deadlock chain.
DFHFC0167	<i>date time applid tranid termid userid.</i> Transaction <i>transid(tasknum)</i> with unit of work id <i>X'uwoid'</i> running in <i>jobname/applid2</i> in MVS <i>mvsid</i> holds { <i>add to end lock</i>   <i>internal lock</i>   <i>exclusive lock on key</i>   <i>shared lock on key</i> } <i>X'key1'</i> on data set <i>dsname1</i> and is waiting for { <i>add to end lock</i>   <i>internal lock</i>   <i>exclusive lock on key</i>   <i>shared lock on key</i> } <i>X'key2'</i> on data set <i>dsname2</i> .
DFHFC0168	<i>date time applid tranid trannum termid userid.</i> { <i>An exclusive</i>   <i>A shared</i> } lock on key <i>X'keyid'</i> in data set <i>dsname</i> is causing { <i>true</i>   <i>false</i> } contention but the owner of this lock is unknown.
DFHFC0169	<i>date time applid termid userid.</i> Transaction <i>tranid</i> with transaction number <i>trannum</i> encountered an RLS retained lock held on data set <i>dsname</i> by unit of work <i>X'uwoid'</i> within CICS with applid <i>applid2</i> .
DFHFC0174	<i>date time applid tranid trannum termid userid</i> A deadlock has occurred as a result of a lock promote failure. There are <i>nnn</i> transactions or Transactional VSAM units of recovery holding this lock.
DFHFC0175	<i>date time applid tranid trannum termid userid.</i> Transactional VSAM unit of recovery <i>X'urid'</i> running in job <i>jobname</i> on Transactional VSAM instance <i>TVSInstance</i> in MVS <i>mvsid</i> holds { <i>add to end lock</i>   <i>internal lock</i>   <i>exclusive lock on key</i>   <i>shared lock on key</i> } <i>X'keyid'</i> in data set <i>dsname</i> causing { <i>true</i>   <i>false</i> } contention.
DFHFC0177	<i>date time applid tranid termid userid.</i> Transactional VSAM unit of recovery id <i>X'urid'</i> running in <i>jobname/TVSInstance</i> in MVS <i>mvsid</i> holds { <i>add to end lock</i>   <i>internal lock</i>   <i>exclusive lock on key</i>   <i>shared lock on key</i> } <i>X'key1'</i> on data set <i>dsname1</i> and is waiting for { <i>add to end lock</i>   <i>internal lock</i>   <i>exclusive lock on key</i>   <i>shared lock on key</i> } <i>X'key2'</i> on data set <i>dsname2</i> .
DFHFC0179	<i>date time applid termid userid.</i> Transaction <i>tranid</i> with transaction number <i>trannum</i> encountered an RLS retained lock held on data set <i>dsname</i> by unit of recovery <i>X'urid'</i> within Transactional VSAM instance <i>TVSInstance</i> .
DFHFC0300	<i>applid (tranid termid)</i> purge deferred due to incomplete I/O operation on VSAM file ' <i>filename</i> '.

Table 33. Messages changed in CICS Transaction Server for z/OS, Version 4 Release 2 (continued)

Message number	Message text
DFHFC0301	<i>applid (trandid termid)</i> purge deferred due to incomplete I/O operation on BDAM file <i>'filename'</i> .
DFHFC0302	<i>applid (trandid termid)</i> CICS terminating. Failure while waiting for I/O operation on VSAM file <i>'filename'</i> .
DFHFC0303	<i>applid (trandid termid)</i> CICS terminating. Failure while waiting for I/O operation on BDAM file <i>'filename'</i> .
DFHFC0308	<i>applid trandid termid</i> Purge deferred due to incomplete I/O operation on VSAM RLS file <i>filename</i>
DFHFC0309	<i>applid trandid termid</i> Failure while waiting for I/O operation on VSAM RLS file <i>filename</i>
DFHFC0310	<i>applid trandid termid</i> Purge deferred due to incomplete I/O operation on the RLS control ACB.
DFHFC0311	<i>applid trandid termid</i> Failure waiting for I/O operation on the RLS control ACB.
DFHFC0951	<i>applid {RLS   Non-RLS}</i> OPEN of file <i>filename</i> failed. DSNNAME not available from JCL or resource definition. Module <i>module</i> .
DFHFC0979	<i>date time applid</i> LSR pool <i>n</i> parameters incomplete for file <i>filename</i> because the DSNNAME specified in the resource definition could not be found on the VSAM catalog. VSAM has returned code <i>rrrr</i> in R15.
DFHFC3010	<i>date time applid</i> Diagnostic information for unit of work <i>X'local-uowid'</i> and file <i>filename</i> . Update was a { <i>read-update</i>   <i>write-add</i> } made by transaction <i>trandid</i> at terminal <i>termid</i> under task number <i>tasknum</i> . Key length <i>key-length</i> , data length <i>data-length</i> , base ESDS RBA <i>X'base-RBA-or-zero'</i> , record key <i>X'record-key'</i>
DFHFC7130	<i>date time applid trandid trannum termid userid</i> . Unit of work <i>X'uowid'</i> running in region <i>owner-applid</i> in MVS system <i>MVSid</i> holds a lock on key <i>X'keyid'</i> in coupling facility data table <i>tablename</i> in pool <i>CFDTpool</i> , which caused this request to wait.
DFHIR3789	<i>date time applid</i> SEND/RECEIVE mismatch between definitions for this system and system <i>sysid</i>
DFHIS1035	<i>date time applid</i> Unable to send { <i>a START</i>   <i>a CANCEL</i>   <i>a transaction routing</i>   <i>an enhanced routing</i>   <i>a file control</i>   <i>a transient data</i>   <i>a temporary storage</i> } request using IPCONN <i>ipconn</i> . Partner region does not support this function over IPIC.
DFHME0101	<i>applid</i> An error (code <i>X'code'</i> ) occurred while writing message <i>msgno</i> to transient data queue <i>queue</i> .
DFHME0503	THE CMAC FILE IS NOT DEFINED TO CICS.
DFHMQ0308 I	<i>date time applid</i> MQNAME <i>id</i> is stopped. Connect request deferred.
DFHMQ0309 E	<i>date time applid</i> Unable to connect using MQNAME <i>id</i> . MQCC= <i>mqcc</i> MQRC= <i>mqrc</i> .
DFHMQ0320 I	<i>date time applid</i> The CICS-MQ Adapter cannot find MQNAME <i>id</i> .
DFHMQ0749 E	<i>date time applid trandid trannum</i> Authentication error. EIBRESP= <i>resp</i> EIBRESP2= <i>resp2</i> Userid= <i>user-id</i> .
DFHPG0101	<i>date time applid terminal userid trandid</i> Resource definition for <i>progrname</i> has been added.
DFHPG0102	<i>date time applid terminal userid trandid</i> Resource definition for <i>progrname</i> has been deleted.
DFHPG0103	<i>date time applid terminal userid trandid</i> Resource definition for <i>progrname</i> has been replaced.
DFHPG0201	<i>date time applid terminal userid trandid</i> Program autoinstall exit <i>urmmname</i> indicated that program <i>progrname</i> should not be installed.
DFHPG0209	<i>date time applid terminal userid trandid</i> Resource definition for <i>progrname</i> has been autoinstalled using model <i>modelname</i> .
DFHPG0210	<i>date time applid terminal userid trandid</i> Resource definition for <i>progrname</i> has been system autoinstalled.



Table 33. Messages changed in CICS Transaction Server for z/OS, Version 4 Release 2 (continued)

Message number	Message text
DFHPI0400	<i>date time applid tranid</i> The CICS pipeline HTTP transport mechanism failed to send a request because { <i>the request was using an invalid host codepage   there was a socket error   the URL was invalid   the connection was closed   a socket request timed out   a proxy error was detected   there was an HTTP error   an invalid media type was used   there was an authorization problem   there was a problem with the client certificate   there was a URIMAP problem   SSL is not supported in CICS   there was a error with exit XWBAUTH   the URIMAP is disabled</i> }. Problem occurred for URI <i>uri</i> .
DFHPI0403	<i>date time applid tranid</i> The CICS pipeline HTTP transport mechanism failed to receive a response because { <i>the socket receive was timed out   the task was purged</i> }. Problem occurred for URI <i>uri</i> .
DFHPI0720 E	<i>date time appliduserid</i> PIPELINE pipeline encountered an error in the configuration file <i>filename</i> at offset <i>X'offset'</i> . Found : <i>element_found</i> yet expected : { <i>&lt;service&gt;   &lt;transport&gt; or &lt;service&gt;   a transport handler list   &lt;service_handler_list&gt; or &lt;terminal_handler&gt;   &lt;handler&gt;   &lt;program&gt;   &lt;handler_parameter_list&gt;   &lt;name&gt;   &lt;cics_soap_1.1_handler&gt;   &lt;cics_soap_1.2_handler&gt;   &lt;header_program&gt;   &lt;service_handler_list&gt;   &lt;default_target&gt; or a default handler list   &lt;program_name&gt;   &lt;namespace&gt;   &lt;localname&gt;   &lt;mandatory&gt;   true, false, 1 or 0   &lt;terminal_handler&gt;   &lt;service_parameter_list&gt;   &lt;service&gt;, &lt;transport&gt; or &lt;service_parameter_list&gt;   /   &lt;localname&gt;value&lt;/localname&gt;   &lt;namespace&gt;value&lt;/namespace&gt;   a tag that is valid within &lt;service_handler_list&gt;   &lt;jvmserver&gt; tag within &lt;cics_soap_1.n_handler_java&gt;   &lt;jvmserver&gt;value&lt;/jvmserver&gt;   &lt;repository&gt;value&lt;/repository&gt;</i> }.
DFHPI0997	<i>date time applid tranid pipeline</i> The CICS pipeline manager has encountered an error: { <i>PIPELINE not found   PIPELINE not active   PIPELINE mode mismatch   unhandled node failure   context switch failed   request stream creation failure   request stream transport error   target program unavailable   channel error   channel not found   URI not found   invalid URI   authorization failure   program abend   unidentified problem   timeout occurred   no request message   there was a problem with file PIDIR   attempt to register a WS-AT context twice   failure to send response to WS-Addressing endpoint</i> }.
DFHPI1007	<i>date time applid trannum</i> {XML   JSON} to data transformation failed because of incorrect input { <i>XML_FORMAT_ERROR   UNEXPECTED_CONTENT   HEADER_FORMAT_ERROR   UNDEFINED_ELEMENT   UNDEFINED_NAME_SPACE   ARRAY_OVERFLOW   NAME_TOO_LONG   PREFIX_TOO_LONG   NAME_SPACE_TOO_LONG   UNEXPECTED_XOP_INCLUDE   XOP_INCLUDE_ERROR   DUPLICATE_CHOICE   MISSING_XSI_TYPE   UNKNOWN_XSI_TYPE   MISSING_ATTRIBUTE   MIXED_CONTENT   MISSING_EQUALS_ATTR   MISSING_CLOSE_TAG_CHAR   MISSING_QUOTE_OR_APOSTROPHE   MISSING_END_QUOTE   DUPLICATE_ATTRIBUTE   MISMATCHED_TAGS   UNSUPPORTED_ENTITY</i> } <i>error_qualifier</i> for { <i>WEBSERVICE   XMLTRANSFORM   BUNDLE   EVENTBINDING   SCACOMPOSITE   JVMSERVER pipeline handler program   EPADAPTER   OSGIBUNDLE   JSONTRANSFRM   TYPE UNKNOWN</i> } <i>resource_name</i> .
DFHPI1008	<i>date time applid trannum</i> {XML   JSON} generation failed because of incorrect input { <i>ARRAY_CONTAINER_TOO_SMALL   DATA_STRUCTURE_TOO_SMALL   ARRAY_TOO_LARGE   ARRAY_TOO_SMALL   CONTAINER_NOT_FOUND   CONTAINER_NOT_BIT   CONTAINER_NOT_CHAR   BAD_CHOICE_ENUM   LENGTH_TOO_LONG</i> } <i>error_qualifier</i> for { <i>WEBSERVICE   XMLTRANSFORM   BUNDLE   EVENTBINDING   SCACOMPOSITE   JVMSERVER pipeline handler program   EPADAPTER   JSONTRANSFRM   TYPE UNKNOWN</i> } <i>resource_name</i> .

Table 33. Messages changed in CICS Transaction Server for z/OS, Version 4 Release 2 (continued)

Message number	Message text
DFHPI1009	<i>date time applid trannum</i> {XML   JSON} to data transformation failed. A conversion error {UNKNOWN_CONVERSION   INPUT_TOO_LONG   OUTPUT_OVERFLOW   NEGATIVE_UNSIGNED   NO_FRACTION_DIGITS   FRACTION_TOO_LONG   INVALID_CHARACTER   ODD_HEX_DIGITS   INVALID_BASE64   NOT_PURE_DBCS   INVALID_FIELD_SIZE   EXPONENT_OVERFLOW   EXPONENT_UNDERFLOW   ABSTIME_INVALID} occurred when converting field <i>fieldname</i> for {WEBSERVICE   XMLTRANSFORM   BUNDLE   EVENTBINDING   SCACOMPOSITE   JVMSERVER pipeline handler program   EPADAPTER   JSONTRANSFRM   TYPE UNKNOWN} resource_name.
DFHPI1010	<i>date time applid trannum</i> {XML   JSON} generation failed. A conversion error {UNKNOWN_CONVERSION   NEGATIVE_UNSIGNED   INVALID_CHARACTER   INVALID_PACKED_DEC   INVALID_ZONED_DEC   INCOMPLETE_DBCS   ODD_DBCS_BYTES   INVALID_FIELD_SIZE   EXPONENT_OVERFLOW   EXPONENT_UNDERFLOW   ABSTIME_INVALID} occurred when converting field <i>fieldname</i> for {WEBSERVICE   XMLTRANSFORM   BUNDLE   EVENTBINDING   SCACOMPOSITE   JVMSERVER pipeline handler program   EPADAPTER   JSONTRANSFRM   TYPE UNKNOWN} resource_name.
DFHPI9506	Parameter <i>parameter</i> exceeds the maximum valid length of <i>max</i> characters. The supplied value is <i>value</i> .
DFHPI9523E	An unexpected error occurred whilst processing file <i>file</i> . The problem is: <i>value</i> .
DFHRD0107	<i>date time applid terminal userid tranid</i> INSTALL LSRPOOL( <i>lsrname</i> )
DFHRL0103	<i>date time applid tranid</i> The CICS resource life-cycle manager failed to create the BUNDLE resource <i>bundle_name</i> because the manifest <i>manifest_file</i> specified in the bundle root directory {was not found.   is invalid.}
DFHRT4418	<i>date time applid</i> Abend <i>abcode</i> in <i>modname</i> - {Dynamic   Distributed} routing program resource definition not found.
DFHSJ0201	<i>date time applid JVMProfile</i> A call to CELQPIPI with function code INIT_SUB has failed. (Return code - X'rc' ).
DFHSJ0202	<i>date time applid JVMProfile</i> A call to CELQPIPI with function code TERM has failed. (Return code - X'rc' ). See the JVM's STDERR log for further details.
DFHSJ0203	<i>date time applid JVMProfile</i> A call to CELQPIPI with function code CALL_SUB has failed. (Return code - X'rc' ). See the JVM's STDERR log for further details.
DFHSJ0204	<i>date time applid JVMProfile</i> A call to CELQPIPI with function code CALL_SUB has failed. (Return code - X'rc' ). See the JVM's STDERR log for further details.
DFHSJ0205	<i>date time applid JVMProfile</i> A call to CELQPIPI with function code CALL_SUB has failed. (Return code - X'rc' ). See the JVM's STDERR log for further details.
DFHSJ0534	<i>date time applid</i> Deprecated option <i>option</i> found in JVM profile <i>jvmprof</i> will be ignored. The value of the USSHOME system initialization parameter will be used instead.
DFHSJ0535	<i>date time applid</i> The directory <i>directory</i> specified in the <i>parm</i> failed to open. The JVM cannot be started. Runtime error message is <i>errmsg</i> .
DFHSJ0536	<i>date time applid</i> Insufficient permission to access the directory <i>directory</i> specified in the <i>parm</i> . The JVM cannot be started.
DFHSJ0537	<i>date time applid</i> The version of CICS Java support in the directory <i>directory</i> specified in the <i>parm</i> is incorrect. The JVM cannot be started.
DFHSJ0904	<i>date time applid userid termid tranid program_name</i> Exception <i>exception</i> occurred creating object reference for class <i>className</i> .
DFHSJ0911	<i>date time applid userid JVMSERVER jvmserver</i> was not created because {there is insufficient storage.   there is a directory domain error.   a lock cannot be obtained.   there is a duplicate resource error.   it is a duplicate of one that already exists.}

Table 33. Messages changed in CICS Transaction Server for z/OS, Version 4 Release 2 (continued)

Message number	Message text
DFHSJ1004	<i>date time applid userid</i> An exception has been thrown by the <i>method_name</i> method of class <i>classname</i> running in JVMSERVER <i>jvmserver</i> . Exception 'exception'.
DFHSJ1006 E	<i>date time applid userid</i> An attempt to attach to JVMSERVER <i>jvmserver</i> has failed because {the channel name used is invalid   the JVMSERVER name is missing   the JVMSERVER name is too long   the userclass name is missing   the user channel is invalid   the XML in the PIPELINE configuration file is invalid   the JVMSERVER does not exist   the JVMSERVER is not enabled   the wrapper class cannot be found   the transaction abended   the attach of the thread failed   the wrapper method was not found   the detach of the thread failed   the JVM threw an exception   the DFH-HANDLERPLIST container is missing   the thread was forced to terminate abnormally   the thread could not be created   the JVMSERVER failed to start the OSGi service}.
DFHSO0102	<i>date time applid</i> A UNIX System Services Assembler Callable Service error (code X'code') has occurred on receipt of a severe TCP/IP return code; the TCPIPService <i>tcipservice</i> on port <i>portnumber</i> at IP address <i>ipaddress</i> will be closed.
DFHSO0106	<i>date time applid</i> A UNIX System Services Callable Service error (code X'code') has occurred in module <i>modname</i>
DFHSO0111	<i>date time applid</i> Opening the TCPIPService <i>tcipservice</i> has failed because the jobname of the region is not authorized to use the port number specified.
DFHSO0117	<i>applid</i> Unable to determine the TCP/IP host name. UNIX System Services return code X'retcode', reason code X'rc'.
DFHSO0123	<i>date time applid</i> Return code <i>rc</i> received from function '{unknown   gsk_environment_init   gsk_environment_open   gsk_environment_close   gsk_secure_socket_init   gsk_secure_socket_open   gsk_secure_socket_close   gsk_secure_socket_read   gsk_secure_socket_write   gsk_attribute_set_buffer   gsk_attribute_set_callback   gsk_attribute_set_enum   gsk_attribute_set_numeric_value}' of System SSL. Reason: {Unrecognized return code   Key database not found   Key database access not authorized   Invalid password for key database   Expired password for key database   Stashed password file not found   Session timeout value is invalid   An I/O error occurred   An unknown error occurred   Invalid distinguished name   No common ciphers negotiated   No certificate available   Certificate rejected by peer   Root certificate authority not supported   Unsupported operation   Invalid certificate signature   SSL protocol violation   Not authorized   Self-signed certificate   Invalid session state   Handle creation failed   No private key   Untrusted Certificate Authority   Certificate date invalid   Invalid cipher suite   Handshake abandoned by peer   Cannot open key database   Host certificate not yet valid   Certificate parsing error   Certificate is revoked   LDAP server is inactive   Unknown Certificate Authority   Internal error on partner   Unknown alert received   Client authentication alert   Incorrect key usage   Server name not recognized}. Peer: <i>peeraddr</i> , TCPIPService: <i>tcipservice</i> .
DFHTC2536	<i>date time applid</i> Link to DFHTEP from DFHTACP failed because {module DFHTEP is not AMODE 31   module DFHTEP could not be loaded   there is no resource definition for program DFHTEP}.
DFHTD0252	<i>applid</i> Open of queue <i>queue</i> failed. DSNAME not available from JCL or resource definition. Module <i>module</i> .
DFHTD1217	<i>applid</i> Unable to install resource definition for transient data queue <i>xxxx</i> .
DFHTD1221	<i>applid</i> Transient data queue definitions not restored, <i>xxxx</i> failed
DFHTD1278	<i>applid</i> An error occurred during initialization of intrapartition queue <i>queuename</i> for user <i>userid</i> . The queue has not been installed.
DFHUS0100	<i>applid</i> CICS is unable to listen for ENF event 71. Changing a user's RACF attributes will only take effect after the USRDELAY timeout.
DFH5120	{Primary   Secondary} CSD opened; DDNAME: <i>ddname</i> - DSNAME: <i>dsname</i>
DFH5123	{Primary   Secondary} CSD closed; DDNAME: <i>ddname</i> - DSNAME: <i>dsname</i>
DFH5124	Processing terminated. Corrupted CSD control record detected while closing {primary   secondary} CSD; DDNAME: <i>ddname</i>



Table 33. Messages changed in CICS Transaction Server for z/OS, Version 4 Release 2 (continued)

Message number	Message text
DFH5125	Error occurred while closing the {primary   secondary} CSD. File is full; DDNAME: <i>ddname</i>
DFH5273	<i>resource object</i> is not in group <i>grpname</i> .
EYUWM0503	<i>date time applid</i> Routing region ( <i>name</i> ) is running in Sysplex Optimized WLM state.
EYUWM0504	<i>date time applid</i> Routing region ( <i>name</i> ) is not running in Sysplex Optimized WLM state.
EYUWM0505	<i>date time applid</i> Target region ( <i>name</i> ) is running in Sysplex Optimized WLM state.
EYUWM0506	<i>date time applid</i> Target region ( <i>name</i> ) is not running in Sysplex Optimized WLM state.
EYUXD1001	<i>date time applid</i> Parameter ( <i>parameter</i> ) is mandatory and is missing or blank.
EYUXD1009	<i>date time applid</i> Parameter ( <i>command</i> ) is not valid input.
EYUXD1024	<i>date time applid</i> Discovery of <i>booktype (resource)</i> suppressed by filter ( <i>filter</i> ).

## Messages changed in CICS Transaction Server for z/OS, Version 4 Release 1

Table 34. Messages changed in CICS Transaction Server for z/OS, Version 4 Release 1

Message number	Message text
DFHAM4834E	<i>applid</i> Install of {TDQUEUE   PROCESSTYPE   LIBRARY   URIMAP   ATOMSERVICE} <i>resourcename</i> failed because the installed definition is not disabled.
DFHAM4851E	<i>applid</i> Install of {DB2ENTRY   DB2TRAN   DB2CONN   LIBRARY   ATOMSERVICE} <i>name</i> failed because of a security error.
DFHAM4898E	<i>applid</i> Installation of {TDQUEUE   PROCESSTYPE   LIBRARY   ATOMSERVICE} <i>resourcename</i> failed because of insufficient storage.
DFHAM4921E	<i>applid</i> The installation of CORBASERVER <i>cname</i> has failed because the specified {CORBASERVER   STATE   SESSBEANTIME   CERTIFICATE   HOST   SHELF   JNDIPREFIX} is not valid.
DFHIS1011	<i>date time applid</i> Unable to acquire IPCONN <i>ipconn</i> . An {EXCEPTION   DISASTER   INVALID   KERNERROR   PURGED} response to the capability exchange was received, reason={AUTOINSTALL_FAILED   INVALID_IPCONN_STATE   INVALID_PARTNER_STATE   IPCONN_NOT_FOUND   ISCE_ERROR   ISCE_INVALID_APPLID   ISCE_TIMED_OUT   ISCE_BAD_RECOV   ISCE_BAD_RESPONSE   ISCE_ERROR   ISCE_HTTP_ERROR   ISCE_TIMED_OUT   SESSION_OPEN_FAILED   SHUTDOWN   TCPIP_CLOSED   TCPIP_SERVICE_MISMATCH   TCPIP_SERVICE_NOT_FOUND   TCPIP_SERVICE_NOT_OPEN   NO_IPCONN   ONE_WAY_IPCONN   CAPEX_RACE   SECURITY_VIOLATION   SEC_SOCKET_ERROR   UNKNOWN}.
DFHIS2001	<i>date time applid</i> Client web session <i>sessindex</i> from <i>applid</i> <i>applid</i> accepted for IPCONN <i>ipconn</i> .
DFHIS2009	<i>date time applid</i> Client web session <i>sessindex</i> in IPCONN <i>ipconn</i> from <i>applid</i> <i>applid</i> released.
DFHIS2010	<i>date time applid</i> Server web session <i>sessindex</i> in IPCONN <i>ipconn</i> with <i>applid</i> <i>applid</i> on host <i>hostname</i> , port <i>portnumber</i> released.
DFHMQ0453I	<i>date time applid</i> Status of connection to <i>qmgr-name</i> is {Connecting   Pending   Connected   Quiescing   Stopping-Force   Disconnected   Inactive   Unknown}. <i>number</i> tasks are in flight.
DFHPI0119	<i>date time applid</i> The XML Toolkit could not be loaded. Some configurations of the CICS Supplied WS-Security handler are not usable.

Table 34. Messages changed in CICS Transaction Server for z/OS, Version 4 Release 1 (continued)

Message number	Message text
DFHPI0400	<i>date time applid tranid</i> The CICS pipeline HTTP transport mechanism failed to send a request because {the request was using an invalid host codepage   there was a socket error   the URL was invalid   the connection was closed   a socket request timed out   a proxy error was detected   there was an HTTP error   an invalid media type was used   there was an authorization problem   there was a problem with the client certificate   there was a URIMAP problem   SSL is not supported in CICS}.
DFHPI0515	<i>date time applid tranid</i> The CICS Pipeline Manager cannot run a CICS supplied WS-Security handler in pipeline: <i>pipeline</i> . The XML Toolkit was not available.
DFHPI0720E	<i>date time appliduserid</i> PIPELINE <i>pipeline</i> encountered an error in the configuration file <i>filename</i> at offset <i>X'offset'</i> . Found : <i>element_found</i> yet expected : {<service>   <transport> or <service>   a transport handler list   <service_handler_list> or <terminal_handler>   <handler>   <program>   <handler_parameter_list>   <name>   <cics_soap_1.1_handler>   <cics_soap_1.2_handler>   <header_program>   <service_handler_list>   <default_target> or a default handler list   <program_name>   <namespace>   <localname>   <mandatory>   true, false, 1 or 0   <terminal_handler>   <service_parameter_list>   <service>, <transport> or <service_parameter_list>   /}.
DFHPI0911E	<i>date time applid userid</i> WEBSERVICE WebService within PIPELINE Pipeline was not created because: {there is insufficient storage   there is a directory domain error   the specified PIPELINE is not installed   a lock cannot be obtained   there is a duplicate resource error}.
DFHPI0997	<i>date time applid tranid pipeline</i> The CICS pipeline manager has encountered an error: {PIPELINE not found   PIPELINE not active   PIPELINE mode mismatch   unhandled node failure   context switch failed   request stream creation failure   request stream transport error   target program unavailable   channel error   channel not found   URI not found   invalid URI   authorization failure   programabend   unidentified problem   timeout occurred   no request message   there was a problem with file PIDIR   attempt to register a WS-AT context twice   empty DFHREQUEST container returned from a handler   req and resp containers both returned from a handler   empty DFHRESPONSE container returned from a handler}.
DFHZC2352	<i>date time applid sysid netname</i> Intersystem parallel connection still active after TC shutdown threshold expired. (( <i>instance</i> ) Module DFHZSHU)
DFHZC2401E	<i>date time applid termid tranid</i> RPL Active. <i>sense</i> (( <i>instance</i> ) Module name: {DFHZRVS   DFHZSDA   DFHZSDL   DFHZSDS   DFHZSES   DFHZSKR   DFHZRVL   DFHZSDR})
DFHZC2405E	<i>date time applid termid tranid</i> Node <i>netname</i> not activated. <i>sense</i> (( <i>instance</i> ) Module name: {DFHZSIM   DFHZSYX   DFHZSIX})
DFHZC2411E	<i>date time applid termid tranid nodeid</i> attempted invalid logon. <i>sense</i> (( <i>instance</i> ) Module name: {DFHZSCX   DFHZBLX   DFHZATA   DFHZLGX   RESERVE   DFHTFP})
DFHZC2417E	<i>date time applid termid tranid z/OS</i> Communications Server Inactive to TCB. <i>sense</i> (( <i>instance</i> ) Module name: {DFHZOPX   DFHZCLS   DFHZOPN   DFHZRLP   DFHZRST   DFHZRVS   DFHZRVX   DFHZSDA   DFHZSDL   DFHZSDS   DFHZSES   DFHZSIM   DFHZSKR   DFHZSLX   DFHZRAC   DFHZCLX   DFHZRVL   DFHZSDR   DFHZSIX   DFHZTAX   DFHZSYX})
DFHZC2419E	<i>date time applid termid tranid</i> Unknown command in RPL. <i>sense</i> (( <i>instance</i> ) Module name: {DFHZSSX   DFHZSLX   DFHZRAC})
DFHZC2422E	<i>date time applid termid tranid</i> ZCP Logic Error. <i>sense</i> (( <i>instance</i> ) Module name: {DFHZDET   DFHZSIM   DFHZERH   DFHZNAC   DFHZSDS   DFHZEV1   DFHZOPN   DFHZRVS   DFHZSKR   DFHZSSX   DFHZSLX   DFHZRAC   DFHZARL   DFHZEV2})
DFHZC2432E	<i>date time applid termid tranid</i> Exception response received. <i>sense</i> (( <i>instance</i> ) Module name: {DFHZRVX   DFHZSSX   DFHZRAC})
DFHZC2433E	<i>date time applid termid tranid nodeid</i> Logon has failed because autoinstall is disabled. <i>sense</i> (( <i>instance</i> ) Module name: {DFHZLGX   DFHZBLX})

Table 34. Messages changed in CICS Transaction Server for z/OS, Version 4 Release 1 (continued)

Message number	Message text
DFHZC2447E	<i>date time applid termid tranid</i> A severe error has occurred as a result of a previous failure. <i>sense ((instance)</i> Module name: {DFHZOPN   DFHZRVS   DFHZSDA   DFHZRAC   DFHZFRE   DFHZRLP   DFHZACT   DFHZGET})
DFHZC2449E	<i>date time applid termid tranid</i> Bracket Error. <i>sense ((instance)</i> Module name: {DFHZRVX   DFHZRAC})
DFHZC2450E	<i>date time applid termid tranid</i> Bid issued but ATI cancelled. <i>sense ((instance)</i> Module name: {DFHZRVX   DFHZSSX   DFHZRAC})
DFHZC2456E	<i>date time applid termid tranid</i> Exception response received to a command. <i>sense ((instance)</i> Module name {DFHZSYX   DFHZRAC})
DFHZC2458E	<i>date time applid termid tranid</i> Exception response received to an exception response send. <i>sense ((instance)</i> Module name: {DFHZRVX   DFHZRAC})
DFHZC2488 E	<i>date time applid termid tranid nodeid</i> logon request rejected as terminal recovery is in progress. <i>sense ((instance)</i> Module name: {DFHZLGX   DFHZSCX   DFHZBLX})
DFHZC3205 E	<i>date time applid</i> Transaction CTIN - virtual terminal <i>termid</i> z/OS Communications Server <i>netname netname</i> . CICS cannot support the { <i>n.a.</i>   <i>combination of client and virtual terminal codepage.</i>   <i>client codepage.</i>   <i>virtual terminal codepage.</i> }
DFHZC3418 E	<i>date time applid termid tranid</i> System generation error. The <i>netname</i> logon request was rejected. <i>sense ((instance)</i> Module name: {DFHZSCX   DFHZBLX   DFHZLGX})
DFHZC3419 E	<i>date time applid termid tranid</i> Session failure. The bind parameter for node <i>netname</i> is unacceptable. <i>sense ((instance)</i> Module name: {RESERVE   DFHZBLX   DFHZSCX})
DFHZC3420 E	<i>date time applid termid tranid</i> Session connection error. Node <i>netname</i> is out of service. <i>sense ((instance)</i> Module name: {DFHZOPN   DFHZBLX})
DFHZC3433 E	<i>date time applid termid tranid</i> FMH7 was received on ISC session. Sense code is : xxxxxxxx[Error log data is :   No error log data received.   No error log data available. ]xxxxxxx <i>sense ((instance)</i> Module name: {DFHZRVX   DFHZRAC   DFHZERH})
DFHZC3442 I	<i>date time applid</i> Immediate termination of z/OS Communications Server sessions requested. <i>sense ((instance)</i> Module name: {DFHZSHU   RESERVE   DFHZTPX})
DFHZC3444 E	<i>date time applid termid tranid</i> Unexpected condition detected during RECEIVE processing. <i>sense ((instance)</i> Module name: {DFHZRVS   DFHZRAC})
DFHZC3461 I	<i>date time applid termid tranid</i> Node <i>netname</i> session started. <i>sense ((instance)</i> Module name: {DFHZOPX   DFHZEVI   DFHZEVI2})
DFHZC3480E	<i>date time applid termid tranid</i> Session could not be started due to insufficient CICS nucleus function - ISC not loaded. <i>sense ((instance)</i> Module name: {DFHZSIM   DFHZBLX   DFHZLGX})
DFHZC3482E	<i>date time applid tranid</i> Logon from node <i>nodeid</i> rejected. Insufficient storage for autoinstall request. <i>sense ((instance)</i> Module name: {DFHZLGX   DFHZBLX   DFHZSCX})
DFHZC3499E	<i>date time applid</i> OS Getmain failure in module DFH <i>modname</i> with return code X' <i>return_code</i> ' while attempting to process message DFHZC <i>message_number</i> . <i>sense ((instance)</i> Module name: {DFHZLEX   DFHZSHU   DFHZSCX   DFHZSYX   DFHZTPX   DFHZRAC   DFHZATA   DFHZLGX})
DFHZC4904E	<i>date time applid termid tranid</i> Bracket FSM error. <i>sense ((instance)</i> Module name: {DFHZRLP   DFHZSDL   DFHZSLX   DFHZRAC})
DFHZC4905E	<i>date time applid termid tranid</i> Chain FSM error. <i>sense ((instance)</i> Module name: {DFHZRLP   DFHZDET   DFHZERH   DFHZSDL   DFHZSLX   DFHZRAC})
DFHZC4906E	<i>date time applid termid tranid</i> Contention FSM error. <i>sense ((instance)</i> Module name: {DFHZDET   DFHZRAC   DFHZRLP   DFHZCLS})
DFHZC4919E	<i>date time applid termid tranid</i> Invalid indicators received. <i>sense ((instance)</i> Module name: {DFHZARL   DFHZARER})

Table 34. Messages changed in CICS Transaction Server for z/OS, Version 4 Release 1 (continued)

Message number	Message text
DFHZA4920E	<i>date time applid termid tranid</i> Invalid data received. <i>sense ((instance)</i> Module name: {DFHZERH   DFHZARL   DFHZARER})
DFHZA4922E	<i>date time applid termid tranid</i> Single session shutdown with DRAIN=CLOSE. <i>sense ((instance)</i> Module name: {DFHZRAC   DFHZGDA   DFHZERH})
DFHZA4924E	<i>date time applid termid tranid</i> Bind security password missing or invalid. <i>sense ((instance)</i> Module name: {DFHZOPX   DFHZBLX   DFHZSCX})
DFHZA4925E	<i>date time applid termid tranid</i> Inconsistent attach security required. <i>sense ((instance)</i> Module name: {DFHZOPX   DFHZOPN})
DFHZA4926E	<i>date time applid termid tranid</i> Bind security encryption error. <i>sense ((instance)</i> Module name {DFHZE1   DFHZE2})
DFHZA4937E	<i>date time applid</i> SAF request for LU6.2 bind has been rejected. Return Codes from the Security Manager are: RF= X'rf' and R0= X'r0' <i>sense ((instance)</i> Module name: {DFHZOPN   DFHZE1   DFHZE2} )
DFHZA4938E	<i>date time applid</i> SAF request for LU6.2 bind has failed with ESM return code RF= X'rf' and reason code R0= X'r0' <i>sense ((instance)</i> Module name: {DFHZOPN   DFHZE1   DFHZE2} )
DFHZA4941E	<i>date time applid</i> Bind time failure. LU6.2 profile locked. <i>sense ((instance)</i> Module name: {DFHZOPN   DFHZE1   DFHZE2} )
DFHZA4942E	<i>date time applid</i> Bind time failure. Expired LU6.2 profile found. <i>sense ((instance)</i> Module name: {DFHZOPN   DFHZE1   DFHZE2} )

## Chapter 47. New messages

These messages are new for CICS Transaction Server for z/OS, Version 5 Release 2.

Table 35. New messages in CICS Transaction Server for z/OS, Version 5 Release 2

Message number	Message text
DFHFC0600	<i>date time applid</i> BUNDLE <i>bundlename</i> has successfully installed FILE <i>filename</i> as {Enabled   Disabled}.
DFHFC6042	<i>datetime applid</i> Attempt to discard file <i>filename</i> failed.
DFHFC6043	<i>datetime applid</i> Attempt to disable bundle <i>bundlename</i> failed because file <i>filename</i> has retained locks or is in use.
DFHKE0007	<i>applid</i> Licence module DFHSIVT not found.
DFHLD0508I	<i>date time applid termid tranid</i> LIBRARY <i>libname</i> for application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> of platform <i>platformname</i> is being installed with status {Enabled   Disabled}.
DFHLD0509I	<i>date time applid termid tranid</i> Install of LIBRARY <i>libname</i> for application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> of platform <i>platformname</i> has completed successfully. Enablement status is {Enabled   Disabled}.
DFHLD0510I	<i>date time applid</i> Details for LIBRARY <i>libname</i> for application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> of platform <i>platformname</i> , ranking: <i>ranking</i> , enablement status: {Enabled   Disabled}.
DFHLD0514W	<i>date time applid termid tranid</i> Install of LIBRARY <i>libname</i> for application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> on platform <i>platformname</i> , has failed to complete successfully, for reason: {library not found.   dynamic allocation of data set failed.   concatenation of data sets failed.   open of library concatenation failed.   close of library concatenation failed.   deconcatenation of data sets failed.   de-allocation of data set failed.   mvsabend condition.   incompatible bundle set.   library not disabled.   insufficient storage.   library lock error.   library chain error.   catalog write failed.   catalog_delete failed.   unknown.} Enablement status is Disabled.
DFHLD0515E	<i>date time applid termid tranid</i> Install of LIBRARY <i>libname</i> for application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> on platform <i>platformname</i> , has failed because a LIBRARY of that name is already installed.
DFHLD0516I	<i>date time applid termid tranid</i> LIBRARY <i>libname</i> for application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> on platform <i>platformname</i> has been successfully discarded.
DFHLD0517W	<i>date time applid termid tranid</i> Discard of LIBRARY <i>libname</i> for application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> on platform <i>platformname</i> has failed for reason: {library not found.   dynamic allocation of data set failed.   concatenation of data sets failed.   open of library concatenation failed.   close of library concatenation failed.   deconcatenation of data sets failed.   de-allocation of data set failed.   mvsabend condition.   incompatible bundle set.   library not disabled.   insufficient storage.   library lock error.   library chain error.   catalog write failed.   catalog_delete failed.   unknown.}
DFHLD0518I	<i>date time applid termid tranid</i> LIBRARY <i>libname</i> for application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> of platform <i>platformname</i> has been assigned a DD name of <i>ddname</i> .
DFHLD0526I	<i>date time applid termid tranid</i> LIBRARY <i>libname</i> for application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> on platform <i>platformname</i> has been enabled.
DFHLD0527I	<i>date time applid termid tranid</i> LIBRARY <i>libname</i> for application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> on platform <i>platformname</i> has been disabled.



Table 35. New messages in CICS Transaction Server for z/OS, Version 5 Release 2 (continued)

Message number	Message text
DFHLD0528W	<i>date time applid termid tranid</i> Attempt to set attributes or status of LIBRARY <i>libname</i> for application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> on platform <i>platformname</i> has failed for reason: {library not found.   dynamic allocation of data set failed.   concatenation of data sets failed.   open of library concatenation failed.   close of library concatenation failed.   deconcatenation of data sets failed.   de-allocation of data set failed.   mvs abend condition.   incompatible bundle set.   library not disabled.   insufficient storage.   library lock error.   library chain error.   catalog write failed.   catalog_delete failed.   unknown.}
DFHLD0557I	<i>date time applid</i> Current LIBRARY search order for platform <i>platformname</i> , application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> follows.
DFHLD0558I	<i>date time applid</i> Current LIBRARY search order for application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> on platform <i>platformname</i> is empty.
DFHLD0733	<i>applid</i> Install of LIBRARY <i>libname</i> for application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> on platform <i>platformname</i> encountered an error. The LIBRARY is installed but disabled.
DFHLD0734	<i>applid</i> Install of LIBRARY <i>libname</i> for application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> on platform <i>platformname</i> encountered an error. The LIBRARY is installed as disabled.
DFHLD0735	<i>applid</i> Attempt to install or enable LIBRARY <i>libname</i> for application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> on platform <i>platformname</i> will be delayed because data set <i>dsname</i> is being recalled.
DFHLD0736	<i>applid</i> Attempt to enable LIBRARY <i>libname</i> for application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> on platform <i>platformname</i> encountered an error. The LIBRARY is disabled.
DFHLD0737	<i>applid</i> Disable processing for LIBRARY <i>libname</i> for application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> on platform <i>platformname</i> encountered an error.
DFHLD0738	<i>applid</i> Dynamic allocation of data set <i>dsname</i> for LIBRARY <i>libname</i> for application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> on platform <i>platformname</i> failed. DYNALOC return codes: X'rrrr', X'cccc', X'dddd'.
DFHLD0739	<i>applid</i> Dynamic concatenation of data sets for LIBRARY <i>libname</i> of application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> on platform <i>platformname</i> failed. DYNALOC return codes: X'rrrr', X'cccc', X'dddd'.
DFHLD0740	APPLID Open of DD for LIBRARY <i>libname</i> of application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> on platform <i>platformname</i> failed.
DFHLD0741	<i>applid</i> Dynamic unallocation of data set <i>dsname</i> for LIBRARY <i>libname</i> of application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> on platform <i>platformname</i> failed. DYNALOC return codes: X'cccc', X'rrrr', X'dddd'.
DFHLD0742	<i>applid</i> Dynamic deconcatenation of data sets for LIBRARY <i>libname</i> of application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> on platform <i>platformname</i> failed. DYNALOC return codes: X'rrrr', X'cccc', X'dddd'.
DFHLD0743	<i>applid</i> Close of DD for LIBRARY <i>libname</i> of application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> on platform <i>platformname</i> failed.
DFHLD0744	APPLID An MVS ABEND occurred during {Getmain of LIBRARY control area   Dynamic allocation   Dynamic concatenation   Open   Close   Dynamic deconcatenation   Dynamic unallocation   Freemain of LIBRARY control area} for LIBRARY <i>libname</i> of application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> on platform <i>platformname</i> .
DFHLD0745	APPLID Data set <i>dsname</i> could not be allocated for LIBRARY <i>libname</i> of application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> on platform <i>platformname</i> because CICS could not determine that the data set is valid for a dynamic LIBRARY. Reason: {LOCATE error. LOCATE macro   OBTAIN error. OBTAIN macro   not enough working storage. Loader SVC   CICS internal error. Loader SVC } return code: X'rc'

Table 35. New messages in CICS Transaction Server for z/OS, Version 5 Release 2 (continued)

Message number	Message text
DFHLD0746	<i>APPLID</i> Data set <i>dsname</i> could not be allocated for LIBRARY <i>libname</i> of application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> on platform <i>platformname</i> because it is not valid for a dynamic LIBRARY. Reason: { <i>not DASD volume</i>   <i>not partitioned organization</i>   <i>record format is not set to unspecified</i> }.
DFHMP1007	<i>date time applid</i> Policy <i>polycname</i> from BUNDLE resource <i>bundle</i> successfully enabled.
DFHMP1008	<i>date time applid</i> Policy <i>polycname</i> from BUNDLE resource <i>bundle</i> successfully disabled.
DFHMP2013	<i>date time applid</i> The CICS managed platform domain failed to create the policy scope for operation <i>operation</i> defined in BUNDLE resource <i>bundle</i> because the policy name <i>polycname</i> is invalid. The BUNDLE resources was installed with a scope of platform( <i>platformname</i> ), application( <i>applicationname</i> ), and version( <i>majorversion.minorversion.microversion</i> ).
DFHPG0111	<i>date time applid terminal userid tranid</i> Resource definition for <i>programe</i> in application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> of platform <i>platformname</i> has been added.
DFHPG0112	<i>date time applid terminal userid tranid</i> Resource definition for <i>programe</i> in application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> of platform <i>platformname</i> has been deleted.
DFHPG0113	<i>date time applid terminal userid tranid</i> An application entry point for operation <i>operationname</i> of application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> , on platform <i>platformname</i> has been set disabled and unavailable because PROGRAM <i>programname</i> has been replaced.
DFHPG0221	<i>date time applid terminal userid tranid</i> Program autoinstall exit <i>urmname</i> indicated that program <i>programe</i> in application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> of platform <i>platformname</i> should not be installed.
DFHPG0224	<i>date time applid terminal userid tranid</i> Autoinstall for program <i>programe</i> in application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> of platform <i>platformname</i> failed. Program autoinstall model <i>modelname</i> is not defined.
DFHPG0226	<i>date time applid terminal userid tranid</i> Autoinstall for program <i>programe</i> in application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> of platform <i>platformname</i> failed. Programs starting with "DFH" cannot be defined as remote programs.
DFHPG0227	<i>date time applid terminal userid tranid</i> Autoinstall for program <i>programe</i> in application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> of platform <i>platformname</i> failed. The program name is not valid.
DFHPG0228	<i>date time applid terminal userid tranid</i> Autoinstall for program <i>programe</i> in application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> of platform <i>platformname</i> failed.
DFHPG0229	<i>date time applid terminal userid tranid</i> Resource definition for <i>programe</i> in application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> of platform <i>platformname</i> has been autoinstalled using model <i>modelname</i> .
DFHPG0230	<i>date time applid terminal userid tranid</i> Resource definition for <i>programe</i> in application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> of platform <i>platformname</i> has been system autoinstalled.
DFHPG0231	<i>date time applid terminal userid tranid</i> Autoinstall for program <i>programe</i> in application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> of platform <i>platformname</i> failed. Program autoinstall model <i>modelname</i> is disabled.
DFHPG0308	<i>date time applid</i> BUNDLE <i>bundlename</i> has associated an application entry point for operation <i>operationname</i> of application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> , on platform <i>platformname</i> with PROGRAM <i>programname</i>

Table 35. New messages in CICS Transaction Server for z/OS, Version 5 Release 2 (continued)

Message number	Message text
DFHPG0309	<i>date time applid</i> BUNDLE <i>bundlename</i> has disassociated an application entry point for operation <i>operationname</i> of application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> , on platform <i>platformname</i> with PROGRAM <i>programname</i> .
DFHPG0310	<i>date time applid</i> BUNDLE <i>bundlename</i> unable to make available PROGRAM <i>programname</i> as an application entry point for operation <i>operationname</i> of application <i>applicationname</i> , version <i>majorversion.minorversion.microversion</i> , on platform <i>platformname</i> as {the PROGRAM name is invalid.   the PROGRAM does not exist.   the PROGRAM has the same name as an existing public PROGRAM.   the operation is not unique within the application.   an internal error occurred.}
DFHPG0311	<i>date time applid</i> BUNDLE <i>bundlename</i> has made the PROGRAM <i>programname</i> available as an entry point for operation <i>operationname</i>
DFHPG0312	<i>date time applid</i> BUNDLE <i>bundlename</i> has associated an application entry point for operation <i>operationname</i> with PROGRAM <i>programname</i>
DFHPG0500	<i>date time applid</i> The public version of the application entry point program <i>programname</i> for operation <i>operationname</i> of application <i>applicationname</i> on platform <i>platformname</i> is version <i>majorversion.minorversion.microversion</i> .
DFHPG0501	<i>date time applid</i> The public version of the application entry point program <i>programname</i> for operation <i>operationname</i> of application <i>applicationname</i> on platform <i>platformname</i> has changed from version <i>majorversion.minorversion.microversion</i> to version <i>majorversion.minorversion.microversion</i> .
DFHPG0502	<i>date time applid</i> All versions of the application entry point program <i>programname</i> for operation <i>operationname</i> of application <i>applicationname</i> on platform <i>platformname</i> are now unavailable.
DFHPI0200	<i>date time applid</i> BUNDLE <i>bundlename</i> has successfully installed PIPELINE <i>pipeline</i> in the {Disabled state. Enabling process initiated   Disabled state}.
DFHPI0201	<i>date time applid</i> BUNDLE <i>bundlename</i> has failed to install PIPELINE <i>pipeline</i> because {the definition is invalid   of an installation failure   an internal error occurred}.
DFHPI0202	<i>date time applid</i> PIPELINE name was not specified or is too long in BUNDLE <i>bundlename</i> .
DFHPI0203	CONFIGFILE <i>path</i> in PIPELINE <i>pipelinename</i> is too long in BUNDLE <i>bundlename</i> .
DFHPI0204	<i>date time applid userid</i> PIPELINE <i>pipeline</i> is now ENABLED and is ready for use.
DFHPI0220	<i>date time applid</i> BUNDLE <i>bundlename</i> has successfully installed WEBSERVICE <i>webservice</i> in the {Disabled state. Enabling process initiated   Disabled state}.
DFHPI0221	<i>date time applid</i> BUNDLE <i>bundlename</i> has failed to install WEBSERVICE <i>webservice</i> because {the definition is invalid   of an installation failure   an internal error occurred}.
DFHPI0222	<i>date time applid</i> WEBSERVICE name was not specified or is too long in BUNDLE <i>bundlename</i> .
DFHPI9715E	Expected keyword 'keyword' missing in line 'line'.
DFHPI9716E	Field 'name' not found for array 'array'.
DFHPI9717E	Unsupported content found after OCCURS DEPENDING ON field 'name'.
DFHPI9718E	Use of OCCURS DEPENDING ON requires use of DATA-TRUNCATION=ENABLED.
DFHPI9719E	Unsupported content found after group item 'name' with OCCURS DEPENDING ON clause.
DFHPI9720E	Unsupported keyword "UNBOUNDED" found in an OCCURS clause.
DFHPI9721W	The parameter CCSID=1200 is not supported when <i>assistant</i> is used.
DFHPI9722E	The parameter CHAR-MULTIPLIER= <i>value</i> is not supported in combination with CCSID=1200.



Table 35. New messages in CICS Transaction Server for z/OS, Version 5 Release 2 (continued)

Message number	Message text
DFHPI9723E	UTF-16 is not supported when parameter LANG=PLI-OTHER is used.
DFHPI9724E	Type <i>type</i> requires a minimum mapping level of <i>required-mapping-level</i> , but mapping level <i>actual-mapping-level</i> was specified.
DFHRL0133	<i>date time applid tranid</i> The CICS resource lifecycle manager failed to create the BUNDLE resource <i>bundle_name</i> because the <i>path_name</i> definition file was empty.
DFHRL0134 I	<i>date time applid userid</i> The CICS resource lifecycle manager has started to create BUNDLE <i>bundle_name</i> with bundle ID <i>bundle_id</i> and version <i>bundle_major.ver.bundle_minor.ver.bundle_micro.ver</i> on platform <i>platform_id</i> .
DFHRL0135 E	<i>date time applid tranid</i> The CICS resource lifecycle manager failed to associate { <i>an entry point</i>   <i>a policy scope</i> } for resource_type resource <i>resource_name</i> in BUNDLE <i>bundle_name</i> because CICS does not support platform { <i>entry points</i> .   <i>policy scopes</i> .}
DFHSJ1200	<i>date time applid</i> BUNDLE <i>bundlename</i> has successfully installed JVMSERVER <i>jvmserver</i> { <i>in a Disabled state</i> . <i>Enabling process initiated</i>   <i>in a Disabled state</i> }.
DFHSJ1203	DISABLE request for JVMSERVER <i>jvmserver</i> has been rejected.
DFHSO0137	<i>date time applid</i> BUNDLE <i>bundlename</i> has successfully installed TCPIPSERVICE <i>tcpipservice</i> as { <i>Enabled</i>   <i>Disabled</i> }.
DFHSO0140	IMMCLOSE request for TCPIPSERVICE <i>tcpipservice</i> has been rejected.
DFHWB0803	<i>date time applid</i> HFSFILE path in URIMAP <i>urimap</i> is too long in BUNDLE <i>bundlename</i> .
DFHWB0804	<i>date time applid</i> BUNDLE <i>bundlename</i> failed to set URIMAP resource <i>urimap</i> as an application entry point because CICS does not support { <i>USAGE(CLIENT)</i>   <i>USAGE(ATOM)</i> } for this resource type.
DFHWB0805	<i>date time applid</i> BUNDLE <i>currentbundlename</i> was unable to set the URIMAP <i>resourcenname</i> as an entry point because the resource is already defined as an entry point by BUNDLE <i>bundlename</i> .
DFHWB0806	<i>date time applid</i> BUNDLE <i>bundlename</i> has { <i>associated</i>   <i>disassociated</i> } an application entry point from application ( <i>applicationname</i> ), version ( <i>majorversion.minorversion.microversion</i> ) on platform ( <i>platformname</i> ) with URIMAP <i>urimapname</i> .
DFHWB0807	<i>date time applid</i> BUNDLE <i>bundlename</i> has made { <i>available</i>   <i>unavailable</i> } the application entry point for URIMAP <i>urimapname</i> with operation ( <i>operationname</i> ) for application ( <i>applicationname</i> ), version ( <i>majorversion.minorversion.microversion</i> ) on platform ( <i>platformname</i> ).
DFHWB0808	<i>date time applid</i> BUNDLE <i>bundlename</i> has failed to set URIMAP <i>urimapname</i> as an entry point because { <i>the URIMAP does not exist.</i>   <i>an internal error occurred.</i>   <i>the URIMAP resource name is invalid.</i>   <i>the URIMAP resource is already defined as an application entry point.</i> }
DFHWB1580	<i>date time applid userid</i> The availability status of URIMAP <i>urimap</i> has { <i>been set to available</i>   <i>been set to unavailable</i>   <i>reverted to none</i> } following a change to an application entry point.
EYUNL0152W	<i>date time applid</i> Get Topology for private resource { <i>UNKNOWN</i>   <i>PROGRAM</i>   <i>LIBRARY</i> } failed, COMMAND= <i>cmdname</i> RESP= <i>respcode</i> RESP2= <i>reasoncode</i> .
EYUWI0011E	<i>date time applid</i> WLM warmstart AOR normalization could not complete for all AORSCOPEs in all workloads for CONTEXT ( <i>plexname</i> ).
EYUWI0012E	<i>date time applid</i> WLM warmstart AOR normalization could not complete for AORSCOPE ( <i>csysgrp</i> ) in all workloads for CONTEXT ( <i>plexname</i> ).
EYUXD0718E	EYUDREP does not contain a CMASDEF record. The upgrade process has been terminated.
EYUXD0719I	Non maintenance point CICSplex <i>nnnnn</i> records not converted.
EYUXD0720E	EYU9XDU1 MP plex list { <i>getmain</i>   <i>freemain</i> } failed. The upgrade process has been terminated.

Some of these new CICS messages are issued when actions such as installing and discarding are performed on private LIBRARY resources. The new messages provide the same information as for the corresponding actions on public LIBRARY resources, but they also state the platform, application, and application version to which the private LIBRARY resource applies, so that you can audit or troubleshoot the actions in the relevant context. Table 36 shows which new messages for private LIBRARY resources correspond to which existing CICS messages for public LIBRARY resources.

*Table 36. Messages for private LIBRARY resources and public LIBRARY resources. Shows which new messages for private LIBRARY resources correspond to which existing CICS messages for public LIBRARY resources.*

<b>Public LIBRARY resource message (existing)</b>	<b>Private LIBRARY resource message (new)</b>
DFHLD0501	DFHLD0508
DFHLD0502	DFHLD0509
DFHLD0505	DFHLD0510
DFHLD0503	DFHLD0514
DFHLD0504	DFHLD0515
DFHLD0505	DFHLD0510
DFHLD0512	DFHLD0516
DFHLD0513	DFHLD0517
DFHLD0523	DFHLD0526
DFHLD0524	DFHLD0527
DFHLD0525	DFHLD0528
DFHLD0710	DFHLD0733
DFHLD0711	DFHLD0734
DFHLD0712	DFHLD0735
DFHLD0713	DFHLD0736
DFHLD0715	DFHLD0737
DFHLD0720	DFHLD0738
DFHLD0721	DFHLD0739
DFHLD0722	DFHLD0740
DFHLD0723	DFHLD0741
DFHLD0724	DFHLD0742
DFHLD0725	DFHLD0743
DFHLD0730	DFHLD0744
DFHLD0731	DFHLD0745
DFHLD0732	DFHLD0746

## New messages in CICS Transaction Server for z/OS, Version 5 Release 1

Table 37. New messages in CICS Transaction Server for z/OS, Version 5 Release 1

Message number	Message text
DFHAM4947 E	<i>applid</i> The installation of {BUNDLE} <i>resourcename</i> failed because an unexpected resource error occurred.
DFHAM4948 E	<i>applid</i> Installation of <i>resourcetype</i> resources is not supported on this release. CICS Transaction Server Version <i>version.release</i> was the last release to support this type of resource.
DFHAM4949 E	<i>applid</i> Installation failed because <i>restype resname</i> has already been installed by a BUNDLE resource.
DFHAM4950 E	<i>applid</i> BUNDLE definition failed because <i>restype resname</i> has already been installed.
DFHAM4951 E	<i>applid</i> The installation of {BUNDLE} <i>resourcename</i> failed because the BASESCOPE attribute is invalid.
DFHAM4952 E	<i>applid</i> The installation of standalone CICS bundle <i>resourcename</i> failed because its ID and version are a duplicate of a standalone CICS bundle that already exists.
DFHAM4953 E	<i>applid</i> Installation failed because <i>restype resname</i> has already been loaded from a BUNDLE resource.
DFHAM4954 E	<i>applid</i> Install of {TCPIPSERVICE   IPCONN   URIMAP} <i>resourcename</i> failed because user does not have authority to access the specified certificate.
DFHAP1900	<i>datetimeapplid f_nameuser_idtransaction_id output_string</i> RESP( <i>exec_resp</i> ) RESP2( <i>exec_resp2</i> )).
DFHAP1901	<i>date time applid</i> SPI audit log is available.
DFHAP1902	<i>date time applid</i> SPI audit log is unavailable.
DFHAP1903	<i>date time applid</i> CICS failed to write SPI audit message DFHAP1900.
DFHCA4948 E	<i>date time applid tranid</i> Installation of <i>resourcetype</i> resources is not supported on this release. CICS Transaction Server Version <i>version.release</i> was the last release to support this type of resource.
DFHCA4949 E	<i>date time applid tranid</i> Installation failed because <i>restype resname</i> has already been installed by a BUNDLE resource.
DFHCA4950 E	<i>date time applid tranid</i> BUNDLE definition failed because <i>restype resname</i> has already been installed.
DFHCA4951 E	<i>datetimeapplid</i> The installation of {BUNDLE} <i>resourcename</i> failed because the BASESCOPE attribute is invalid.
DFHCA4953 E	<i>datetimeapplid</i> Installation failed because <i>restype resname</i> has already been loaded from a BUNDLE resource.
DFHCC0107	DBDCCICS Local catalog data set is not initialized for this release of CICS.
DFHCS0001	No parameter specified on EXEC card.
DFHCS0002	Invalid SVC parameter specified, value <i>svcparm</i> .
DFHCS0003	Invalid SVC number specified, <i>svcnumber</i> is greater than 255.
DFHCS0004	Invalid SVC number specified, <i>svcnumber</i> is lower than 200.
DFHCS0005	Invalid module name specified, length <i>modlen</i> exceeds 8 characters.
DFHCS0006	The SVC type for SVC <i>svcnumber</i> is invalid.
DFHCS0007	Operator rejected request.
DFHEC1027	<i>date time applid</i> Event emission failed for EVENTBINDING <i>evbname</i> because the EPADAPTERSET <i>adaptersetName</i> is unavailable.
DFHEC1028	<i>date time applid</i> Event emission failed for EVENTBINDING <i>evbname</i> because the EPADAPTER <i>adapterName</i> specified in EPADAPTERSET <i>adaptersetName</i> is unavailable.

Table 37. New messages in CICS Transaction Server for z/OS, Version 5 Release 1 (continued)

Message number	Message text
DFHEC1029	<i>date time applid</i> EVENTBINDING <i>evbname</i> defines one or more system events for EPADAPTER <i>adapterName</i> which specifies synchronous event emission and is referenced by EPADAPTERSET <i>adaptersetName</i> .
DFHEC1030	<i>date time applid</i> EVENTBINDING <i>evbname</i> defines one or more system events for EPADAPTER <i>adapterName</i> which specifies transactional events and is referenced by EPADAPTERSET <i>adaptersetName</i> .
DFHEC1031	<i>date time applid</i> Event emission failed for EVENTBINDING <i>evbname</i> because one or more EPADAPTERs in the EPADAPTERSET <i>adaptersetName</i> are invalid.
DFHEC1032	<i>date time applid</i> Event emission for EVENTBINDING <i>evbname</i> has been successful after a previous failure to emit an event through {EPADAPTER EPADAPTERSET} <i>name</i> .
DFHEP1004	<i>date time applid</i> EPADAPTERSET <i>adaptersetName</i> from BUNDLE <i>bundle</i> installed successfully.
DFHEP1005	<i>date time applid</i> EPADAPTERSET <i>adaptersetName</i> from BUNDLE <i>bundle</i> discarded successfully.
DFHEP1006	<i>date time applid</i> EPADAPTERSET <i>adaptersetName</i> from BUNDLE <i>bundle</i> installed successfully, replacing a previously installed version.
DFHEP2006	<i>date time applid</i> The CICS event processing domain failed to create the EPADAPTERSET resource <i>adaptersetName</i> in BUNDLE <i>bundle</i> because {the EP adapterset name is invalid.   the XML data for the EP adapterset could not be parsed.   it is a duplicate of another EPADAPTERSET in the BUNDLE.   no EP adapter names are specified in the EP adapterset.   the EPADAPTER name has a duplicate in the EP adapterset.   an EPADAPTER name contained in the EP adapterset is invalid.}
DFHEP2007	<i>date time applid</i> The CICS event processing domain failed to create the EPADAPTERSET resource <i>adaptersetName</i> in BUNDLE <i>bundle</i> because { LOCALCCSID SIT parameter is not supported   EP adapterset schema level is not supported }.
DFHFC0543	<i>applid</i> Non-RLS OPEN of file <i>filename</i> failed. Log stream name attributes conflict with those on the VSAM data set. Base data set <i>dsname</i>
DFHFC0557	<i>applid</i> CICS is in the process of recovering data sets that require lost locks processing, <i>count</i> of <i>total</i> completed.
DFHFC6040 I	<i>datetime applid</i> Timeout period has expired processing a generic delete against an RLS file. The task was waiting on a get for update request for a locked record that was beyond the range of the generic delete. Once the get for update request has timed out, the delete command completes and the task resumes normal execution. File name <i>filename</i> . Data set name <i>dsname</i> .
DFHIS1050	<i>datetime applid</i> Heartbeat response timeout in IPCONN <i>ipconn</i> .
DFHIS1051	<i>datetime applid</i> IPCONN <i>ipconn</i> cannot be found.
DFHIS1052	<i>date time applid</i> Session error in IPCONN <i>ipconn</i> .
DFHIS2300	<i>date time applid</i> CICS IP connection heart beat initiated.
DFHIS2301	<i>date time applid</i> Unable to echo heart beat from IPCONN <i>ipconn</i>
DFHKE0217	<i>applid</i> SDUMPX request completed with a return code of X'04'. A complete or partial dump has been taken.
DFHLD0850	<i>date time applid</i> BUNDLE <i>bundlename</i> has successfully installed LIBRARY <i>library</i> as {Enabled   Disabled}.
DFHLD0851	BUNDLE <i>bundlename</i> has failed to install LIBRARY <i>library</i> because {the definition is invalid   of an installation failure   an internal error occurred}.
DFHLD0852	LIBRARY name was not specified or is too long in BUNDLE <i>bundlename</i> .
DFHMP0001	<i>applid</i> An abend (code <i>aaa/bbbb</i> ) has occurred at offset X' <i>offset</i> ' in module <i>modname</i> .
DFHMP0002	<i>applid</i> A severe error (code X' <i>code</i> ') occurred in module <i>modname</i> .

Table 37. New messages in CICS Transaction Server for z/OS, Version 5 Release 1 (continued)

Message number	Message text
DFHMP0100I	<i>applid</i> Managed platform domain initialization started.
DFHMP0101I	<i>applid</i> Managed Platform domain initialization has ended.
DFHMP1000	<i>date time applid</i> Invalid parameter list passed to MP domain module <i>modname</i> .
DFHMP1001	<i>date time applid</i> Policy scope for operation <i>operation</i> for policy <i>polycynname</i> in BUNDLE resource <i>bundle</i> successfully installed.
DFHMP1002	<i>date time applid</i> Policy scope for operation <i>operation</i> for policy <i>polycynname</i> in BUNDLE resource <i>bundle</i> successfully discarded.
DFHMP1004	<i>date time applid</i> Policy <i>polycynname</i> from BUNDLE resource <i>bundle</i> successfully installed.
DFHMP1005	<i>date time applid</i> Policy <i>polycynname</i> from BUNDLE resource <i>bundle</i> successfully discarded.
DFHMP2003	<i>date time applid</i> The CICS managed platform domain failed to create the policy <i>polycynname</i> in BUNDLE resource <i>bundle</i> because {the policy name contains invalid characters.   the XML data for the policy could not be parsed.}
DFHMP2004	<i>date time applid</i> The CICS managed platform domain failed to create policy <i>polycynname</i> in BUNDLE resource <i>bundle</i> because the {policy schema level is not supported   BASESCOPE prefix is invalid   BASESCOPE is incomplete   USERTAG contains invalid characters}: 'error_data'.
DFHMP2005	<i>date time applid</i> The CICS managed platform domain failed to create policy <i>polycynname</i> in BUNDLE resource <i>bundle</i> because the rule <i>rulename</i> { is a duplicate of another rule in the same policy.   contains invalid characters in its name.   has an event action but no EP adapter or adapter set name is specified.}
DFHMP2006	<i>date time applid</i> The CICS managed platform domain failed to create the policy <i>polycynname</i> in BUNDLE resource <i>bundle</i> because the rule <i>rulename</i> { has an invalid rule type   has an invalid item name   has an invalid operator value   has an invalid storage unit   has an invalid count unit   has an invalid time unit   has an invalidabend code   has an invalid EP adapter name   has an invalid EP adapter set name}: 'error_data'.
DFHMP2007	<i>date time applid</i> The CICS managed platform domain failed to create the policy <i>polycynname</i> in BUNDLE resource <i>bundle</i> because there are no rules defined by the policy.
DFHMP2008	<i>date time applid</i> The CICS managed platform domain failed to create the policy resource <i>polycynname</i> in BUNDLE resource <i>bundle</i> because one of its rule name is not specified.
DFHMP2009	<i>date time applid</i> The CICS managed platform domain failed to create the policy <i>polycynname</i> in BUNDLE resource <i>bundle</i> because the rule <i>rulename</i> specifies an invalid threshold value of <i>threshold</i> .
DFHMP2010	<i>date time applid</i> The CICS managed platform domain failed to create the policy scope for policy <i>polycynname</i> defined in BUNDLE resource <i>bundle</i> because it duplicates an existing policy scope for the operation <i>operation</i> which was defined in BUNDLE resource <i>bundle</i> . Both BUNDLE resources have a scope of platform( <i>platformname</i> ), application( <i>applicationname</i> ), and version( <i>majorversion.minorversion.microversion</i> ).
DFHMP2011	<i>date time applid</i> The CICS managed platform domain failed to create the policy scope for policy <i>polycynname</i> defined in BUNDLE resource <i>bundle</i> because policy <i>polycynname</i> is undefined. The bundle was installed with a scope of platform( <i>platformname</i> ), application( <i>applicationname</i> ), and version( <i>majorversion.minorversion.microversion</i> ).
DFHMP2012	<i>date time applid</i> The CICS managed platform domain failed to create the policy <i>polycynname</i> defined in BUNDLE resource <i>bundle</i> because it duplicates an existing policy with the same name and scope defined in BUNDLE resource <i>bundle</i> . Both BUNDLE resources have a scope of platform( <i>platformname</i> ), application( <i>applicationname</i> ), and version( <i>majorversion.minorversion.microversion</i> ).
DFHMP3001	<i>date time applid</i> Task <i>trannum</i> ( <i>tranid</i> ) has exceeded a policy threshold. BundleId= <i>bundleid</i> , PolicyName= <i>polycynname</i> , RuleName= <i>rulename</i> , RuleType= <i>ruletype</i> , Category= <i>category</i> , Threshold= <i>threshold</i> (Value= <i>value</i> , Unit= <i>unit</i> ), CurrentCount= <i>currentcount</i> .



Table 37. New messages in CICS Transaction Server for z/OS, Version 5 Release 1 (continued)

Message number	Message text
DFHMP3002	<i>date time applid</i> Task <i>trannum(tranid)</i> has exceeded a policy threshold and is abended with abend code <i>abcode</i> . BundleId= <i>bundleid</i> , PolicyName= <i>polycyname</i> , RuleName= <i>rulename</i> , RuleType= <i>ruletype</i> , Category= <i>category</i> , Threshold= <i>threshold</i> (Value= <i>value</i> , Unit= <i>unit</i> ), CurrentCount= <i>currentcount</i>
DFHMP3003	<i>date time applid</i> Task <i>trannum(tranid)</i> Event emission failed because the EPADAPTER resource <i>adaptername</i> { <i>is unavailable</i>   <i>specifies transactional events which are not supported</i>   <i>specifies synchronous event emission which is not supported</i> }. BundleId= <i>bundleid</i> , BundleName= <i>bundlename</i> , PolicyName= <i>polycyname</i> , RuleName= <i>rulename</i> .
DFHMP3004	<i>date time applid</i> Task <i>trannum(tranid)</i> Event emission failed because the EPADAPTERSET resource <i>adaptersetname</i> { <i>is unavailable</i>   <i>has one or more adapters not available</i> }. BundleId= <i>bundleid</i> , BundleName= <i>bundlename</i> , PolicyName= <i>polycyname</i> , RuleName= <i>rulename</i> .
DFHMP3005	<i>date time applid</i> Task <i>trannum(tranid)</i> Event emission failed because the EPADAPTER resource <i>adaptername</i> in the EPADAPTERSET <i>adaptersetname</i> { <i>is unavailable</i>   <i>specifies transactional events which are not supported</i>   <i>specifies synchronous event emission which is not supported</i> }. BundleId= <i>bundleid</i> , BundleName= <i>bundlename</i> , PolicyName= <i>polycyname</i> , RuleName= <i>rulename</i> .
DFHMP3006	<i>date time applid</i> Event emission has been successful after a previous failure to emit an event through {EPADAPTER EPADAPTERSET} <i>name</i> . BundleId= <i>bundleid</i> , BundleName= <i>bundlename</i> , PolicyName= <i>polycyname</i> , RuleName= <i>rulename</i> .
DFHMQ0719 E	<i>date time applid tranid</i> Invalid request link type for DFHMQBP3.
DFHPG0300	<i>date time applid</i> BUNDLE <i>bundlename</i> has successfully installed PROGRAM <i>programname</i> .
DFHPG0301	<i>date time applid</i> BUNDLE <i>bundlename</i> has failed to install PROGRAM <i>programname</i> because {the definition is invalid   of an installation failure   the program name cannot begin with 'DFH'   an internal error occurred}.
DFHPG0302	<i>date time applid</i> Program name was not specified or is too long in BUNDLE <i>bundlename</i> .
DFHPG0303	<i>date time applid</i> BUNDLE <i>currentbundlename</i> was unable to set the PROGRAM <i>resourcename</i> as an entry point because the resource is already defined as an entry point by BUNDLE <i>bundlename</i> .
DFHPG0304	<i>date time applid</i> BUNDLE <i>bundlename</i> has set PROGRAM <i>programname</i> as an entry point with platform ( <i>platformname</i> ), application ( <i>applicationname</i> ), version ( <i>majorversion.minorversion.microversion</i> ), and operation ( <i>operationname</i> ).
DFHPG0305	<i>date time applid</i> BUNDLE <i>bundlename</i> has removed the entry point from PROGRAM <i>programname</i> .
DFHPG0306	<i>date time applid</i> BUNDLE <i>bundlename</i> has failed to set PROGRAM <i>programname</i> as an entry point because {the PROGRAM does not exist.   the PROGRAM failed to autoinstall.   an internal error occurred.   the program name is invalid.}
DFHPG0307	Install of PROGRAM <i>programname</i> has failed because a PROGRAM of that name has already been installed by a BUNDLE.
DFHPI0404	<i>date time applid tranid</i> A failure occurred in the CICS pipeline HTTP transport mechanism for PIPELINE { <i>pipeline_name</i>   WEBSERVICE   <i>webservice_name</i> }.
DFHRL0124 E	<i>date time applid tranid</i> The CICS resource lifecycle manager failed to create resource <i>resource_name</i> of type <i>type_name</i> for BUNDLE <i>bundle_name</i> .
DFHRL0125 I	<i>date time applid userid</i> BUNDLE resource <i>bundle_name</i> is being created with BUNDLEID <i>bundle_ID</i> and version <i>bundle_major_ver.bundle_minor_ver.bundle_micro_ver</i> .
DFHRL0126 I	<i>date time applid tranid</i> The import of resource <i>resource_name</i> of type <i>type_name</i> for BUNDLE resource <i>bundle_name</i> has changed to {enabled   disabled} state.
DFHRL0127 I	<i>date time applid tranid</i> The state of BUNDLE <i>bundle_name</i> has changed to {enabled   disabled} state.

Table 37. New messages in CICS Transaction Server for z/OS, Version 5 Release 1 (continued)

Message number	Message text
DFHRL0128 I	<i>date time applid userid</i> The CICS resource lifecycle manager has started to create BUNDLE <i>bundle_name</i> with bundle ID <i>bundle_id</i> and version <i>bundle_major_ver.</i> <i>bundle_minor_ver.</i> <i>bundle_micro_ver</i> for application <i>application_id</i> version <i>appl_major_ver.</i> <i>appl_minor_ver.</i> <i>appl_micro_ver</i> on platform <i>platform_id</i> .
DFHRL0129 E	<i>date time applid tranid</i> The CICS resource lifecycle manager failed to create BUNDLE <i>bundle_name</i> because the BASESCOPE attribute is invalid.
DFHRL0130	<i>date time applid userid tranid</i> BUNDLE definition for <i>bundle_name</i> has been discarded.
DFHRL0131 E	<i>date time applid tranid</i> BUNDLE <i>bundle_name</i> failed to update the resource <i>resource_name</i> of type <i>resource_type</i> because CICS does not support { <i>entry points</i>   <i>policy scopes</i> } for this resource type.
DFHRL0132 I	<i>date time applid tranid</i> All defined resources for BUNDLE <i>bundle_name</i> are now in the { <i>enabled</i>   <i>disabled</i> } state.
DFHRM0100	<i>applid</i> Global catalog data set is not initialized for this release of CICS.
DFHRS0007 E	<i>applid</i> The RS domain long running task has terminated abnormally.
DFHSI1600	VTAM High Performance Option is active.
DFHSI1601	VTAM High Performance Option activation failed.
DFHSJ0921	<i>date time applid userid</i> A servlet request processed by JVMSERVER <i>jvmserver</i> failed to run because tranid <i>tranid</i> is disabled.
DFHSJ0922	<i>date time applid userid</i> A servlet request processed by JVMSERVER <i>jvmserver</i> failed to run because tranid <i>tranid</i> was not found.
DFHSJ0923	<i>date time applid userid</i> A servlet request processed by JVMSERVER <i>jvmserver</i> failed to run because URIMAP <i>urimap</i> is disabled.
DFHSM0137	<i>applid</i> The amount of MVS storage available to CICS is low.
DFHSM0138	<i>applid</i> The amount of MVS storage available to CICS is no longer low.
DFHSM0139	<i>applid</i> The amount of MVS storage available to CICS is critically low.
DFHSM0140	<i>applid</i> The amount of MVS storage available to CICS is no longer critically low.
DFHSO0136	<i>applid</i> A PERFORM SSL REBUILD command has completed successfully.
DFHTA0001	<i>applid</i> An abend (code <i>aaa/bbbb</i> ) has occurred at offset <i>X'offset'</i> in module <i>modname</i> .
DFHTA0002	<i>applid</i> A severe error (code <i>X'code'</i> ) has occurred in module <i>modname</i> .
DFHTA0100I	<i>applid</i> TA domain initialization has started.
DFHTA0101I	<i>applid</i> TA domain initialization has ended.
DFHTI0102	<i>applid</i> CICS Transaction Server Value Unit Edition
DFHTI0103	<i>applid</i> CICS Transaction Server Value Unit Edition runs only on a zNALC LPAR
DFHTI0200	<i>applid</i> This is CICS Transaction Server Developer Trial which expires on <i>date</i> .
DFHTI0201	<i>applid</i> CICS Transaction Server Developer Trial failed to initialize. CICS Transaction Server Developer Trial expired on <i>date</i> .
DFHWP0800	<i>date time applid</i> BUNDLE <i>bundle_name</i> has successfully installed URIMAP <i>urimdef</i> as { <i>Enabled</i>   <i>Disabled</i> }.
DFHWP0801	BUNDLE <i>bundle_name</i> has failed to install URIMAP <i>urimap</i> because (the definition is invalid   of an installation failure   an internal error occurred).
DFHWP0802	URIMAP name was not specified or is too long in BUNDLE <i>bundle_name</i> .
DFHXM0600	<i>date time applid</i> BUNDLE <i>bundle_name</i> has successfully installed TRANSACTION <i>trandef</i> as { <i>Enabled</i>   <i>Disabled</i> }.

Table 37. New messages in CICS Transaction Server for z/OS, Version 5 Release 1 (continued)

Message number	Message text
DFHXM0601	BUNDLE <i>bundlename</i> has failed to install TRANSACTION <i>trandef</i> because (the definition is invalid   of an installation failure   an internal error occurred).
DFHXM0602	Transaction name was not specified or is too long in BUNDLE <i>bundlename</i> .
DFHXM0603	<i>date time applid numICEs</i> scheduled tasks for Bundle installed TRANSACTION <i>trandef</i> have been cancelled.
DFH7040I W	EXEC COMMAND SHOULD BE TERMINATED BY 'END-EXEC'.
DFH7042I S	xxxxxxx IS PERMITTED ONLY IN AMODE(64). COMMAND NOT TRANSLATED.
DFH7045I S	AT LEAST ONE OF 'ADDRESS', 'METADATA' OR 'REFPARMS' MUST BE SPECIFIED. COMMAND NOT TRANSLATED.
DFH7049I W	'xxxxxxx' IS AN OBSOLETE OPTION. 'xxxxxxx' IS ASSUMED.
DFH7051I E	xxxxxxx NAME LONGER THAN THE xxxxxxxx CHARACTERS ALLOWED.
DFH7052I S	xxxxxxx OPTION MUST BE SPECIFIED. COMMAND NOT TRANSLATED.
DFH7056I E	REDUNDANT SPECIFICATION FOR xxxxxxxx OPTION IS IGNORED.
DFH7062I S	INCORRECT SYNTAX FOR EXEC COMMAND. COMMAND NOT TRANSLATED.
DFH7064I W	INS#1 OPTION CONFLICTS WITH INS#2 OPTION AND IS IGNORED.
DFH7068I S	xxxxxxx OPTION MUST SPECIFY A DATA AREA NOT AN EXPRESSION OR CONSTANT. COMMAND NOT TRANSLATED.
DFH7069I S	xxxxxxx OPTION IS NOT SUPPORTED AND IS IGNORED.
DFH7070I S	xxxxxxx OPTION IS NOT SUPPORTED. COMMAND NOT TRANSLATED.
DFH7071I I	VALUE OF FIRST ARGUMENT IS: -X'xxxxxxx'.
DFH7072I W	xxxxxxx MAY CAUSE INTER-RELEASE INCOMPATIBILITIES.
DFH7073I W	FIELDS ACCESSED VIA THE CSA ADDRESS MAY CAUSE INTER-RELEASE INCOMPATIBILITIES.
DFH7079I W	ARGUMENT TO xxxxxxxx OPTION DOES NOT USE THE ADDRESS SPECIAL REGISTER.
DFH7081I S	RETURN CODE xxxxxxxx WHEN ATTEMPTING TO LOAD MODULE xxxxxxxx. SEE DESCRIPTION OF DOS LOAD MACRO WITH RET=YES OPERAND.
DFH7087I W	SHIFT-OUT CODE NOT FOLLOWED BY GRAPHIC QUOTE.
DFH7088I W	POSSIBLY INVALID ECGS LITERAL.
DFH7090I E	xxxxxxx ALREADY DEFINED. SPEC IS DROPPED.
DFH7091I E	xxxxxxx INVALID UNDER CICS. SPEC IS DROPPED.
DFH7092I W	INVALID ENTRY IN POS. xxxxxxxx, xxxxxxxx IS ASSUMED.
DFH7093I E	INCORRECT xxxxxxxx. SPEC IS DROPPED.
DFH7094I E	xxxxxxx SPECIFIED FOR NON-EXISTING xxxxxxxx. SPEC IS DROPPED.
DFH7095I E	xxxxxxx INVALID FOR xxxxxxxx. SPEC IS DROPPED.
DFH7096I E	xxxxxxx INVALID IN xxxxxxxx. SPEC IS DROPPED.
DFH7097I E	xxxxxxx SPECIFIED WITHOUT xxxxxxxx. SPEC IS DROPPED.
DFH7098I E	MAXIMUM NUMBER OF xxxxxxxx EXCEEDED. SPEC IS DROPPED.
DFH7099I W	xxxxxxx FOR FILE xxxxxxxx MISSING BUT REQUIRED.
DFH7100I E	INVALID FUNCTION-NAME xxxxxxxx IN RQDLI COMMAND. COMMAND IS NOT TRANSLATED.
DFH7101I S	TYPE OF APPLICATION NOT PROCESSED BY PROPER TRANSLATOR. TRANSLATION TERMINATED.



Table 37. New messages in CICS Transaction Server for z/OS, Version 5 Release 1 (continued)

Message number	Message text
DFH7102I W	xxxxxxx SPECIFICATION OF K-LINE FOR DB-FILE SPEC. NO PCB WILL BE GENERATED FOR THIS FILE.
DFH7103I E	COMMAND REFERENCES NONEXISTING FILE-NAME. FILE-NAME IS IGNORED.
DFH7104I W	INDICATOR REQUIRED IN POS. 56-57. '13' IS ASSUMED.
DFH7105I W	ONLY ONE K-LINE SUPPORTED FOR DB-FILE SPECS.
DFH7106I E	INVALID CONTINUATION OF AN- OR OR-LINES IN C-SPECS.
DFH7107I E	NO AN- OR OR-LINES ALLOWED WITH xxxxxxxx COMMAND. COMMAND REPLACED BY SINGLE OP-CODE xxxxxxxx.
DFH7108I E	xxxxxxx. SPEC IS DROPPED.
DFH7109I E	ERROR WHEN READING SSL - END OF FILE FOUND BEFORE BOOK END.
DFH7110I U	EARLY END OF FILE ENCOUNTERED ON xxxxxxxx. TRANSLATION TERMINATED.
DFH7111I E	INCORRECT UPSI BIT SETTING. TRANSLATOR OUTPUT ROUTED TO SYSPCH.
DFH7112I U	DEVICE ASSIGNED TO xxxxxxxx INVALID. TRANSLATION TERMINATED.
DFH7113I E	ELIST COMMAND SPECIFIED WITHOUT ONE OR MORE SSA SPECIFICATIONS.
DFH7114I E	NO AUTOMATIC GENERATION OF *ENTRY PLIST POSSIBLE.
DFH7115I E	SINGLE OP-CODE xxxxxxxx INVALID. SPEC IS DROPPED.
DFH7116I S	INCORRECT xxxxxxxx. COMMAND NOT TRANSLATED.
DFH7202I S	INCORRECT SYNTAX IN ARGUMENT LIST FOR 'keyword'.
DFH7203I U	PREPROCESSOR ERROR <i>err</i> IN MODULE <i>modname</i> .
DFH7211I U	INSUFFICIENT STORAGE TO LOAD MODULE ' <i>modname</i> '. PLEASE RE-TRANSLATE IN LARGER PARTITION.
DFH7212I E	' <i>option</i> ' CONFLICTS WITH OTHER KEYWORDS SPECIFIED ON STATEMENT.
DFH7214I E	' <i>option</i> ' INVALID. REASON CODE = <i>reasoncode</i> .
DFH7223I E	A BLANK IS ASSUMED AFTER ' <i>option</i> '.
DFH7224I E	NO <i>option1</i> IN ' <i>option2</i> ' OPERAND. OPERAND IGNORED.
DFH7227I E	INVALID SYNTAX FOR <i>option</i> . REASON GIVEN IN OTHER MESSAGE(S).
DFH7231I E	' <i>option1</i> ' IS NOT VALID FOR <i>option2</i> AND IS IGNORED.
DFH7234I S	UNABLE TO APPLY DEFAULT FOR KEYWORD 'FROMLENGTH'.
DFH7236I S	UNABLE TO APPLY DEFAULT FOR KEYWORD 'LENGTH'.
DFH7261 W	" <i>ins#1</i> " IS NO LONGER SUPPORTED BUT HAS BEEN TRANSLATED.
DFH7265I E	CHARACTER AT RIGHT MARGIN IMMEDIATELY FOLLOWS A SHIFT-IN CODE. A BLANK IS ASSUMED.
DFH7266I E	A DBCS CHARACTER CANNOT BEGIN AT THE RIGHT MARGIN. A BLANK IS ASSUMED.
DFH7280I E	A MANDATORY KEYWORD HAS BEEN OMITTED FROM AN EXEC CICS INQUIRE COMMAND. THE MISSING KEYWORD IS <i>keyword</i> .
EYUBM0500I E	<i>date time applid</i> APPLDEF <i>appldef</i> cannot find file <i>filename</i> .
EYUBM0501I E	<i>date time applid</i> APPLDEF <i>appldef</i> authorization error for file <i>filename</i> .
EYUBM0502I E	<i>date time applid</i> APPLDEF <i>appldef</i> empty file found <i>filename</i> .
EYUBM0503I E	<i>date time applid</i> APPLDEF <i>appldef</i> codepage conversion error for file <i>filename</i> .
EYUBM0504I E	<i>date time applid</i> APPLDEF <i>appldef</i> invalid XML found for file <i>filename</i> .

Table 37. New messages in CICS Transaction Server for z/OS, Version 5 Release 1 (continued)

Message number	Message text
EYUBM0505I E	<i>date time applid</i> APPLDEF <i>appldef</i> mismatch detected between Application <i>application</i> <i>appversion</i> and the Binding for Application <i>binding</i> <i>bindversion</i> .
EYUBM0506I E	<i>date time applid</i> APPLDEF <i>appldef</i> contains an unbound Bundle with no deployment information <i>bundleid</i> <i>bundleversion</i> .
EYUBM0507I E	<i>date time applid</i> APPLDEF <i>appldef</i> invalid version number found for file <i>filename</i> . The maximum supported version is <i>version</i> .
EYUBM0508I E	<i>date time applid</i> APPLDEF <i>appldef</i> <i>parameter</i> not found at location <i>directory</i> .
EYUBM0509I E	<i>date time applid</i> APPLDEF <i>appldef</i> contains an unused binding for Bundle <i>bundleid</i> <i>bundleversion</i> .
EYUBM0510I E	<i>date time applid</i> APPLDEF <i>appldef</i> contains a reference to Bundle <i>bundleid</i> with a <i>version</i> number smaller than zero.
EYUBM0511I E	<i>date time applid</i> APPLDEF <i>appldef</i> contains Bundle <i>bundleid</i> <i>version</i> which is bound to an invalid region type <i>regionType</i> for PLATDEF <i>platdef</i> .
EYUBM0512I E	<i>date time applid</i> APPLDEF <i>appldef</i> contains an unexpected binding for platform <i>platform</i> . The expected platform is <i>expectedPlatform</i> .
EYUCL0202I I	<i>date time applid</i> Attempting to reconnect to CMAS sysid <i>sysid</i> .
EYUCW0109I I	<i>date time applid</i> Time zone offset from GMT computed based on CMAS time zone attributes.
EYUCW0110I I	<i>date time applid</i> Time zone offset from GMT computed based on TIMEZONE operand in SYS1.PARMLIB(CLOCKxx) or the Sysplex Timer.
EYUMM0608I E	<i>date time applid</i> Unsuccessful start for monitoring for Context( <i>context</i> ) Scope( <i>scope</i> ).
EYUPS0004I I	<i>date time applid</i> RTASAM long-running task terminated.
EYUTI0500I E	<i>date time applid</i> PLATDEF <i>platdef</i> cannot find file <i>filename</i> .
EYUTI0501I E	<i>date time applid</i> PLATDEF <i>platdef</i> authorization error for file <i>filename</i> .
EYUTI0502I E	<i>date time applid</i> PLATDEF <i>platdef</i> empty file found <i>filename</i> .
EYUTI0503I E	<i>date time applid</i> PLATDEF <i>platdef</i> codepage conversion error for file <i>filename</i> .
EYUTI0504I E	<i>date time applid</i> PLATDEF <i>platdef</i> invalid XML found for file <i>filename</i> .
EYUTI0506I E	<i>date time applid</i> PLATDEF <i>platdef</i> contains a bundle with no platform binding <i>bundleid</i> <i>bundleversion</i> .
EYUTI0507I E	<i>date time applid</i> PLATDEF <i>platdef</i> invalid version number found for file <i>filename</i> . The maximum supported version is <i>version</i> .
EYUTI0508I E	<i>date time applid</i> PLATDEF <i>platdef</i> <i>parameter</i> not found at location <i>directory</i> .
EYUTI0509I E	<i>date time applid</i> PLATDEF <i>platdef</i> contains an unused binding for Bundle <i>bundleid</i> <i>bundleversion</i> .
EYUTI0510I E	<i>date time applid</i> PLATDEF <i>platdef</i> contains a reference to Bundle <i>bundleid</i> with a <i>version</i> number smaller than zero.
EYUTS0027I I	<i>date time applid</i> Topology {Add   Remove} of Platform <i>pltname</i> initiated.
EYUTS0028I E	<i>date time applid</i> Topology {Add   Remove} of Platform <i>pltname</i> has failed.
EYUTS0029I I	<i>date time applid</i> Topology {Add   Remove} of Platform <i>pltname</i> complete.
EYUVC1209 E	Error formatting Kernel Error data.
EYUVC1218 E	This window is still busy with the previous request. Please try again.
EYUVC1242 E	The name of the map to be used is not available. If possible, the default map object will be used.

Table 37. New messages in CICS Transaction Server for z/OS, Version 5 Release 1 (continued)

Message number	Message text
EYUVC1244 E	Map ( <i>mapname</i> ) has type ( <i>namedmaptype</i> ) but the map requested is for type ( <i>requestedmaptype</i> ). No map hyperlinks will be displayed.
EYUVC1259 I	Potential result set size is below the <i>n</i> warning threshold. Click Refresh to retry with different filters or OK to proceed.
EYUVC1260 E	Internal comparison operator value ( <i>opervalue</i> ) invalid.
EYUVC1292 I	Action ( <i>action</i> ) failed in ' <i>cicsregion</i> '. <i>explanation</i>
EYUVE0226 E	View set for the wrong Object ( <i>ViewsetObject</i> ) entered. Enter a View set for the correct Object ( <i>LinkObject</i> ).
EYUVE0380 I	Last changed by ( <i>userid</i> ) at ( <i>time</i> ).
EYUVE0761 I	White space items cannot be deleted from two column detail forms.
EYUVE0901 I	No attribute grid will be displayed for this view.
EYUVE0902 E	Attribute grid must be given a caption. Please enter a caption.
EYUVE0905 I	Attribute grid must be given a caption. Please enter a caption.
EYUVE0906 E	No cell selected. Please select a cell.
EYUVE0907 E	You must select a column or row header to perform a 'Delete' or 'Insert'.
EYUVE0908 E	You cannot insert a column or a row before the column or row headers.
EYUVE0909 E	You cannot delete a column or row header.
EYUVE0910 E	You cannot delete any more rows from this attribute grid.
EYUVE0911 E	You cannot delete any more columns from this attribute grid.
EYUVE0915 I	Attribute grid deleted for view <i>viewname</i> .
EYUVE0920 E	Attribute not selected. Please select an attribute from the list.
EYUVE0921 I	Attribute grid cell contents defined.
EYUVE0925 I	Attribute grid row deleted.
EYUVE0926 I	Attribute grid column deleted.
EYUVE0930 I	Attribute grid cell contents changed.
EYUVE0936 I	Attribute grid cell contents edited.
EYUVE0940 I	Attribute grid cell title edited.
EYUVE1001 E	An unrecoverable editor error has occurred (Screen number <i>screennumber</i> ).
EYUVE1002 E	Invalid editor request (Screen number <i>screennumber</i> ).
EYUVS0927 W	Import completed. No matching records found.
EYUVS0928 W	Export completed. No matching records found.
EYUWI0020I I	<i>date time applid</i> WLM Routing initiated for Workload( <i>ins#1</i> ) in Routing Region( <i>ins#2</i> ).
EYUWI0021I I	<i>date time applid</i> WLM Routing initialization failed for Workload( <i>workload</i> ) in Routing Region( <i>region</i> ).
EYUWI0090I I	<i>date time applid</i> CMAS <i>ins#1</i> is unavailable for workload <i>ins#2</i> .
EYUXL0020I I	<i>date time applid</i> ESSS connection in progress { <i>to</i> CICSplex( <i>plexname</i> ) } { <i>for</i> SYSID( <i>sysname</i> ) }
EYUXL0033I I	<i>date time applid</i> Attempting to PURGE TRANID( <i>trandid</i> ), TASKID( <i>taskid</i> ), METHOD( <i>method</i> ), CALLER( <i>caller</i> ).
EYUXM0002I I	<i>date time applid</i> Caller <i>caller</i> Compid <i>compid</i> SubCompid <i>subcomp</i> Message Number <i>msgnum</i> .
EYUXM0003I I	<i>date time applid</i> Variable <i>var1</i> <i>var2</i> .

Table 37. New messages in CICS Transaction Server for z/OS, Version 5 Release 1 (continued)

Message number	Message text
EYUXM0500I E	<i>date time applid</i> Component inactive.
EYUXM0501I E	<i>date time applid</i> Component message prototype table does not exist for Compid <i>compid</i> .
EYUXM0502I E	<i>date time applid</i> Caller <i>caller</i> has issued a message with a { <i>Compid</i>   <i>Class</i>   <i>Message Number</i>   <i>SubCompid</i> } name not defined.
EYUXM0503I E	<i>date time applid</i> Stack Overflow , message text not completed.
EYUXM0504I E	<i>date time applid</i> Premature UnStack issued , message text not completed.
EYUXU1457 I	Export is not supported for <i>ResourceType</i> records
EYUXZ0008 W	Filename <i>filename</i> is required, processing is terminated.
EYUXZ0100I I	<i>date time applid</i> MAS trace processing long running task started.
EYUXZ0101I I	<i>date time applid</i> MAS trace processing long running task terminated.
EYUXZ0102 E	<i>date time applid</i> MAS trace processing long running task terminated abnormally.

## New messages in CICS Transaction Server for z/OS, Version 4 Release 2

Table 38. New messages in CICS Transaction Server for z/OS, Version 4 Release 2

Message number	Message text
DFHAM4807 E	<i>applid</i> Install failed for LSRPOOL with LSRPOOLID( <i>lsrpoolid</i> ). The MAXKEYLENGTH is less than 22 which is incorrect for use by the CSD.
DFHAP1605	<i>date time applid</i> A SIGABRT signal has been received by a JVM server. CICS will shut down immediately.
DFHCA4807	<i>date time applid tranid</i> Install failed for LSRPOOL with LSRPOOLNUM <i>lsrpoolnum</i> . The MAXKEYLENGTH is less than 22 which is incorrect for use by the CSD.
DFHCA5208	<i>date time applid netname tranid</i> Resource defined but no value was specified for xxxxxxxx. Ensure that the resource is updated.
DFHCA5209	<i>date time applid netname tranid</i> No command encountered. The input file might be empty.
DFHCE3554	You cannot mix passwords and password phrases in a change request.
DFHDH0300	<i>applid</i> File <i>filename</i> could not be opened ( <i>rrrr</i> ). Response <i>X'xxxx'</i> , Reason <i>X'yyyy'</i> .
DFHEC1011	<i>date time applid</i> The CICS event capture component failed to create the EVENTBINDING resource <i>evbname</i> in BUNDLE <i>bundle</i> because the capture specification <i>capspec</i> { <i>filter</i> <i>predicate</i> could not be built.   <i>has an invalid name</i> .   <i>is a duplicate</i> .}
DFHEC1012	<i>date time applid</i> The CICS event capture component failed to create the EVENTBINDING resource <i>evbname</i> in BUNDLE <i>bundle</i> because the capture specification <i>capspec</i> { <i>has an invalid event name</i> :   <i>exceeds the maximum number of data items</i> :   <i>contains invalid capture data type</i> , <i>item number</i> :   <i>has an invalid business information name</i> :   <i>has an overlength formatPrecision in data item</i> :   <i>has an invalid captureDataPrecision in data item</i> :   <i>has an invalid captureLength in data item</i> :   <i>has an invalid formatdataType in data item</i> :   <i>has an invalid formatLength in data item</i> :   <i>has an invalid captureDataType in data item</i> :   <i>error_data</i> .
DFHEC1013	<i>date time applid</i> The CICS event capture component failed to create the EVENTBINDING resource <i>evbname</i> in BUNDLE <i>bundle</i> because the { <i>LOCALCSSID</i> <i>SIT</i> parameter is not supported:   <i>event binding schema level is not supported</i> :   <i>event binding USERTAG is invalid</i> :   <i>error_data</i> .
DFHEC1016	<i>date time applid</i> EVENTBINDING <i>evbname</i> from BUNDLE <i>bundle</i> installed successfully, replacing a previously installed version.
DFHEC1022	<i>date time applid</i> Event emission failed for EVENTBINDING <i>evbname</i> because the EPADAPTER <i>adapterName</i> is unavailable.

Table 38. New messages in CICS Transaction Server for z/OS, Version 4 Release 2 (continued)

Message number	Message text
DFHEC1023	<i>date time applid</i> EVENTBINDING <i>evbname</i> which defines one or more system events references EPADAPTER <i>adapterName</i> which specifies transactional events. Transactional system events are not supported.
DFHEC1024	<i>date time applid</i> EVENTBINDING <i>evbname</i> which defines one or more system events references EPADAPTER <i>adapterName</i> which specifies synchronous event emission. Synchronous event emission is not supported for system events.
DFHEC1026	<i>applid</i> CEPF is stopping Event Processing after a severe error.
DFHEC3111	<i>date time applid</i> The decimal floating point facility (DFP) is not installed, but is required for capture specification <i>cs_name</i> in event binding <i>evb_name</i> .
DFHEC3112	<i>date time applid</i> The binary floating point facility (DFP) is not installed, but is required for capture specification <i>cs_name</i> in event binding <i>evb_name</i> .
DFHEC4006 E	<i>date time applid tranid</i> Transaction start EP adapter failed to emit an event to transaction <i>tranid</i> for event binding <i>evbname</i> . START TRANSID failed with response code <i>response</i> and reason code <i>reason</i> .
DFHEC4009	<i>date time applid tranid</i> TSQ EP Adapter failed to emit an event to queue <i>queueName</i> for event binding <i>evbname</i> because the queue is not defined as recoverable.
DFHEC4010	<i>date time applid tranid</i> TSQ EP Adapter failed to emit an event to queue <i>queueName</i> for event binding <i>evbname</i> because the queue is defined as recoverable.
DFHEC4113	<i>date time applid tranid</i> WebSphere MQ EP adapter failed to emit an event to queue <i>queue_name</i> for event binding <i>evbname</i> . WebSphere MQ function MQPUT1 returned with completion code <i>comp_code</i> .
DFHEC4118	<i>date time applid tranid</i> The TSQ EP adapter truncated an event for capture specification <i>csname</i> in event binding <i>evbname</i> to queue <i>queueName</i> . The event's size of <i>buffer_length</i> bytes exceeds the maximum length for TS queues.
DFHEC4119	<i>date time applid tranid</i> TSQ EP adapter failed to emit an event to queue <i>queueName</i> for event binding <i>evbname</i> . WRITEQ TS returned with condition <i>resp</i> reason code <i>reason</i> .
DFHEC4120	<i>date time applid tranid</i> The HTTP EP Adapter failed to emit event for capture specification <i>csname</i> in event binding <i>evbname</i> using URIMAP <i>urimap_name</i> . <i>function</i> returned with response code <i>resp</i> reason code <i>resp2</i> .
DFHEC4121	<i>date time applid tranid</i> The HTTP EP Adapter failed to emit an event for capture specification <i>csname</i> in event binding <i>evbname</i> using URIMAP <i>urimap_name</i> . Server responded with HTTP status code <i>http_status_code</i> .
DFHEC4122	<i>date time applid tranid</i> The HTTP EP Adapter failed to emit event for capture specification <i>csname</i> in event binding <i>evbname</i> using URIMAP <i>urimap_name</i> . <i>function</i> returned with response code <i>resp</i> reason code <i>resp2</i> .
DFHEC4123	<i>date time applid tranid</i> The HTTP EP Adapter failed to emit an event for capture specification <i>csname</i> in event binding <i>evbname</i> using URIMAP <i>urimap_name</i> . Server responded with HTTP status code <i>http_status_code</i> .
DFHEP0120	<i>date time applid tranid</i> The EP adapter transaction ID of <i>adapter_tranid</i> in event binding <i>evbname</i> is defined to start the wrong program for this type of adapter. Event discarded.
DFHEP0121	<i>date time applid</i> Synchronous event emission by EPADAPTER <i>epadapter</i> failed for an event from EVENTBINDING <i>evbname</i> . The UOW will be backed out.
DFHEP0122	<i>applid</i> The EPADAPTER transaction ID <i>adapter_tranid</i> is not enabled for use during CICS shutdown. An event from EVENTBINDING <i>evbname</i> has been discarded.
DFHEP0123	<i>applid</i> EP domain is quiescing but <i>adapter_tasks</i> EP adapter tasks are still active.
DFHEP1000	<i>date time applid</i> Invalid parameter list passed to EP domain module <i>modname</i> .
DFHEP1001	<i>date time applid</i> EPADAPTER <i>adaptername</i> from BUNDLE <i>bundle</i> installed successfully.
DFHEP1002	<i>date time applid</i> EPADAPTER <i>adaptername</i> from BUNDLE <i>bundle</i> discarded successfully.



Table 38. New messages in CICS Transaction Server for z/OS, Version 4 Release 2 (continued)

Message number	Message text
DFHEP1003	<i>date time applid</i> EPADAPTER <i>epadapter</i> from BUNDLE <i>bundle</i> installed successfully, replacing a previously installed version.
DFHEP2001	<i>date time applid</i> The CICS event processing domain failed to create EP adapter resource <i>adapter</i> in BUNDLE <i>bundle</i> because the EP adapter, which is of type <i>adapterType</i> and emission mode <i>emitmode</i> , requires a program name.   , does not support transactional events.   , requires a transaction ID.   , is invalid or unrecognised.   , has an invalid or unsupported event format.   , has an unsupported combination of attributes.)
DFHEP2002	<i>date time applid</i> The CICS event processing domain failed to create the EPADAPTER resource <i>adaptername</i> in BUNDLE <i>bundle</i> because {the EP adapter name is invalid.   the XML data for the EP adapter could not be parsed.   the eventDispatcher is missing or invalid.   the configuration data is too long.   it is a duplicate of another EPADAPTER in the BUNDLE.}
DFHEP2003	<i>date time applid</i> The CICS event processing domain failed to create the EP adapter resource <i>adaptername</i> in BUNDLE <i>bundle</i> because the {LOCALCCSID <i>SIT</i> parameter is not supported:   EP adapter schema level is not supported: } <i>error_data</i> .
DFHEP2005	<i>date time applid</i> The CICS event processing domain found an inconsistency in the advanced options during install of EP adapter <i>adaptername</i> with emission mode <i>emitmode</i> and type <i>adapterType</i> . The <i>option</i> option is ignored.
DFHIS1042	<i>date time applid</i> Transaction <i>tranid</i> not defined.
DFHIS3031 E	<i>date time applid</i> Transaction <i>tranid</i> failed to establish security for userid <i>userid</i> with IPCONN <i>ipconn</i> . SAF codes are (X'safresp',X'safreas'), ESM codes are (X'esmresp',X'esmreas').
DFHIS3032 E	<i>date time applid</i> Transaction <i>tranid</i> using terminal <i>termid</i> failed to establish security for userid <i>userid</i> with IPCONN <i>ipconn</i> . SAF codes are (X'safresp',X'safreas'), ESM codes are (X'esmresp').
DFHME0103	<i>applid</i> Insufficient 64-bit storage to load module <i>modname</i> .
DFHME0213	<i>applid</i> Incorrect parameters used in call to DFHME64 for message <i>msgno</i> .
DFHME0215	<i>applid modname</i> Message module for language <i>language</i> not found. The default module <i>modnameb</i> is used.
DFHME0217	<i>applid</i> The Message User Exit point XMEOUT is unavailable for message <i>msgno</i> .
DFHME0218	<i>applid</i> An error has occurred when calling the Message User Exit for message <i>msgno</i> .
DFHME0220I	<i>applid</i> Message <i>msgno</i> has been rerouted to its original destination.
DFHME0222	<i>applid</i> The Message User Exit has returned invalid route code information for message number <i>msgno</i> .
DFHME0223	<i>applid</i> The Message User Exit has returned invalid TD queue information for message number <i>msgno</i> .
DFHME0225	<i>applid</i> The Message User Exit has returned an invalid return code <i>rc</i> for message <i>msgno</i> .
DFHME0232	<i>applid</i> The User's Message Exit program has failed while processing message <i>msgno</i> .
DFHME0237	<i>applid</i> Message <i>msgno</i> cannot be rerouted to a transient data destination by the message user exit XMEOUT.
DFHME0240	<i>applid</i> CICSplex SM messages cannot be issued because the English message table <i>modname</i> cannot be found.
DFHML0101	<i>date time applid tranid</i> Call to z/OS XML System Services parser for function <i>function</i> failed with return code X'return_code' and reason code X'reason_code' at data offset X'error_offset'.
DFHML0600	<i>date time applid userid tranid</i> JSONTRANSFRM <i>jsontransfrm_name</i> for BUNDLE <i>owner_name</i> has been added.
DFHML0601	<i>date time applid userid tranid</i> JSONTRANSFRM <i>jsontransfrm_name</i> for BUNDLE <i>owner_name</i> has been deleted.

Table 38. New messages in CICS Transaction Server for z/OS, Version 4 Release 2 (continued)

Message number	Message text
DFHML0602	<i>date time applid userid tranid</i> JSONTRANSFRM <i>jsontransfrm_name</i> for BUNDLE <i>owner_name</i> has been {ENABLED   DISABLED}.
DFHML0603	<i>date time applid userid tranid</i> JSONTRANSFRM <i>jsontransfrm_name</i> for BUNDLE <i>owner_name</i> cannot be installed as a duplicate JSONTRANSFRM resource with the same name already exists.
DFHML0604	<i>date time applid userid tranid</i> JSONTRANSFRM <i>jsontransfrm_name</i> for BUNDLE <i>owner_name</i> cannot be {ENABLED   DISABLED   DISCARDED} because it is in the {ENABLING   ENABLED   DISABLING   DISABLED   DISCARDING   PERMANENTLY DISABLED   UNKNOWN} state.
DFHML0605	<i>date time applid userid tranid</i> JSONTRANSFRM <i>jsontransfrm_name</i> for BUNDLE <i>owner_name</i> has an unsupported runtime level.
DFHML0609	<i>date time applid userid tranid</i> JSONTRANSFRM <i>jsontransfrm_name</i> for BUNDLE <i>owner_name</i> cannot be installed as one or more invalid characters exist in the resource name.
DFHML0610	<i>date time applid userid tranid</i> JSONTRANSFRM <i>jsontransfrm_name</i> for BUNDLE <i>owner_name</i> is incompatible with the LOCALCCSID.
DFHMQ2065	<i>date time applid</i> Resynchronization outstanding for queue manager <i>qmgr</i> after CICS-MQ group attach has connected to queue-sharing group <i>qsg</i> .
DFHMQ2066	<i>date time applid</i> Resynchronization outstanding for queue-sharing group <i>qsg</i> after CICS-MQ group attach has connected to queue manager <i>qmgr</i> .
DFHPI1949	<i>applid</i> CANCEL reply received. CICS is terminating.
DFHPI0603 I	<i>date time applid</i> The CICS SOAP handler has received an unexpected HTTP GET for URI <i>Uri</i> .
DFHPI0728 E	<i>date time applid userid</i> PIPELINE <i>pipeline</i> encountered an error in the configuration file <i>filename</i> for the pipeline. The repository Axis2 configuration file <i>element</i> cannot be accessed by CICS.
DFHPI0729 E	<i>date time applid userid</i> PIPELINE <i>pipeline</i> encountered an error in the pipeline configuration file <i>filename</i> at offset <i>X'offset'</i> . The CICS Java SOAP handler cannot be an intermediate message handler.
DFHPI0734 E	<i>date time applid</i> Error 'exception' occurred whilst configuring PIPELINE <i>pipeline</i> within a JVMSERVER.
DFHPI0735 E	<i>date time applid</i> Error exception occurred whilst configuring WEBSERVICE <i>webservice</i> within a JVMSERVER.
DFHPI0736 E	<i>date time applid</i> PIPELINE <i>pipeline</i> encountered an error in the configuration file <i>filename</i> for the pipeline. The file has both <apphandler> and <apphandler_class> elements specified. You may only specify one of these elements.
DFHPI0905 E	<i>date time applid userid</i> WEBSERVICE <i>WebService</i> within PIPELINE <i>Pipeline</i> cannot check for archive file because the WSDL name <i>Name</i> is too long.
DFHPI0906 E	<i>date time applid userid</i> WEBSERVICE <i>WebService</i> within PIPELINE <i>Pipeline</i> cannot generate URIMAP for WSDL discovery because URI <i>Uri</i> is too long.
DFHPI9049 E	Array <i>name</i> occurs <i>occurs</i> times. The largest supported value is <i>max</i> .
DFHPI9685 E	A language structure cannot be parsed. Please ensure that the statement terminator characters are correct and that any brackets are matched.
DFHPI9686 W	Structure <i>structureName</i> is ignored for container <i>containerName</i> as the container is defined as type 'char'.
DFHPI9687 W	Unexpected text <i>text</i> found in columns <i>start_column</i> to <i>end_column</i> . Text is ignored.
DFHPI9688 E	Unexpected End of Line condition encountered for line ' <i>line</i> ' of file <i>filename</i> .
DFHPI9691E	Invalid JSON schema. A JSON schema is a JSON document, and that document must be an object.

Table 38. New messages in CICS Transaction Server for z/OS, Version 4 Release 2 (continued)

Message number	Message text
DFHPI9692E	Unsupported JSON schema. A JSON schema requires a "type" keyword with single string value.
DFHPI9693E	Invalid JSON schema. It contains an undefined JSON schema "type" of 'typevalue'.
DFHPI9694E	Unsupported JSON schema. JSON schema "type" of 'typevalue' is not supported.
DFHPI9695E	Unsupported JSON schema. A JSON schema "type" of "object" without a "properties" keyword is not supported.
DFHPI9696E	Invalid JSON schema. The value of "properties" keyword must be an object.
DFHPI9697E	Invalid JSON schema. The value of "required" keyword must be an array.
DFHPI9698E	Unsupported JSON schema. A JSON schema "type" of "array" without an "items" keyword is not supported.
DFHPI9699E	PICTURE strings are not supported for COMP-1 and COMP-2 fields. Problem found for field "fieldName".
DFHPI9700E	Unsupported JSON schema. A JSON schema "type" of "object" with an "additionalProperties" keyword is only supported with value false.
DFHPI9701E	Unsupported JSON schema. The JSON schema keyword 'keyword' is not supported.
DFHPI9702E	Unsupported JSON schema. A JSON schema "type" of "array" with an "additionalItems" keyword is only supported with value false.
DFHPI9703E	Invalid JSON schema. The JSON schema keyword 'keyword' requires the keyword 'required' to be present.
DFHPI9704W	The JSON schema keyword 'keyword' is not recognized and will be ignored.
DFHPI9705E	Invalid JSON schema. The JSON schema keyword "required" includes elements 'missing' that are not in the "properties" keyword.
DFHPI9706E	Invalid JSON schema. The JSON schema keyword 'keyword' for an array has a bad value.
DFHPI9707E	Invalid JSON schema. The JSON schema keywords "maximum" or "minimum" for an integer have a bad value.
DFHPI9708W	The JSON schema format 'format' for "type" of 'type' is not recognized and will be ignored.
DFHPI9709E	Invalid JSON schema. The JSON schema keywords "maxLength" or "minLength" for a string have a bad value.
DFHPI9710E	Invalid JSON schema. The JSON schema keywords 'keywords' are not compatible with JSON schema "format" 'format'.
DFHPI9711W	Possible bad integer read. The numeric value 'number' is rounded to integer 'integer'.
DFHPI9712W	For JSON schema "type" of "number" with "decimal" format, display is limited to 18 digits.
DFHPI9713E	For JSON schema "type" of "number" with "decimal" format, absolute values are limited to 1.0E19.
DFHPI9714E	Unsupported JSON schema. In element 'element', the JSON schema 'type' of 'array' is not supported for 'items' keyword.'
DFHRL0122 E	<i>applid</i> The CICS resource life-cycle manager failed to re-create the resource <i>resource_name</i> for BUNDLE resource <i>bundle_name</i> .
DFHRT4424	<i>time applid</i> Use of EDF is not supported with IPIC communication to system <i>sysid</i> . The routing session is still active. To terminate the routing session type CANCEL.
DFHSJ0101I	<i>applid</i> The JVM (SJ) domain for Java has started initializing. Java is a trademark of Oracle and/or its affiliates.
DFHSJ0102I	<i>applid</i> SJ domain initialization has ended.
DFHSJ0103	<i>applid</i> SJ domain initialization has failed.



Table 38. New messages in CICS Transaction Server for z/OS, Version 4 Release 2 (continued)

Message number	Message text
DFHSJ0210	<i>date time applid</i> An attempt to start a JVM for the JVMSERVER resource <i>jvmserver</i> has failed. Reason code {JVMPROFILE_ERROR   OPEN_JVM_ERROR   JNI_CREATE_NOT_FOUND   SETUP_CLASS_NOT_FOUND   TERMINATION_CLASS_NOT_FOUND   CREATE_JVM_FAILED   CHANGE_DIRECTORY_CALL_FAILED   STDOUT/STDERR_ACCESS_FAILED   ERROR_LOCATING_MAIN_METHOD   ATTACH_JNI_THREAD_FAILED   SETUP_CLASS_TIMEDOUT   ENCLAVE_INIT_FAILED   ERROR_CODE_UNRECOGNIZED}.
DFHSJ0211	<i>date time applid</i> An exception has been thrown by the main method of a setup class, which was running in the JVM belonging to the JVMSERVER resource <i>jvmserver</i> .
DFHSJ0212	<i>date time applid</i> An error occurred while terminating the JVM belonging to the JVMSERVER resource <i>jvmserver</i> . Reason code {TERMINATION_CLASS_NOT_FOUND   ERROR_LOCATING_MAIN_METHOD   ERROR_CODE_UNRECOGNIZED   TERMINATION_CLASS_TIMED_OUT}.
DFHSJ0213	<i>date time applid</i> An exception has been thrown by the main method of a termination class, which was running in the JVM belonging to the JVMSERVER resource <i>jvmserver</i> .
DFHSJ0214	<i>date time applid</i> A class in a JVM Server has invoked System.exit(). CICS will shut down immediately.
DFHSJ0215	<i>date time applid</i> The JVM Server <i>jvmserver</i> failed to initialize the OSGi framework. The JVM will be terminated.
DFHSJ0540	<i>date time applid</i> The <b>USSHOME</b> System Initialization Parameter is set to NONE. CICS will attempt to use the value of CICS_HOME from the JVM profile <i>jvmprof</i> instead.
DFHSJ0541	<i>date time applid</i> The <b>USSHOME</b> System Initialization Parameter is set to NONE and CICS_HOME is not specified in the JVM profile <i>jvmprof</i> . The JVM cannot be started.
DFHSJ0542	<i>date time applid</i> Wildcard expansion of CLASSPATH_SUFFIX in the JVM profile <i>jvmprof</i> has resulted in a class path which is too long. Some elements of the class path might be missing.
DFHSJ0600 W	<i>date time applid userid termid tranid program name</i> 256 unclosed FileBrowse browse sessions exist for task <i>trannum</i> .
DFHSJ0919 I	<i>date time applid userid</i> JVMSERVER <i>jvmserver</i> is processing any queued OSGi bundles.
DFHSJ1007 W	<i>date time applid</i> JVMSERVER <i>jvmserver</i> is being disabled by CICS because it is in an inconsistent state.
DFHSJ1008 W	<i>date time applid</i> CICS is enabling JVMSERVER <i>jvmserver</i> after successfully disabling the resource.
DFHSJ1100	<i>date time applid</i> An attempt to install an OSGi bundle into JVM server <i>jvmserver</i> has failed. OSGi bundle symbolic name <i>OSGiBundle</i> , version <i>version</i> , reason code {ERROR_CODE_UNRECOGNIZED   JVMSERVER_NOT_FOUND   EXCEPTION_FROM_JVMSERVER   JVMSERVER_NOT_OSGI_ENABLED   INTERNAL_ERROR   DUPLICATE_OSGI_BUNDLE_FOUND}.
DFHSJ1101	<i>date time applid</i> An attempt to enable an OSGi bundle in JVM server <i>jvmserver</i> has failed. OSGi bundle symbolic name <i>OSGiBundle</i> , version <i>version</i> , reason code {ERROR_CODE_UNRECOGNIZED   EXCEPTION_FROM_JVMSERVER}.
DFHSJ1102	<i>date time applid</i> An attempt to disable an OSGi bundle in JVM server <i>jvmserver</i> has failed. OSGi bundle symbolic name <i>OSGiBundle</i> , version <i>version</i> , reason code {ERROR_CODE_UNRECOGNIZED   EXCEPTION_FROM_JVMSERVER}.
DFHSJ1104I W	<i>date time applid</i> The OSGi bundle has not been installed because the JVM server <i>jvmserver</i> is not enabled. OSGi bundle symbolic name <i>OSGiBundle</i> , version <i>version</i> .
DFHSJ1105	<i>date time applid bundletype</i> BUNDLE <i>resname</i> from BUNDLE <i>bundlename</i> has been installed as {Enabled   Disabled}.

Table 38. New messages in CICS Transaction Server for z/OS, Version 4 Release 2 (continued)

Message number	Message text
DFHSJ1106	<i>date time applid</i> OSGIBUNDLE <i>resname</i> from BUNDLE <i>bundlename</i> has been discarded.
DFHSO0135	<i>applid</i> An attempt to create a socket has failed because the request has timed out.
DFHTD1290	<i>applid</i> Program DFHTDRP cannot be found.
DFHTM1718	<i>date time applid</i> About to link to user PLT program <i>progname</i> during the first stage of shutdown.
DFHTM1719	<i>date time applid</i> About to link to user PLT program <i>progname</i> during the second stage of shutdown.
DFHTR0119	<i>applid</i> No DCB storage available for auxiliary trace data set. Auxiliary trace is inoperative.
DFHTR0122	STORAGE FOR INTERNAL TRACE TABLE NOT AVAILABLE - TRACE INOPERATIVE.
DFHTR0123	REQUESTED TRACE TABLE SIZE NOT AVAILABLE.
DFHTR0124	<i>applid</i> UNABLE TO BUILD TRACE CELL POOL IN 64-BIT STORAGE.
DFHTR1004	<i>applid</i> CICS system dump requested by global trap exit DFHTRAP in module <i>modname</i> . The dump will be taken whilst holding the trace lock.
DFHTS1601	<i>date time applid</i> Main temporary storage usage has reached <i>xx%</i> of TSMMAINLIMIT storage.
DFHTS1602	<i>date time applid</i> Main temporary storage has attempted to exceed the TSMMAINLIMIT storage limit.
DFHTS1603	<i>date time applid</i> The TSMMAINLIMIT storage limit has been changed from <i>xxxx</i> MB to <i>yyyy</i> MB.
DFHTS1604	<i>date time applid</i> Main temporary storage usage has fallen below 70% of TSMMAINLIMIT.
DFHTS1605	<i>date time applid</i> Scan of local temporary storage queues completed. <i>XXXX</i> local temporary storage queues were scanned and <i>YYYY</i> were deleted.
DFHTS1606	<i>date time applid</i> The TSMMAINLIMIT has been left unchanged at <i>xxxx</i> MB.
DFHTS1607	<i>date time applid</i> An attempt to increase TSMMAINLIMIT has failed. The TSMMAINLIMIT setting has been left unchanged.
DFHTS1608	<i>applid</i> TS domain initialization has failed because an attempt was made to set TSMMAINLIMIT to a value greater than 25% of MEMLIMIT.
DFHUS0300	<i>date time applid</i> An ICRX has been supplied without a realm for DNAME= <i>dname</i> .
DFHW20134	<i>date time applid</i> Configuration error for ATOMSERVICE <i>atomservice</i> . Version number <i>version</i> in the configuration file is not supported at this level of CICS.
DFHW20135	<i>date time applid</i> Configuration error for ATOMSERVICE <i>atomservice</i> . Attribute <i>attr1</i> on element <i>prefix:element</i> is not available at version <i>version</i> of the configuration file.
DFHW20136	<i>date time applid</i> Configuration error for ATOMSERVICE <i>atomservice</i> . Element <i>prefix1:element1</i> in element <i>prefix2:element2</i> is not available at version <i>version</i> of the configuration file.
DFHW20137	<i>date time applid</i> Install for ATOMSERVICE <i>atomservice</i> has failed because {an ATOMSERVICE with the same name already exists   an authorization error occurred   of a problem with the ATOMSERVICE configuration file   the URIMAP could not be created   an unspecified error occurred}.
DFHW20161	<i>date time applid</i> Referenced resource <i>resource</i> has a type that is not supported for delivering feeds. ATOMSERVICE <i>atomservice</i> has been disabled.
DFHWU0002	<i>applid</i> A severe error (code <i>X'code'</i> ) has occurred in module <i>modname</i> .
DFHWU0004	<i>applid</i> A possible loop has been detected at offset <i>X'offset'</i> in module <i>modname</i> .
DFHWU2100	<i>applid</i> Unable to link to program DFHWURP.
DFH5208	<i>date time applid netname tranid</i> Resource defined but no value was specified for <i>xxxxxxxx</i> . Ensure that the resource is updated.
DFH5209	<i>date time applid netname tranid</i> No command encountered. The input file might be empty.

Table 38. New messages in CICS Transaction Server for z/OS, Version 4 Release 2 (continued)

Message number	Message text
EYUVC1019	Passwords and password phrases cannot be mixed. Try again.
EYUVC1020	The external security manager interface has not been initialized. Sign-on request failed.
EYUVC1021	The external security manager is currently not accepting sign-on requests. Try again later.
EYUVC1023	Incorrect password length. Sign-on is terminated.
EYUVC1024	Incorrect new password length. Sign-on is terminated.
EYUVC1025	Incorrect user name length. Sign-on is terminated.
EYUVC1026	Incorrect group name length.
EYUVC1027	Invalid group name specified
EYUWM0439	<i>date time applid</i> TRANGRP ( <i>trangrpid</i> ) in CICSplex ( <i>context</i> ) for Workload ( <i>workloadid</i> ) transition to <i>type: sysname</i> at <i>sysplex reason</i> .
EYUXL0119	Major Object loaded from <i>module</i>

## New messages in CICS Transaction Server for z/OS, Version 4 Release 1

Table 39. New messages in CICS Transaction Server for z/OS, Version 4 Release 1

Message number	Message text
DFHAM4936 E	<i>Applid</i> The installation of BUNDLE <i>Resourcename</i> failed because the manifest found in the bundle root directory was not valid.
DFHAM4937 E	<i>Applid</i> The installation of BUNDLE <i>Resourcename</i> failed because a manifest was not found in the bundle root directory.
DFHAM4938 W	<i>Applid</i> BUNDLE <i>Resourcename</i> has been installed as disabled because one or more of its associated resources failed to install.
DFHAM4939 E	<i>Applid</i> The installation of ATOMSERVICE <i>Resourcename</i> failed due to a configuration error.
DFHAM4940 E	<i>Applid</i> Install of MQCONN <i>Mqconn-name</i> failed because an MQCONN is already installed and is in use.
DFHAM4941 E	<i>Applid</i> The installation of {ATOMSERVICE} <i>Resourcename</i> failed because the { <i>configfile</i>   <i>Bindfile</i> } does not exist.
DFHAM4942 E	<i>Applid</i> The installation of {ATOMSERVICE} <i>Resourcename</i> failed because CICS does not have authority to access the { <i>configfile</i>   <i>Bindfile</i> }.
DFHAM4943 E	<i>Applid</i> The installation of {ATOMSERVICE} <i>Resourcename</i> failed because the associated { <i>configfile</i>   <i>Bindfile</i> } is invalid.
DFHAM4944 E	<i>Applid</i> JVMSERVER <i>Resourcename</i> has been installed with less threads than requested on its definition.
DFHAM4945 E	<i>Applid</i> JVMSERVER <i>Resourcename</i> has been installed as disabled with a threadlimit of 0.
DFHAM4946 E	<i>Applid</i> The installation of { <i>bundle</i> } <i>Resourcename</i> failed because CICS does not have authority to access the manifest found in the bundle root directory.
DFHAP0702	<i>Applid</i> An abend (code <i>Abcode</i> ) has occurred in exit program <i>Progrname</i> at exit point <i>Xxxxxxxx</i> because a backlevel XPI call has been made.
DFHAP0703	<i>Applid</i> An abend (code <i>Abcode</i> ) has occurred in exit program <i>Progrname</i> at exit point <i>Xxxxxxxx</i> because a backlevel XPI call has been made.
DFHAP0708	<i>Applid</i> An abend (code <i>Abcode</i> ) has occurred in task related user exit program <i>Progrname</i> because a backlevel XPI call has been made.
DFHAP1301	<i>Date time applid</i> Language Environment has detected a corruption of its control blocks. Transaction <i>Transaction</i> currently executing.

Table 39. New messages in CICS Transaction Server for z/OS, Version 4 Release 1 (continued)

Message number	Message text
DFHAP1600	<i>Date time applid</i> An attempt to start a JVM for the JVMSERVER resource <i>Jvmserver</i> has failed. Reason code {{JVMPROFILE_ERROR   OPEN_JVM_ERROR   JNI_CREATE_NOT_FOUND   SETUP_CLASS_NOT_FOUND   TERMINATION_CLASS_NOT_FOUND   CREATE_JVM_FAILED   CHANGE_DIRECTORY_CALL_FAILED   STDOUT/STDERR_ACCESS_FAILED   ERROR_LOCATING_MAIN_METHOD   ATTACH_JNI_THREAD_FAILED   SETUP_CLASS_TIMEDOUT   ENCLAVE_INIT_FAILED   ERROR_CODE_UNRECOGNIZED}. }.
DFHAP1601	<i>Date time applid</i> An exception has been thrown by the main method of the JVM belonging to the JVMSERVER resource <i>Jvmserver</i> .
DFHAP1602	<i>Date time applid</i> An error occurred while terminating the JVM belonging to the JVMSERVER resource <i>Jvmserver</i> . Reason code { <i>termination_class_not_found</i>   <i>Error_locating_main_method</i>   <i>Error_code_unrecognized</i>   <i>Termination_class_timed_out</i> }.
DFHAP1603	<i>Date time applid</i> An exception has been thrown by the main method of a termination class, which was running in the JVM belonging to the JVMSERVER resource <i>Jvmserver</i> .
DFHBR0509	<i>Date time applid</i> You are approaching or have reached the maximum number of times a Link3270 bridge routing region can be started.
DFHCA4800 I	<i>Date time applid</i> New group <i>Grpname</i> created.
DFHCA4801 I	<i>Date time applid</i> New list <i>Lstname</i> created.
DFHCA4802 E	<i>Date time applid</i> <i>Name</i> is an invalid name.
DFHCA4803 E	<i>Date time applid</i> Install failed because an existing definition for file <i>Filename</i> could not be deleted.
DFHCA4805 E	<i>Date time applid</i> Unable to perform operation: <i>Name</i> is locked to applid <i>Applid</i> , opid <i>Opid</i> to prevent updating.
DFHCA4806 E	<i>Date time applid</i> Group name <i>Grpname</i> exists as a list name.
DFHCA4808 E	<i>Date time applid</i> Object already exists in this group.
DFHCA4809 E	<i>Date time applid</i> Date/time fields do not match (object updated by another user).
DFHCA4810 E	<i>Date time applid</i> Object not found (deleted by another user).
DFHCA4811 E	<i>Date time applid</i> <i>Name1</i> does not contain <i>Name2</i> .
DFHCA4812 W	<i>Date time applid</i> Install of library <i>Libname</i> encountered a data set { <i>allocation</i>   <i>Concatenation</i>   <i>Open</i> } failure. The library is installed but disabled.
DFHCA4813 W	<i>Date time applid</i> Install of library <i>Libname</i> encountered an MVS abend. The library is installed but disabled.
DFHCA4814 E	<i>Date time applid</i> List name <i>Listname</i> exists as a group name.
DFHCA4815 E	<i>Date time applid</i> group <i>Grpname</i> not found in this list.
DFHCA4816 E	<i>Date time applid</i> unable to install group <i>Grpname</i> - group not found.
DFHCA4817 E	<i>Date time applid</i> install of library <i>Libname</i> failed with an MVS abend. The library is not installed.
DFHCA4819 E	<i>Date time applid</i> group already exists in this list.
DFHCA4820 S	<i>Date time applid</i> unable to perform request - CSD full.
DFHCA4823 S	<i>Date time applid</i> unable to perform request - DFHCSD not open.
DFHCA4824 S	<i>Date time applid</i> unable to perform request - insufficient function in file definition for DFHCSD.
DFHCA4825 S	<i>Date time applid</i> unable to perform request - file control has returned an INVREQ response.
DFHCA4828 E	<i>Date time applid</i> group <i>Grpname</i> not found.

Table 39. New messages in CICS Transaction Server for z/OS, Version 4 Release 1 (continued)

Message number	Message text
DFHCA4829 S	Date time applid storage violation. CSD primary control record not updated.
DFHCA4830 E	Date time applid Restype Resname already exists in the target group.
DFHCA4831 E	Date time applid the new name Name is longer than the four characters allowed for Restype names.
DFHCA4832 E	Date time applid unable to open TDQUEUE Tdqname because the dfhintra data set is not open.
DFHCA4833 E	Date time applid a security error has occurred while attempting to install TDQUEUE Tdqname. The definition has not been installed.
DFHCA4834 E	Date time applid install of {TDQUEUE   PROCESSTYPE   LIBRARY   URIMAP   ATOMSERVICE   JVMSEVER} Resourcename failed because the installed definition is not disabled.
DFHCA4836 E	Date time applid install of db2conn Db2conn-name failed because a db2conn is already installed and is in use.
DFHCA4837 E	Date time applid install of { DB2ENTRY   Db2tran }Name failed because a db2conn is not installed.
DFHCA4838 E	Date time applid install of DB2ENTRY Db2entry-name failed because an existing definition could not be deleted. The existing definition is not disabled.
DFHCA4839 E	Date time applid list Listname not found.
DFHCA4840 W	Date time applid group Grpname not appended - group already exists in target list.
DFHCA4841 E	Date time applid install failed because definition of Restype Resname is in use by task no. Taskno (transaction id. Tranid).
DFHCA4842 E	Date time applid install failed because Restype Resname is currently in use.
DFHCA4843 W	Date time applid Ttttttt Nnnnnnnnn is internally locked to opid Opid applid Applid.
DFHCA4850 E	Date time applid install of DB2TRAN Db2tran-name failed because DB2ENTRY Db2entry-name to which it refers has not been installed.
DFHCA4851 E	Date time applid install of { DB2ENTRY   Db2tran   Db2conn   Library   Atomservice }Name failed because of a security error.
DFHCA4852 W	Date time applid Restype name Resname begins with 'dfh'. Such names are reserved and may be redefined by CICS.
DFHCA4853 E	Date time applid install of DB2TRAN Db2tran-name failed because another DB2TRAN is installed with the same transid.
DFHCA4854 W	Date time applid the specified {group   List} contains Objtype objects but no Restype found.
DFHCA4857 W	Date time applid the specified {group   List} contains more than one Objtype.
DFHCA4858 S	Date time applid unable to perform request - DFHCSD not enabled.
DFHCA4859 S	Date time applid unable to perform request - the csdstrno operand in the system initialization table (sit) is too small.
DFHCA4860 W	Date time applid the specified list contains DB2ENTRY or DB2TRAN definitions before a DB2CONN definition.
DFHCA4863 I	Date time applid Name is now locked. No group or list of that name exists.
DFHCA4866 E	Date time applid unable to perform operation: Name is IBM protected.
DFHCA4867 E	Date time applid file name DFHCSD is reserved and must not be modified.
DFHCA4869 E	Date time applid single resource install of Restype Resname in group Grpname is not allowed.
DFHCA4871 W	Date time applid file Filename has been installed but set Filename failed.
DFHCA4872 S	Date time applid unable to connect to CICS catalog.



Table 39. New messages in CICS Transaction Server for z/OS, Version 4 Release 1 (continued)

Message number	Message text
DFHCA4873 S	Date time applid unable to disconnect the CICS catalog.
DFHCA4874 E	Date time applid install of {TSMODEL   Enqmodel} Rsrc-name1 failed because {prefix   Enqname} Attribute-name already exists in {TSMODEL   Enqmodel} Rsrc-name2.
DFHCA4875 E	Date time applid unable to perform operation: Name is currently being updated by applid Applid opid Opid - please retry later.
DFHCA4876 W	Date time applid partner Partnername specifies netname Netname which is not found in any connection definition that specifies access method = z/OS Communications Server.
DFHCA4877 W	Date time applid partner Partnername specifies a netname and profile for which there is no common implied sessions definition.
DFHCA4878 E	Date time applid install of {IPCONN} Resourcenname failed because one with this name is already installed and is in use.
DFHCA4879 W	Date time applid {group   List} Name has been partially installed.
DFHCA4880 S	Date time applid unable to perform operation - not allowed by file attributes for DFHCSD.
DFHCA4881 I	Date time applid group Name deleted.
DFHCA4883 I	Date time applid list Listname deleted.
DFHCA4884 S	Date time applid Restype name Resname is reserved by CICS.
DFHCA4885 E	Date time applid install of IPCONN Resourcenname failed. Duplicate applid Applid found.
DFHCA4887 I	Date time applid unrecognized resource type found in the CSD file and has been ignored.
DFHCA4888 I	Date time applid group Groupname removed from list Listname.
DFHCA4889 E	Date time applid install of {journalmodel   Tsmode   Tcpipservice   Corbaserver   IPCONN   Urimap} Resourcenname failed because Attribute Attname is invalid.
DFHCA4890 E	Date time applid install of TDQUEUE Tdqname failed because the type has not been specified.
DFHCA4891 W	Date time applid Restype name Resname begins with 'c'. Such names are reserved and may be redefined by CICS.
DFHCA4892 W	Date time applid install for group Grpname has completed with errors.
DFHCA4893 I	Date time applid install for group Grpname has completed successfully.
DFHCA4894 E	Date time applid install of {enqmodel} Rsrcname1 failed because installed {enqmodel} Rsrcname2 is not disabled.
DFHCA4895 E	Date time applid install of TSMODEL Resourcenname in group Groupname failed because ts was started using an assembled tst without the migrate option.
DFHCA4896 E	Date time applid install of TDQUEUE Tdqname failed because the queue is not closed.
DFHCA4897 W	Date time applid The definition of {TDQUEUE   Tcpipservice} Resourcenname specified {opentime=initial   Status=open} but the open failed.
DFHCA4898 E	Date time applid Installation of {TDQUEUE   Processtype   Library   Atomservice} Resourcenname failed because of insufficient storage.
DFHCA4899 E	Date time applid TDQUEUE Tdqname cannot be replaced because the existing definition is for a different queue type.
DFHCA4901 E	Date time applid Install of REQUESTMODEL Resourcenname1 failed because a duplicate pattern already exists in Resourcenname2.
DFHCA4902 E	Date time applid Install of {corbaserver   Requestmodel }Resourcenname failed because it is not a valid{ corbaserver   Requestmodel }for this level of CICS.
DFHCA4903 E	Date time applid Install for TCPIPService Tcpipservice has failed because the service is open.

Table 39. New messages in CICS Transaction Server for z/OS, Version 4 Release 1 (continued)

Message number	Message text
DFHCA4904 W	<i>Date time applid</i> Opening TCPIP SERVICE <i>Tcpipservice</i> has failed because port <i>Portno</i> is already in use.
DFHCA4905 E	<i>Date time applid</i> Install failed for <i>Resource</i> . Option <i>Opt</i> is not available on this system.
DFHCA4906 W	<i>Date time applid</i> Opening TCPIP SERVICE <i>Tcpipservice</i> has failed because port <i>Portno</i> is not authorized.
DFHCA4907 W	<i>Date time applid</i> Opening TCPIP SERVICE <i>Tcpipservice</i> has failed because the { <i>IP address</i>   <i>Host</i> } is not known.
DFHCA4908 E	<i>Date time applid</i> Install of DOCTEMPLATE <i>Doctemplate1</i> failed because <i>templatename(Template)</i> already exists in DOCTEMPLATE <i>Doctemplate2</i> .
DFHCA4909 E	<i>Date time applid</i> Install of DOCTEMPLATE <i>Doctemplate</i> failed. <i>Ddname(Ddname)</i> not found.
DFHCA4910 E	<i>Date time applid</i> Install of DOCTEMPLATE <i>Doctemplate</i> failed. Member( <i>Membername</i> ) not found in <i>Ddname</i> .
DFHCA4911 W	<i>Date time applid</i> Transaction <i>Tranid</i> installed but at least one of alias, taskreq or xtranid failed to be replaced because it exists as a primary transaction.
DFHCA4912 E	<i>Date time applid</i> Install of <i>Resource ResourceName</i> failed because <i>Attribute</i> is invalid for this release.
DFHCA4913 E	<i>date time applid</i> Install of { <i>IPCONN</i> } <i>resourcenam</i> e failed because a CONNECTION resource with this name and a different APPLID is already installed.
DFHCA4914 E	<i>date time applid</i> Install of <i>resourcetype resourcenam</i> e failed. The specified <i>targetresource</i> is unusable.
DFHCA4915 E	<i>date time applid</i> Install of <i>resourcetype resourcenam</i> e failed. Open for data set <i>dsname</i> has abended.
DFHCA4916 E	<i>date time applid</i> TCPIP SERVICE <i>tcpipservice</i> has not been opened because the MAXSOCKETS limit has been reached.
DFHCA4917 W	<i>Date time applid</i> { <i>corbaserver</i>   <i>Tcpipservice</i>   <i>IPCONN</i>   <i>Urimap</i> } <i>Resourcenam</i> e was installed with a reduced set of cipher codes.
DFHCA4918 E	<i>Date time applid</i> The installation of { <i>corbaserver</i>   <i>Tcpipservice</i>   <i>IPCONN</i>   <i>Urimap</i> } <i>Resourcenam</i> e has failed because its requested cipher list was rejected.
DFHCA4920 E	<i>Date time applid</i> The installation of { <i>corbaserver</i>   <i>Djar</i>   <i>Pipeline</i>   <i>Webservice</i>   <i>Library</i>   <i>Bundle</i> } <i>Resourcenam</i> e has failed because it is a duplicate of one which already exists.
DFHCA4921 E	<i>Date time applid</i> The installation of <i>corbaserver Cname</i> has failed because the specified { <i>corbaserver</i>   <i>State</i>   <i>Sessbeantime</i>   <i>Certificate</i>   <i>Host</i>   <i>Shelf</i>   <i>Jndiprefix</i> } is not valid.
DFHCA4922 E	<i>Date time applid</i> The installation of { <i>corbaserver</i>   <i>Djar</i> } <i>Resourcenam</i> e has failed because the ej resource resolution transaction, CEJR, could not attach.
DFHCA4923 E	<i>Date time applid</i> The installation of <i>DJAR Dname</i> has failed because the specified <i>corbaserver Cname</i> does not exist.
DFHCA4924 E	<i>Date time applid</i> The installation of <i>DJAR Dname</i> has failed because the specified { <i>corbaserver</i>   <i>State</i>   <i>Hfsfile</i>   <i>Djar</i> } is not valid.
DFHCA4925 E	<i>Date time applid</i> The installation of <i>corbaserver Cname</i> has failed because at least one of its associated <i>tcpipservices</i> has not been installed.
DFHCA4926 E	<i>Date time applid</i> The installation of <i>DJAR Dname</i> has failed because the specified <i>corbaserver Cname</i> is not in a valid state.
DFHCA4927 E	<i>Date time applid</i> The installation of { <i>corbaserver</i>   <i>Djar</i> } <i>Resourcenam</i> e has failed because its <i>hfsfile</i> is a duplicate of one which already exists.
DFHCA4928 E	<i>Date time applid</i> Install of { <i>TCPIP SERVICE</i>   <i>Corbaserver</i>   <i>IPCONN</i>   <i>Urimap</i> } <i>Resourcenam</i> e failed because the specified certificate is { <i>expired</i>   <i>Not yet current</i>   <i>Not owned by this CICS</i>   <i>Not trusted</i> }.

Table 39. New messages in CICS Transaction Server for z/OS, Version 4 Release 1 (continued)

Message number	Message text
DFHCA4929 E	<i>Date time applid</i> {URIMAP}(Resourcename) was not installed because of conflicting attributes.
DFHCA4930 E	<i>Date time applid</i> URIMAP(Urimap1) not installed because it maps the same URI as Urimap2.
DFHCA4931 E	<i>Date time applid</i> The installation of WEBSERVICE Resourcename failed because the associated {wsbind file   Pipeline} does not exist.
DFHCA4932 E	<i>Date time applid</i> The installation of {pipeline   Webservice} Resourcename failed because the {hfsfile   Pipeline} setup was not correct.
DFHCA4933 E	<i>Date time applid</i> The installation of pipeline Resourcename failed because the WSDIR file specified is not accessible.
DFHCA4934 E	<i>Date time applid</i> The installation of URIMAP Resourcename failed because hostcodepage Hcodepage is not valid in combination with character set Charset.
DFHCA4935 E	<i>Date time applid</i> install of {TCPIP SERVICE   Corbaserver   IPCONN   Urimap} Resourcename failed because the keyring has no default certificate.
DFHCA4936 E	<i>Date time applid</i> The installation of bundle Resourcename failed because the manifest found in the bundle root directory was not valid.
DFHCA4937 E	<i>Date time applid</i> The installation of bundle Resourcename failed because a manifest was not found in the bundle root directory.
DFHCA4938 W	<i>Date time applid</i> bundle Resourcename has been installed as disabled because one or more of its associated resources failed to install.
DFHCA4939 E	<i>Date time applid</i> The installation of ATOMSERVICE Resourcename failed due to a configuration error.
DFHCA4940 E	<i>Date time applid</i> install of MQCONN Mqconn-name failed because an MQCONN is already installed and is in use.
DFHCA4941 E	<i>Date time applid</i> The installation of {ATOMSERVICE} Resourcename failed because the {configfile   Bindfile} does not exist.
DFHCA4942 E	<i>Date time applid</i> The installation of {ATOMSERVICE} Resourcename failed because CICS does not have authority to access the {configfile   Bindfile}.
DFHCA4943 E	<i>Date time applid</i> The installation of {ATOMSERVICE} Resourcename failed because the associated {configfile   Bindfile} is invalid.
DFHCA4944 W	<i>Date time applid</i> JVMSERVER Resourcename has been installed with less threads than requested on its definition.
DFHCA4945 W	<i>Date time applid</i> JVMSERVER Resourcename has been installed as disabled with a THREADLIMIT of 0.
DFHCA4946 W	<i>Date time applid</i> The installation of {bundle} Resourcename failed because CICS does not have authority to access the manifest found in the bundle root directory.
DFHCA4999 E	<i>Date time applid</i> install of Resourcetype resources is not supported.
DFHCA5137 E	<i>Date time applid</i> Netname tranid group Grpname not found in list Listid
DFHCA5559 W	<i>Date time applid</i> host conflicts with ipaddress. Host takes precedence.
DFHCA5560 W	<i>Date time applid</i> port_attribute conflicts with port number found in host attribute.
DFHCC0105	<i>Applid</i> the {local   Global} catalog is incorrectly defined. Expected:keylen=Req_keylen, lrecl=Req_lrecl. Defined:keylen=Def_keylen, lrecl=Def_lrecl.
DFHCC0106	<i>Applid</i> insufficient MVS storage for {cc   Gc} domain anchor block. Bytes requested=Bytes.
DFHDB2212	The DB2 subsystem ID db2id specified for the CICS-DB2 attachment cannot be found. The attachment facility cannot start.



Table 39. New messages in CICS Transaction Server for z/OS, Version 4 Release 1 (continued)

Message number	Message text
DFHDS0007	<i>Applid</i> module <i>Module</i> has detected a {suspend resume area overflow   Architecture limit} (code <i>X'code'</i> ). CICS will be terminated.   .}
DFHDU0218	No PROBDISC parameters supplied to DFHDUMPX.
DFHEC0001	<i>Applid</i> an abend (code <i>Aaa/bbbb</i> ) has occurred at offset <i>X'offset'</i> in module <i>Modname</i> .
DFHEC0002	<i>Applid</i> a severe error (code <i>X'code'</i> ) has occurred in module <i>Modname</i> .
DFHEC0004	<i>Applid</i> a possible loop has been detected at offset <i>X'offset'</i> in module <i>Modname</i> .
DFHEC1000	<i>Date time applid</i> invalid parameter list passed to EC component module <i>Modname</i> .
DFHEC1001	<i>Date time applid</i> Event binding <i>Evbname</i> installed successfully.
DFHEC1002	<i>Date time applid</i> Event binding <i>Evbname</i> discarded successfully.
DFHEC1003	<i>Date time applid</i> The CICS event capture component failed to create the EVENTBINDING resource <i>Evbname</i> for reason <i>Reason</i> .
DFHEC1004	<i>Date time applid</i> event processing found invalid data address <i>X'address'</i> while capturing data for CAPTURESPEC <i>Csname</i> of EVENTBINDING <i>Evbname</i> in capture data item <i>Description</i> at offset <i>Offset</i> with length <i>Length</i> .
DFHEC1005	<i>Date time applid</i> event processing found invalid data address <i>X'address'</i> while filtering events for CAPTURESPEC <i>Csname</i> of EVENTBINDING <i>Evbname</i> in filter item <i>Description</i> at offset <i>Offset</i> with length <i>Length</i> .
DFHEC1006I	<i>Applid</i> event processing status is {started   draining   stopped}.
DFHEC1007	<i>Date time applid</i> event processing found invalid packed data <i>x'data'</i> while filtering events for CAPTURESPEC <i>Csname</i> of EVENTBINDING <i>Evbname</i> in filter item <i>Description</i> at offset <i>Offset</i> with length <i>Length</i> .
DFHEC1008	<i>Date time applid</i> event processing found invalid zoned data <i>X'data'</i> while filtering events for CAPTURESPEC <i>Csname</i> of EVENTBINDING <i>Evbname</i> in filter item <i>Description</i> at offset <i>Offset</i> with length <i>Length</i> .
DFHEC1009	<i>Date time applid</i> the CICS event capture component found an inconsistency in one or more values during install of EVENTBINDING <i>Evbname</i> for reason <i>Reason</i> .
DFHEC2100	<i>Applid</i> program DFHECRP cannot be found.
DFHEC3100	<i>Date time applid</i> an error (code <i>X'code'</i> ) has occurred during creation of capture specification <i>Cs_name</i> in event binding <i>Evb_name</i> .
DFHEC3101	<i>Date time applid</i> invalid or unsupported codepage ( <i>Codepage</i> ) found in capture specification <i>Cs_name</i> in event binding <i>Evb_name</i> .
DFHEC3102	<i>Date time applid</i> invalid API command ( <i>Command</i> ) specified in capture specification <i>Cs_name</i> in event binding <i>Evb_name</i> .
DFHEC3103	<i>Date time applid</i> invalid comparison operator ( <i>Code</i> ) specified in capture specification <i>Cs_name</i> in event binding <i>Evb_name</i> .
DFHEC3104	<i>Date time applid</i> {Pre_API   Post_API} event point command in capture specification <i>Cs_name</i> in event binding <i>Evb_name</i> is not supported.
DFHEC3105	<i>Date time applid</i> invalid data type ( <i>Datatype</i> ) was specified in capture specification <i>Cs_name</i> in event binding <i>Evb_name</i> .
DFHEC3106	<i>Date time applid</i> invalid capture data source ( <i>Source</i> ) in capture specification <i>Cs_name</i> in event binding <i>Evb_name</i> .
DFHEC3107	<i>Date time applid</i> invalid eibaid value ( <i>Aiddata</i> ) specified in context filter for capture specification <i>Cs_name</i> in event binding <i>Evb_name</i> .
DFHEC3108	<i>Date time applid</i> invalid keyword ( <i>Keyword</i> ) specified in event capture specification <i>Cs_name</i> in event binding <i>Evb_name</i> .

Table 39. New messages in CICS Transaction Server for z/OS, Version 4 Release 1 (continued)

Message number	Message text
DFHEC3110	<i>date time applid</i> Invalid filter length of 0 specified in event capture specification <i>Cs_name</i> in event binding <i>Evb_name</i> .
DFHEC4007 E	<i>Applid</i> start transid <i>Tranid</i> Failed with response code <i>Response</i> and reason code <i>Reason</i> .
DFHEC4008	<i>Date time applid tranid</i> EP Adapter failed to emit an event to queue <i>queueName</i> . WRITEQ TS returned with condition <i>resp</i> .
DFHEC4111	<i>Date time applid tranid</i> Call to WebSphere MQ function <i>Function</i> returned with reason code <i>Reason_code</i> . Transaction terminated.
DFHEC4112	<i>Applid</i> WebSphere MQ support for CICS event processing WebSphere MQ adapter is not available.
DFHEC4117	<i>Date time applid tranid</i> the event's size of <i>Buffer_length</i> bytes exceeds message queue's <i>QueueName</i> maximum message length of <i>Max_msg_length</i> bytes. Transaction terminated.
DFHEC4120	<i>date time applid tranid</i> The HTTP EP Adapter failed to emit event for capture specification <i>csname</i> in event binding <i>evbname</i> using URIMAP <i>urimap_name</i> . <i>function</i> returned with response code <i>resp</i> reason code <i>resp2</i> .
DFHEC4121	<i>date time applid tranid</i> The HTTP EP Adapter failed to emit an event for capture specification <i>csname</i> in event binding <i>evbname</i> using URIMAP <i>urimap_name</i> . Server responded with HTTP status code <i>http_status_code</i> .
DFHEC4122	<i>date time applid tranid</i> The HTTP EP Adapter failed to emit event for capture specification <i>csname</i> in event binding <i>evbname</i> using URIMAP <i>urimap_name</i> . <i>function</i> returned with response code <i>resp</i> reason code <i>resp2</i> .
DFHEC4123	<i>date time applid tranid</i> The HTTP EP Adapter failed to emit an event for capture specification <i>csname</i> in event binding <i>evbname</i> using URIMAP <i>urimap_name</i> . Server responded with HTTP status code <i>http_status_code</i> .
DFHEP0001	<i>Applid</i> An abend (code <i>Aaa/bbbb</i> ) has occurred at offset <i>X'offset'</i> in module <i>Modname</i> .
DFHEP0002	<i>Applid</i> A severe error (code <i>X'code'</i> ) has occurred in module <i>Modname</i> .
DFHEP0101I	<i>Applid</i> Event processing domain initialization has started.
DFHEP0102I	<i>Applid</i> Event processing domain initialization has ended.
DFHEP0113	CEPM is stopping event processing after a severe error.
DFHEP0114	<i>date time applid tranid</i> The EP adapter user ID of <i>adapter_userid</i> is revoked, not valid, or not defined. Event discarded.
DFHEP0115	<i>Applid</i> Event processing event dispatcher task limit reached.
DFHEP0116	<i>Applid</i> Event processing event dispatcher task limit relieved.
DFHEP0117	<i>date time applid tranid</i> The EP adapter transaction ID of <i>adapter_tranid</i> is disabled or undefined. Event discarded.
DFHEP0118	<i>Date time applid tranid</i> The EP adapter transaction ID of <i>Adapter_tranid</i> is remote. Transaction terminated.
DFHEP0119	<i>date time applid tranid</i> Event processing global event queue depth: <i>number_events_queued</i> High Water Mark: <i>events_queued_hwm</i> .
DFHEP0120	<i>date time applid tranid</i> The EPADAPTER transaction ID <i>adapter_tranid</i> is defined to start the wrong program for this type of adapter. An event from EVENTBINDING <i>evbname</i> has been discarded.
DFHEP0121	<i>date time applid</i> Synchronous event emission by EPADAPTER <i>epadapter</i> failed for an event from EVENTBINDING <i>evbname</i> . The UOW will be backed out.
DFHEP1000	<i>date time applid</i> Invalid parameter list passed to EP domain module <i>modname</i> .
DFHEP1001	<i>date time applid</i> EPADAPTER <i>adaptername</i> installed successfully.
DFHEP1002	<i>date time applid</i> EPADAPTER <i>adaptername</i> discarded successfully.

Table 39. New messages in CICS Transaction Server for z/OS, Version 4 Release 1 (continued)

Message number	Message text
DFHEP2001	<i>date time applid</i> The CICS event processing domain failed to create EPADAPTER resource adapter in BUNDLE bundle because the EP adapter, which is of type adapterType and emission mode emitmode, requires a program name.   , does not support transactional events.   , requires a transaction ID.   , is invalid or unrecognised.   , has an invalid or unsupported event format.   , has an unsupported combination of attributes.}
DFHEP2002	<i>date time applid</i> The CICS event processing domain failed to create the EPADAPTER resource adaptername in BUNDLE bundle because the {EP adapter name is invalid.   XML data for the EP adapter could not be parsed.   eventDispatcher is missing or invalid.   configuration data is too long.}
DFHEP2003	<i>date time applid</i> The CICS event processing domain failed to create the EPADAPTER resource adaptername in BUNDLE bundle because the {LOCALCCSID SIT parameter is not supported:   EP adapter schema level is not supported: }error_data.
DFHEP2005	<i>date time applid</i> The CICS event processing domain found an inconsistency in the advanced options during install of EPADAPTER adaptername with emission mode emitmode and type adapterType. The option option is ignored.
DFHEX0005	Jobname: Jobname, stepname: Stepname, procname Procname, sysid in smf: Sysid, applid: Applid, transid: Transid.
DFHFC0209	<i>applid</i> User exit XFCRLSCO is allowing non-RLS file filename to bypass the RLS coexistence checks.
DFHFC0210	<i>applid</i> User exit XFCRLSCO is allowing RLS file filename to bypass the RLS coexistence checks.
DFHFC6039	<i>Date time applid</i> CICS has been invoked by vsam rls to process a Reason of data set Dsname.
DFHII1039 E	<i>Date time applid</i> Failure establishing connection to host Host as unauthenticated connections are not supported. An attempt to establish a CSIV2 secure connection failed because: {CSIV2 security is not supported in the server   the server does not support the use of ssl/tls   the server does not support client certification   a required capability is not supported by the server   the server requires something not supported by CICS   the server does not support identity assertion   the server does not support principal assertion   the server does not support gssup exported names}.
DFHII1040 E	<i>Date time applid</i> A CSIV2 connection has been refused because: {it was not an establishcontext message   it contained authorization tokens   it used an unsupported identity type   the identity type was not recognized   it specified more than one authorization tokens   an authorization token was too long}.
DFHIS0100	<i>Applid</i> Unable to start is domain because transaction CISC cannot be attached.
DFHIS1032	<i>Date time applid</i> Unable to acquire IPCONN IPCONN. Applid Networkid.applid is the same as the local applid.
DFHIS1033	<i>Date time applid</i> BIS processing error (code X'errorcode') occurred during release of Sesstype IPIC session in IPCONN IPCONN.
DFHIS1034	<i>Date time applid</i> Conversation Convid no longer pending on IPCONN IPCONN.
DFHIS1035	<i>Date time applid</i> Unable to send a {start   cancel   transaction routing} request using IPCONN IPCONN. Partner region does not support this function over IPIC.
DFHIS1036	<i>Date time applid</i> Unable to process local queue for IPCONN IPCONN. IPCONN connected to system that does not support starts over IPIC.
DFHIS1037	<i>Date time applid</i> Log data sent on IPCONN IPCONN is: 'data'.
DFHIS1038 E	<i>Date time applid</i> Invalid host address ipaddr.
DFHIS1039	<i>Date time applid</i> IPIC secondary socket request for Networkid.Applid has failed because a matching IPCONN could not be found.
DFHIS1040	<i>Date time applid</i> Unable to schedule transaction CRSR for IPCONN ipconn.

Table 39. New messages in CICS Transaction Server for z/OS, Version 4 Release 1 (continued)

Message number	Message text
DFHIS1041	Date time applid Identity propagation error has occurred while using IPCONN <i>ipconn</i> and transaction ID <i>transid</i> .
DFHIS3040 E	date time applid Deletion of IPCONN <i>ccccccc</i> failed. Its AID-Chains are not empty.
DFHIS3041	date time applid <i>nnnn</i> AIDs { <i>canceled</i>   <i>force-canceled</i> } for IPCONN <i>conname</i> . <i>nnnn</i> AIDs remain.
DFHKE0106	Applid GETMAIN failed in module <i>Modname</i> , r15= <i>Mvscode</i> . CICS will terminate.
DFHKE0997	Applid DFHKESTX driven for cleanup on an essential TCB with completion code <i>Code</i> . Unable to recover.
DFHLD0731	Applid data set <i>Dsname</i> Could not be allocated for library <i>Libname</i> because CICS could not determine that the data set is valid for a dynamic library. Reason: { <i>locate error. Locate macro</i>   <i>Obtain error. Obtain macro</i>   <i>Not enough working storage. Loader svc</i>   <i>CICS internal error. Loader svc</i> }return code: <i>X'rc'</i>
DFHLD0732	Applid Data set <i>Dsname</i> Could not be allocated for library <i>Libname</i> because it is not valid for a dynamic library. Reason: { <i>not dasd volume</i>   <i>Not partitioned organization</i>   <i>Record format is not set to unspecified</i> }.
DFHLG0195	Log gap warning up to block id <i>X'data1'</i>
DFHLG0196	STCK of block after gap (Time format): <i>X'data1'</i>
DFHLG0197	The CICS LOGR subsystem has detected an error. This might be caused by incorrect JCL.
DFHME0141	Message <i>Msgno</i> not issued by <i>Module</i> because MVS WTOR short on storage.
DFHML0001	Applid an abend (code <i>Aaa/bbbb</i> ) has occurred at offset <i>X'offset'</i> in module <i>Modname</i> .
DFHML0002	Applid a severe error (code ) has occurred in module .
DFHML0100	Date time applid <i>tranid</i> Call to z/OS XML system services parser for function <i>Function</i> failed with return code <i>X'return_code'</i> and reason code <i>X'reason_code'</i> .
DFHML0500	Date time applid <i>Userid</i> <i>Tranid</i> XMLTRANSFORM <i>Xmltransform_name</i> for { <i>bundle</i>   <i>Atomservice</i> } <i>Owner_name</i> has been added.
DFHML0501	Date time applid <i>Userid</i> <i>Tranid</i> XMLTRANSFORM <i>Xmltransform_name</i> for { <i>bundle</i>   <i>Atomservice</i> } <i>Owner_name</i> has been deleted.
DFHML0502	Date time applid <i>Userid</i> <i>Tranid</i> XMLTRANSFORM <i>Xmltransform_name</i> for { <i>bundle</i>   <i>Atomservice</i> } <i>Owner_name</i> has been { <i>enabled</i>   <i>Disabled</i> }.
DFHML0503	Date time applid <i>Userid</i> <i>Tranid</i> XMLTRANSFORM <i>Xmltransform_name</i> for { <i>bundle</i>   <i>Atomservice</i> } <i>Owner_name</i> cannot be installed as a duplicate XMLTRANSFORM resource with the same name already exists.
DFHML0504	Date time applid <i>Userid</i> <i>Tranid</i> XMLTRANSFORM <i>Xmltransform_name</i> for { <i>bundle</i>   <i>Atomservice</i> } <i>Owner_name</i> cannot be { <i>enabled</i>   <i>Disabled</i>   <i>Discarded</i> } because it is in the { <i>enabling</i>   <i>Enabled</i>   <i>Disabling</i>   <i>Disabled</i>   <i>Discarding</i>   <i>Permanently disabled</i>   <i>Unknown</i> } state.
DFHML0505	Date time applid <i>Userid</i> <i>Tranid</i> XMLTRANSFORM <i>Xmltransform_name</i> for { <i>bundle</i>   <i>Atomservice</i> } <i>Owner_name</i> has an unsupported runtime level.
DFHML0506	Date time applid <i>Trannum</i> XMLTRANSFORM <i>Xmltransform_name</i> Cannot link to program <i>Program_name</i> because { <i>the program abended</i>   <i>There is a problem with the resource definition</i>   <i>The program cannot be loaded</i>   <i>An unspecified problem occurred</i> }.
DFHML0507	Date time applid <i>Trannum</i> Validation of XML data for XMLTRANSFORM <i>Xmltransform_name</i> failed. The validation process returned the following message: ' <i>Message</i> '.
DFHML0508	Date time applid <i>Trannum</i> Validation of XML data for XMLTRANSFORM <i>Xmltransform_name</i> was successful.

Table 39. New messages in CICS Transaction Server for z/OS, Version 4 Release 1 (continued)

Message number	Message text
DFHML0509	<i>Date time applid Userid Tranid XMLTRANSFORM xmltransform_name for {BUNDLE   ATOMSERVICE} Owner_name cannot be installed as one or more invalid characters exist in the resource name.</i>
DFHML0510	<i>date time applid userid tranid XMLTRANSFORM xmltransform_name for {BUNDLE   ATOMSERVICE} owner_name is incompatible with the LOCALCCSID.</i>
DFHMQ0209 E	<i>Date time applid Unable to inquire on MQCONN. Eibfn=X'eibfn' eibresp=Eibresp eibresp2=Eibresp2 eibrcoef=X'eibrcoef'.</i>
DFHMQ0210 E	<i>Date time applid Unable to inquire on MQINI. Eibfn=X'eibfn' eibresp=Eibresp eibresp2=Eibresp2 eibrcoef=X'eibrcoef'.</i>
DFHMQ0218 W	<i>Date time applid Obsolete INITPARM for program dfhmqprm detected. All dfhmqprm INITPARM values are ignored.</i>
DFHMQ0303 E	<i>Date time applid tranid module Modname could not be found.</i>
DFHMQ0317	<i>Date time applid CICS-MQ command is invalid. No MQCONN is installed.</i>
DFHMQ0320I	<i>Date time applid The CICS-MQ adapter cannot find mqname Id.</i>
DFHMQ0324 I	<i>Date time applid All queue managers in queue sharing group Qsg-name are inactive.</i>
DFHMQ0325 I	<i>Date time applid Call to CICS svc for CICS-MQ function failed.</i>
DFHMQ0792 I	<i>Date time applid tranid Trannum routemem=Routemem</i>
DFHMQ2064	<i>Date time applid Resynchronization outstanding for queue manager Qmgr1 after CICS-MQ group attach has connected to queue manager Qmgr2.</i>
DFHMQ2100	<i>Applid Program DFHMQRP cannot be found.</i>
DFHMQ2101	<i>Date time applid Terminal Userid tranid MQCONN Mqconn-name has been added.</i>
DFHMQ2102	<i>Date time applid Terminal Userid tranid MQCONN Mqconn-name has been replaced.</i>
DFHMQ2103	<i>Date time applid Terminal Userid tranid MQCONN Mqconn-name has been deleted.</i>
DFHMQ2107	<i>Date time applid Terminal Userid tranid MQINI Mqini-name has been added.</i>
DFHMQ2108	<i>Date time applid Terminal Userid tranid MQINI Mqini-name has been replaced.</i>
DFHMQ2109	<i>Date time applid Terminal Userid tranid MQINI Mqini-name has been deleted.</i>
DFHQA1947	<i>applid A PSDINT value greater than zero was specified with PSTYPE=NOPS. PSDINT has been reset to 0.</i>
DFHPI0116	<i>date time applid A one-way request has been received as a WebSphere MQ persistent message, but the provider pipeline has abended or backed out changes to recoverable resources. The BTS process Processname of processtype Processtype has completed with status abended and this process can be re-tried or used to provide information for reporting the failure.</i>
DFHPI0117	<i>date time applid BTS process Processname of processtype Processtype, which has completed with status abended, has been cancelled. A provider pipeline started with a persistent WebSphere MQ message has abended or backed out, but a response has been sent to the requester.</i>
DFHPI0118	<i>applid CICS has attempted to use BTS processes to support pipelines started with WebSphere MQ persistent messages. This attempt failed. CICS will continue, using channel based containers for the pipeline, but there is a risk of data loss in the event of a system failure. Ensure that BTS processtype, repository and local request queue are correctly defined and installed.</i>
DFHPI0119	<i>date time applid the XML toolkit could not be loaded. Some configurations of the CICS supplied WS-security handler are not usable.</i>
DFHPI0450	<i>date time applid tranid The CICS transport mechanism in the pipeline was unable to successfully handle the request because of an invalid URI.</i>



Table 39. New messages in CICS Transaction Server for z/OS, Version 4 Release 1 (continued)

Message number	Message text
DFHPI0451	<i>date time applid tranid</i> The CICS transport manager DFHPITS encountered an error while trying to link to program <i>Program_name</i> .
DFHPI0452	<i>date time applid tranid</i> The CICS transport manager encountered an error while trying to locate URIMAP with HOST=localhost and PATH= <i>urimap_path</i> .
DFHPI0453	<i>date time applid tranid</i> The CICS transport manager encountered an error while trying to use URIMAP <i>urimap_name</i> .
DFHPI0454	<i>date time applid tranid</i> The CICS transport manager encountered an error while trying to use provider pipeline <i>pipeline_name</i> .
DFHPI0455	<i>date time applid tranid</i> The CICS transport manager encountered an error while trying to use requester pipeline <i>pipeline_name</i> .
DFHPI0456	<i>date time applid tranid</i> The CICS transport manager encountered an error with the input data being greater than the maximum COMMAREA length.
DFHPI0457	<i>date time applid tranid</i> The CICS transport manager was unable to successfully handle the request because of the missing targetServiceUri parameter in the URI.
DFHPI0514	<i>Date time applid tranid</i> The CICS pipeline manager has failed to find the required credentials in a request. An element <i>Local_name</i> , in namespace: <i>Namespace</i> , was expected.
DFHPI0727	<i>date time applid userid</i> PIPELINE <i>pipeline</i> cannot be installed as it requires support for ICRX based identity tokens and these are not supported by the platform.
DFHPI0732	<i>Date time applid</i> A request to rollback unit of work - <i>X'uwid'</i> has been received from a remote WS-AT coordinating transaction.
DFHPI0733	<i>Date time applid</i> A transaction timed out while waiting for a prepare message from a remote WS-AT coordinator. The unit of work - <i>X'uwid'</i> will be rolled back.
DFHPI0801I E	<i>Date time applid</i> A one way message has been found in an atomic transaction message exchange for transaction <i>Tran</i> .
DFHPI0917 W	<i>date time applid userid</i> WEBSERVICE <i>webservice</i> might perform unpredictably as the PIPELINE <i>pipeline</i> is non-SOAP.
DFHPI0999	<i>Date time applid tranid</i> The CICS pipeline manager has encountered a problem with file DFHPIDIR: {the file was not found   The file key length was too small   The file record size was too small   The file is full   The file control record is full   File recovery mode was not backout   There was an internal error   File failed to open or connect}.
DFHPI1000	<i>Date time applid</i> The outbound router program, DFHPIRT, has detected an invalid URI in the DFHWS-STSACTION container. The URI was ' <i>Uri</i> '.
DFHPI1020E	<i>Date time applid tranid</i> The CICS handling program for the http://www.ibm.com/xmlns/prod/CICS/bundle/SCACOMPOSITE resource type failed to create resource <i>Resource_name</i> in the bundle resource <i>Bundle_name</i> because CICS failed to parse the SCDL resource definition <i>Scdl_path_name</i> specified in bundle root directory <i>Bundle_root</i> . {the SCDL is not valid.   Failed to convert the SCDL.}
DFHPI2000 E	<i>Date time applid tranid</i> The installation of SCACOMPOSITE <i>Resource_name</i> in the bundle resource <i>Bundle_name</i> did not complete successfully. {a WEBSERVICE <i>wsbind</i> file was not found.   A WEBSERVICE name was a duplicate.   A URIMAP has an invalid path.   A URIMAP has a duplicate path.   A binding combination was invalid.   A binding did not provide required values.   A service required for wiring was not found.   A reference required for wiring was not found.   A wire target was already wired.   A service or reference name was a duplicate.}
DFHPI2001 E	<i>Date time applid tranid</i> The installation of SCACOMPOSITE <i>Resource_name</i> in the bundle resource <i>Bundle_name</i> did not complete successfully. The bindfile could not be read. Bindfile: <i>Bindfile_name</i> ,binding: <i>Binding_name</i> .
DFHPI2002 E	<i>Date time applid tranid</i> The installation of SCACOMPOSITE <i>Resource_name</i> in the bundle resource <i>Bundle_name</i> did not complete successfully. A duplicate WEBSERVICE name was used in a binding. Webservice: <i>Webservice_name</i> ,binding: <i>Binding_name</i> .

Table 39. New messages in CICS Transaction Server for z/OS, Version 4 Release 1 (continued)

Message number	Message text
DFHPI2003 E	<i>Date time applid tranid</i> The installation of SCACOMPOSITE <i>Resource_name</i> in the bundle resource <i>Bundle_name</i> did not complete successfully. A duplicate URIMAP path was used in a binding. Path: <i>Path_name</i> ,binding: <i>Binding_name</i> .
DFHPI2004 E	<i>Date time applid tranid</i> The installation of SCACOMPOSITE <i>Resource_name</i> in the bundle resource <i>Bundle_name</i> did not complete successfully. A invalid URIMAP path was used in a binding. Path: <i>Path_name</i> ,binding: <i>Binding_name</i> .
DFHPI2005 E	<i>Date time applid tranid</i> The installation of SCACOMPOSITE <i>Resource_name</i> in the bundle resource <i>Bundle_name</i> did not complete successfully. A binding attempted to wire to a target with an incompatable binding type. Target: <i>Target</i> ,binding: <i>Binding_name</i> .
DFHPI2006 W	<i>Date time applid tranid</i> The installation of SCACOMPOSITE <i>Resource_name</i> in the bundle resource <i>Bundle_name</i> did not complete successfully. A wired binding did not provide a required value. Value type:{ <i>pipeline</i>   <i>Uri</i>   <i>Bindfile</i> } ,binding: <i>Binding_name</i> .
DFHPI2007 E	<i>Date time applid tranid</i> The installation of SCACOMPOSITE <i>Resource_name</i> in the bundle resource <i>Bundle_name</i> did not complete successfully. A wired binding targeted a service which could not be found. Target: <i>Target_name</i> ,binding <i>Binding_name</i> .
DFHPI2008 E	<i>Date time applid tranid</i> The installation of SCACOMPOSITE <i>Resource_name</i> in the bundle resource <i>Bundle_name</i> did not complete successfully. A wired binding targeted a reference which could not be found. Target: <i>Target_name</i> ,binding: <i>Binding_name</i> .
DFHPI2009 E	<i>Date time applid tranid</i> The installation of SCACOMPOSITE <i>Resource_name</i> in the bundle resource <i>Bundle_name</i> did not complete successfully. A wired binding targeted a service or reference which had already been wired. Target: <i>Target_name</i> ,binding: <i>Binding_name</i> .
DFHPI2011 E	<i>date time applid tranid</i> The installation of SCACOMPOSITE <i>resource_name</i> in the BUNDLE resource <i>bundle_name</i> did not complete successfully. No services or references could be found in the composite implementation <i>impl_comp</i> .
DFHPI2012 E	<i>date time applid tranid</i> The installation of SCACOMPOSITE <i>resource_name</i> in the BUNDLE resource <i>bundle_name</i> did not complete successfully. The prerequisite composite implementation <i>impl_comp</i> could not be found.
DFHPI2015 E	<i>Date time applid tranid</i> a attempt to directly invoke a service <i>Service_name</i> failed. { <i>the service is internal.</i>   <i>The service cannot be invoked directly.</i>   <i>The composite that defines the service is disabled.</i>   <i>The service uses the web services binding.</i> }
DFHPI2016 E	<i>date time applid tranid</i> The installation of SCACOMPOSITE <i>resource_name</i> in the BUNDLE resource <i>bundle_name</i> did not complete successfully. A Web service binding was used to wire an internal reference to a service. Binding: <i>binding_name</i> .
DFHPI2018 E	<i>date time applid tranid</i> The installation of SCACOMPOSITE <i>resource_name</i> in the BUNDLE resource <i>bundle_name</i> did not complete successfully. The resource name must be the same as the composite name. Composite name: <i>composite_name</i> .
DFHPI2019 E	<i>date time applid tranid</i> The installation of SCACOMPOSITE <i>resource_name</i> in the BUNDLE resource <i>bundle_name</i> did not complete successfully. The SCDL encoding is invalid.
DFHPI2020 E	<i>date time applid tranid</i> The installation of SCACOMPOSITE <i>resource_name</i> in the BUNDLE resource <i>bundle_name</i> did not complete successfully. The SCDL is invalid.
DFHPI2021 W	<i>date time applid tranid</i> The installation of SCACOMPOSITE <i>resource_name</i> in the BUNDLE resource <i>bundle_name</i> might not complete successfully. { <i>A composite name was not provided.</i>   <i>An internal reference name was not provided.</i>   <i>An internal reference target was not provided.</i>   <i>An internal service name was not provided.</i>   <i>An external reference name was was not provided.</i>   <i>An external reference promote was not provided.</i>   <i>An external reference target was not provided.</i>   <i>An external service name was not provided.</i>   <i>An external service promote was not provided.</i> }
DFHPI2022 W	<i>date time applid tranid</i> The SCACOMPOSITE <i>resource_name</i> in the BUNDLE resource <i>bundle_name</i> defined an unsupported attribute in the SCDL. Attribute:{ <i>policySets.</i>   <i>requires.</i>   <i>Composite</i>   <i>Service</i>   <i>Reference</i>   <i>Component</i>   <i>Implementation</i>   <i>Binding</i> }; <i>element_name</i> .

Table 39. New messages in CICS Transaction Server for z/OS, Version 4 Release 1 (continued)

Message number	Message text
DFHPI2023 E	<i>date time applid tranid</i> The installation of SCACOMPOSITE <i>resource_name</i> in the BUNDLE resource <i>bundle_name</i> did not complete successfully. The mapping modes of { <i>reference   service  element_name</i> and { <i>reference   service  element_name</i> must be identical.
DFHPI2024	<i>date time applid tranid</i> BUNDLE resource <i>bundle_name</i> cannot be enabled because one or more resources in the BUNDLE were not created successfully.
DFHPI2025 W	<i>date time applid tranid</i> An INVOKE SERVICE call failed because it used an unwired reference. Reference: <i>reference_name</i> , Scope: <i>scope_name</i> .
DFHPI2026 E	<i>date time applid tranid</i> The installation of SCACOMPOSITE <i>resource_name</i> in the BUNDLE resource <i>bundle_name</i> did not complete successfully. The prerequisite composite implementation <i>impl_comp</i> does not have any components defined.
DFHPI2027 E	<i>date time applid tranid</i> The installation of SCACOMPOSITE <i>resource_name</i> in the BUNDLE resource <i>bundle_name</i> did not complete successfully. The composite name is a duplicate of an existing composite.
DFHPI9033 E	Duplicate elements with the same name in the same scope are not supported. The duplicated name is <i>Name</i> .
DFHPI9034 W	Schema type <i>Type</i> is being restricted to a total of <i>Value</i> digits.
DFHPI9035 E	XML schema element cannot be found in document <i>Document</i> .
DFHPI9036 W	Abstract data types are not supported. Problems may be experienced with type <i>Type</i> in element <i>Element</i> .
DFHPI9037 E	XML schema model groups are not supported within <choice> structures. Problem found in type <i>Type</i> .
DFHPI9038 E	The number of options for an enumerated set of options exceeds the maximum supported value of 255.
DFHPI9039 E	Substitution groups within xsd:choice constructs are not supported. The substitution group name is <i>Name</i> .
DFHPI9664 E	The value specified for parameter <i>Parameter</i> is invalid. Valid values are: <i>Values</i> .
DFHPI9665 E	The WSDL binding for operation <i>Operation</i> specifies an invalid message. <i>Messagefound</i> was found, but <i>Messageexpected</i> was expected.
DFHPI9666 E	A complextype can not contain more than one 'any' type. Problem found in type: ' <i>Type</i> '.
DFHPI9667 E	The supplied WSDL contains an 'any' or 'anytype' element. This is only supported when 'pgmint' is set to 'channel'.
DFHPI9668 E	Invalid value specified for the XML-only parameter. Valid values are: true or false.
DFHPI9669 E	Global XML element <i>Element</i> not found.
DFHPI9670 E	No global XML elements or types have been processed.
DFHPI9671 E	Mismatch between WS-Addressing action and soap action for operation <i>Operation</i> .
DFHPI9672 E	Mismatch between WS-Addressing endpoint reference address and port address.
DFHPI9673 E	Mismatch between WS-Addressing endpoint reference address and endpoint address.
DFHPI9674 E	Non-abstract global XML type <i>Type</i> not found.
DFHPI9675 E	Multiple WS-Addressing endpoint references exist.
DFHPI9676 E	The supplied WSDL contains constructs that are only supported when 'PGMINT' is set to 'CHANNEL'.
DFHPI9677 E	Invalid WS-Addressing endpoint reference element <i>Element</i> .
DFHPI9679 E	Invalid WS-Addressing endpoint reference element, 'address' element not found.
DFHPI9680 W	The minimum-runtime-level is less than 3.0. The WS-Addressing content in the WSDL is ignored.



Table 39. New messages in CICS Transaction Server for z/OS, Version 4 Release 1 (continued)

Message number	Message text
DFHPI9681 E	Invalid value specified for the 'WSADDR-EPR-ANY' parameter. Valid values are: 'TRUE' or 'FALSE'.
DFHPI9682 W	Container names beginning 'DFH' should not be used in channel description documents. The problem is for container ' <i>containerName</i> '.
DFHPI9683 W	Bundle directory <i>Dirname</i> already exists and may contain files that are inconsistent with the new bundle manifest file.
DFHPI9684 W	The value of the XSDBIND parameter indicates a directory name of <i>Dirname</i> . This is ignored as the xsdbind file is being generated into a bundle.
DFHPI9800 E	The service registry client has not been initialized.
DFHPI9801 E	A document with a matching name, namespace and version already exists within the registry. The publish step was not run.
DFHPI9802 E	The setting of the registry endpoint was not successful.
DFHPI9803 W	Greater than 250 custom properties have been defined; the first 250 are used.
DFHPI9804 E	When retrieving a document from a registry a fault was returned with message <i>Faultmessage</i> .
DFHPI9805 E	An attempt to retrieve a document from a registry failed with reason <i>Failreason</i> .
DFHPI9806 E	The WSDL file was not found at the specified location.
DFHPI9807 E	The WSDL file can not be read in the CCSID specified.
DFHPI9808 E	The WSDL file could not be used due to an ioexception.
DFHPI9809 E	When querying a registry a fault was returned with message <i>Faultmessage</i> .
DFHPI9810 E	An attempt to query a registry failed with reason <i>Failreason</i> .
DFHPI9811 I	The document <i>Docname</i> has been found in the registry with unique identifier <i>Docuri</i> .
DFHPI9812 W	Multiple documents matching the query have been found. The first will be used.
DFHPI9813 E	When publishing to a registry a fault was returned with message <i>Faultmessage</i> .
DFHPI9814 E	An attempt to publish to a registry failed with reason <i>Failreason</i> .
DFHPI9815 I	Starting <i>Requesttype</i> Web service request.
DFHPI9816 I	Response received for <i>Requesttype</i> Web service request.
DFHPI9817 I	The WSRR-SERVER location is <i>Wsrrserver</i> .
DFHPI9818 I	Custom property set with name <i>Propertyname</i> and value <i>Propertyvalue</i> .
DFHPI9819 I	Starting write of file <i>Filename</i> .
DFHPI9820 E	An ioexception occurred when attempting to write file <i>Filename</i> .
DFHPI9821 E	No document matched name <i>Filename</i> , namespace <i>Xmlns</i> , and version <i>Version</i> .
DFHPI9822 E	The parameter <i>Parametername</i> has an invalid value of <i>Value</i> .
DFHPI9823 W	Publishing of WSDL 2.0 documents to WSRR is not supported. The document <i>Documentname</i> has not been published.
DFHRD0128 I	<i>date time applid terminal userid tranid</i> INSTALL BUNDLE( <i>bundle-name</i> )
DFHRD0129 I	<i>date time applid terminal userid tranid</i> INSTALL ATOMSERVICE( <i>atomservice-name</i> )
DFHRD0130 I	<i>date time applid terminal userid tranid</i> INSTALL MQCONN( <i>mqconn-name</i> )
DFHRD0131 I	<i>date time applid terminal userid tranid</i> INSTALL JVMSERVER( <i>jvmserver-name</i> )
DFHRL0001	<i>Applid</i> An abend (code <i>Aaa/bbbb</i> ) has occurred at offset <i>X'offset'</i> in module <i>Modname</i> .
DFHRL0002	<i>Applid</i> A severe error (code <i>X'code'</i> ) has occurred in module <i>Modname</i> .

Table 39. New messages in CICS Transaction Server for z/OS, Version 4 Release 1 (continued)

Message number	Message text
DFHRL0101 E	<i>date time applid tranid</i> The CICS resource life-cycle manager encountered an error while trying to link to program <i>program_name</i> . { <i>The program abended.</i>   <i>The program was not defined.</i>   <i>The program was not enabled.</i>   <i>The program was not loadable.</i>   <i>No further details are available.</i> }
DFHRL0102 E	<i>date time applid tranid</i> The CICS resource life-cycle manager failed to create the resource <i>resource_name</i> and returned with reason <i>reason</i> .
DFHRL0103 E	<i>date time applid tranid</i> The CICS resource life-cycle manager failed to create the BUNDLE resource <i>bundle_name</i> because the manifest <i>manifest_file</i> specified in the bundle root directory was not found.
DFHRL0104 E	<i>date time applid tranid</i> The CICS resource life-cycle manager failed to create the BUNDLE resource <i>bundle_name</i> because CICS is not authorized to read the resource <i>path_name</i> defined in the bundle manifest.
DFHRL0105 E	<i>date time applid tranid</i> The CICS resource life-cycle manager failed to create the BUNDLE resource <i>bundle_name</i> because the resource <i>path_name</i> defined in the bundle manifest was not found.
DFHRL0106 E	<i>date time applid tranid</i> The CICS resource life-cycle manager failed to create the BUNDLE resource <i>bundle_name</i> because CICS is not authorized to read the manifest <i>manifest_file</i> in the root directory of the bundle.
DFHRL0107 I	<i>date time applid userid</i> The CICS resource life-cycle manager has started to create the BUNDLE resource <i>bundle_name</i> .
DFHRL0108 I	<i>date time applid tranid</i> The CICS resource life-cycle manager is in the process of creating the BUNDLE resource <i>bundle_name</i> and the BUNDLE is in the <i>state</i> state.
DFHRL0109 I	<i>date time applid tranid</i> The CICS resource life-cycle manager has created the BUNDLE resource <i>bundle_name</i> and the BUNDLE is in the <i>state</i> state.
DFHRL0110 E	<i>date time applid tranid</i> The CICS resource life-cycle manager has failed to create the BUNDLE resource <i>bundle_name</i> .
DFHRL0111 E	<i>date time applid tranid</i> The CICS resource life-cycle manager failed to create the resource <i>resource_name</i> because the resource type <i>resource_type</i> has not been registered.
DFHRL0112 E	<i>date time applid tranid</i> The encoding of the manifest <i>manifest_name</i> in the root directory of the bundle <i>bundle_name</i> is not valid.
DFHRL0113 E	<i>date time applid tranid</i> The CICS resource life-cycle manager failed to create the BUNDLE resource <i>bundle_name</i> because CICS failed to parse the manifest <i>manifest_name</i> specified in the bundle root directory. { <i>The manifest is not valid.</i>   <i>Failed to convert the manifest.</i> }
DFHRL0114 W	<i>date time applid tranid</i> The CICS resource life-cycle manager detected a missing import for BUNDLE resource <i>resource_name</i> . Import name: <i>import_name</i> type: <i>import_type</i> .
DFHRL0115 W	<i>date time applid tranid</i> The attempt to { <i>enable</i>   <i>disable</i>   <i>discard</i> } the BUNDLE <i>bundle_name</i> failed because one or more of its defined resources are { <i>in an ENABLED</i>   <i>in an UNUSABLE</i>   <i>not in a DISABLED</i> } state.
DFHRL0116 E	<i>applid</i> The CICS resource life-cycle bundle class failed to re-create the BUNDLE resource <i>bundle_name</i> because the manifest <i>manifest_file</i> specified in the bundle was not found.
DFHRL0117 E	<i>applid</i> The CICS resource life-cycle bundle class failed to re-create the BUNDLE resource <i>bundle_name</i> because CICS is not authorized to read the manifest <i>manifest_file</i> .
DFHRL0118 E	<i>applid</i> The CICS resource life-cycle bundle class has failed to re-create the BUNDLE resource <i>bundle_name</i> .
DFHRL0119 E	<i>applid</i> The CICS resource life-cycle bundle class failed to re-create the BUNDLE resource <i>bundle_name</i> because of failed consistency checks with the manifest <i>manifest_file</i> .
DFHRL0120 W	<i>date time applid tranid</i> The import of resource <i>resource_name</i> of type <i>type_name</i> failed as the resource was not available in an enabled state.

Table 39. New messages in CICS Transaction Server for z/OS, Version 4 Release 1 (continued)

Message number	Message text
DFHRL0121 W	<i>date time applid tranid</i> The CICS resource life-cycle manager detected that a composite name was not provided in the BUNDLE resource <i>bundle_name</i> .
DFHRM0402	<i>date time applid</i> UOWID:X'luowid' found.
DFHRM0403	<i>date time applid</i> UOWID:X'luowid' recovered for resolution, current status:uowstatus, tasknum:tasknum, tranid:tranid, Net UOWID:networkuowid
DFHRM0404	<i>date time applid</i> UOWID:X'luowid' is resolved, status:uowstatus, tasknum:tasknum, tranid:tranid, Net UOWID:networkuowid
DFHRM0405	<i>date time applid</i> Keypoint recovered. All relevant UOWs have been identified. Scan continuing for full recovery.
DFHRS0001	<i>Applid</i> An abend (code <i>Aaa/bbbb</i> ) has occurred at offset X'offset' in module <i>Modname</i> .
DFHRS0002	<i>Applid</i> A severe error (code X'code') has occurred in module <i>Modname</i> .
DFHSJ0004	<i>applid</i> A possible loop has been detected at offset X'offset' in module <i>modname</i> .
DFHSJ0207	<i>date time applid</i> CICS is running Java version <i>version</i> .
DFHSJ0910	<i>date time applid userid</i> JVMSERVER <i>jvmserver</i> has been created.
DFHSJ0911	<i>date time applid userid</i> JVMSERVER <i>jvmserver</i> was not created because {there is insufficient storage.   there is a directory domain error.   a lock cannot be obtained.   there is a duplicate resource error.}
DFHSJ0912	<i>date time applid userid</i> JVMSERVER <i>jvmserver</i> was successfully discarded.
DFHSJ0913	<i>date time applid userid</i> JVMSERVER <i>jvmserver</i> is being discarded.
DFHSJ0914 E	<i>date time applid userid</i> JVMSERVER <i>jvmserver</i> is installed as DISABLED because {the JVM server was not found.   CICS is not authorized to read the JVM profile.   the CJSR transaction could not be attached.   there is insufficient storage available.   the activate mode failed.   the add of the TP tcb failed.   the change mode to the TP tcb failed.   the Language Environment Enclave was not created.   there was a runtime options failure.   there was a failure updating the JVMProfile table.   there were insufficient threads available.the CJSR transaction could not be attached.   the CJSR ThreadJoiner class could not be created.}
DFHSJ0915	<i>date time applid userid</i> JVMSERVER <i>jvmserver</i> is now enabled and is ready for use.
DFHSJ0916 W	<i>date time applid userid</i> the requested thread limit for JVMSERVER <i>jvmserver</i> exceeds the maximum available. The thread limit is set to the maximum available.
DFHSJ0917	<i>date time applid userid</i> JVMSERVER <i>jvmserver</i> is disabled.
DFHSJ0918	<i>date time applid userid</i> JVMSERVER <i>jvmserver</i> is being disabled.
DFHSJ1001	<i>date time applid userid</i> An attempt to attach a thread to JVMSERVER <i>jvmserver</i> has failed. Return code: <i>return_code</i> .
DFHSJ1002	<i>date time applid userid</i> The class <i>classname</i> that was specified to be run in JVMSERVER <i>jvmserver</i> cannot be found.
DFHSJ1003	<i>date time applid userid</i> An attempt to locate the <i>method_name</i> method in class <i>classname</i> has failed, for JVMSERVER <i>jvmserver</i> .
DFHSJ1004	<i>date time applid userid</i> An exception has been thrown by the <i>method_name</i> method of class <i>classname</i> running in JVMSERVER <i>jvmserver</i> .
DFHSJ1005	<i>date time applid userid</i> An attempt to detach a thread from JVMSERVER <i>jvmserver</i> has failed. Return code: <i>return_code</i> .

Table 39. New messages in CICS Transaction Server for z/OS, Version 4 Release 1 (continued)

Message number	Message text
DFHSJ1006	<i>date time applid userid</i> An attempt to attach to JVMSERVER <i>jvmserver</i> has failed because {the channel name used is invalid   the JVMSERVER name is missing   the JVMSERVER name is too long   the userclass name is missing   the user channel is invalid   the XML in the PIPELINE configuration file is invalid   the JVMSERVER does not exist   the JVMSERVER is not enabled   the wrapper class cannot be found   the transaction abended   the attach of the thread failed   the wrapper method was not found   the detach of the thread failed   the JVM threw an exception   the DFH-HANDLERPLIST container is missing   the thread was forced to terminate abnormally   the thread could not be created   the JVMSERVER failed to start the OSGi service}.
DFHSO0118	<i>applid</i> The GETHOSTBYADDR call to resolve IP address <i>IP_ADDRESS</i> to a host name took over 3 seconds to complete.
DFHSO0130	<i>DATE TIME APPLID</i> A TCP/IP accept call has failed. The TCPIPService <i>Tcpipservice</i> on port <i>Portnumber</i> at IP address <i>Ipaddress</i> will be closed. The values returned are <i>bpx_return_value</i> ( <i>Bpx_return_value</i> ), <i>bpx_return_code</i> ( <i>Bpx_return_code</i> ), and <i>bpx_reason_code</i> ( <i>Bpx_reason_code</i> ).
DFHSO0133	<i>date time applid</i> TCPIPService <i>tcpipservice</i> has been installed.
DFHSO0134A	<i>applid</i> TCPIPService <i>ttttttt</i> was not restored because its certificate is invalid.
DFHUS0100	<i>applid</i> CICS is unable to listen for ENF event 71. Changing a user's RACF attributes will only take effect after the USRDELAY timeout.
DFHWB0763	<i>date time applid tranid</i> The URIMAP associated with the HTTP request is disabled. Host IP address: <i>hostaddr</i> . Client IP address: <i>clientaddr</i> .
DFHWB0764	<i>date time applid tranid</i> An attempt was made to use URIMAP <i>urimap</i> which is disabled.
DFHWU0910	<i>applid</i> Instruction address <i>X'aaaaaaaa'</i> , offset <i>X'offset'</i> in CSECT <i>csect</i> .
DFHWU0911	<i>applid</i> EC Mode PSW at time of abend: <i>PSW1 PSW2 PSW3 PSW4</i>
DFHWU0912	<i>applid</i> Execution key: <i>key</i> , abend reason code <i>X'reason'</i> .
DFHWU0913	<i>applid</i> Execution mode: <i>mode</i> . BEAR: <i>X'bear'</i> .
DFHWU0914	<i>applid</i> Registers <i>R1-R2</i> : <i>REG1VAL REG2VAL</i>
DFHWU0915	<i>applid</i> Branch to low address; using <i>R14</i> for PSW.
DFHWU0916	<i>applid</i> Storage around PSW at time of abend
DFHWU0917	<i>applid offset location data1 data2 data3 data4</i>
DFHWU0918	<i>applid</i> Abend while dumping storage; PSW probably not valid.
DFHWU0919	<i>applid</i> Transaction: <i>tran</i> . Task: <i>task</i> .
DFHWU0920	<i>applid</i> Abend recovery completed successfully.
DFHWU4001	The URI that has been specified has exceeded the maximum allowable length of 256 bytes.
DFHWU4002	The body of the HTTP request was not specified.The body of the HTTP request was not specified.
DFHWU4003	An unknown query parameter was specified in the URI. name: <i>parmname</i> value: <i>parmvalue</i>
DFHWU4005	The result cache token was missing from the URI.
DFHWU4006	The resource name was missing from the URI.
DFHWU4007	The body of the HTTP request was not specified correctly.
DFHWU4008	An action was specified in the HTTP body that was not valid. ACTION value: <i>action</i>
DFHWU4009	The record index was specified for a non-cached result. RECORDINDEX value: <i>recordindex</i>
DFHWU4010	The record index specified in the URI was not valid. RECORDINDEX value: <i>recordindex</i>
DFHWU4011	The record count specified in the URI was not valid. RECORDCOUNT value: <i>recordcount</i>

Table 39. New messages in CICS Transaction Server for z/OS, Version 4 Release 1 (continued)

Message number	Message text
DFHWU4012	Extraneous data was detected at the end of the URI. EXTRADATA value: <i>data</i>
DFHWU4013	Multiple CRITERIA expressions were found in the URI.
DFHWU4014	Multiple PARAMETER expressions were found in the URI.
DFHWU4016	Multiple NODISCARD expressions were found in the URI.
DFHWU4017	NODISCARD is valid only for HTTP GET requests.
DFHWU4018	<i>applid</i> Abend while dumping storage; PSW probably not valid.
DFHWU4019	PARAMETER is not valid for HTTP POST requests.
DFHWU4020	Multiple SUMMONLY expressions were found in the URI.
DFHWU4021	CRITERIA is not valid for result cache operations. CRITERIA value: <i>criteria</i>
DFHWU4022	PARAMETER is not valid for result cache operations. PARAMETER value: <i>parameter</i>
DFHWU4025	A specified attribute was not valid for this resource.
DFHWU4026	The DEFVER attribute was not specified or was specified with a value of zero.
DFHWU4027	A value of a specified attribute was out-of-range or not valid.
DFHWU4029	The result cache token specified exceeded its maximum allowable length. CACHETOKEN value: <i>cachetoken</i>
DFHWU4030	The resource name was not specified in the URI.
DFHWU4031	Multiple ORDERBY expressions were found in the URI.
DFHWU4032	ORDERBY is valid only for HTTP GET requests.
DFHWU4300	The result cache token specified in the URI does not belong to the user who made the request.
DFHWU4301	It is not possible to run requests in this environment. This region is not configured correctly.
DFHWU4302	The requested record count will exceed the current default warning count limit. <i>current_record_count</i> value: <i>currcount</i> <i>default_warning_count</i> value: <i>warncount</i>
DFHWU4400	The resource specified in the URI could not be found.
DFHWU4401	The result cache record specified could not be found.
DFHWU4402	The result cache specified could not be found.
DFHWU4500	A method has been specified that is not valid for the URI sent to the CICS management client interface. METHOD value: <i>method</i>
DFHWU5000	There was insufficient GCDSA storage available to complete the request.
DFHWU5001	The CICS management client interface server has gone Short On Storage BELOW the bar.
DFHWU5002	An internal error has occurred in the CICS management client interface.
DFHW20001	APPLID AN ABEND (CODE AAA/BBBB) HAS OCCURRED AT OFFSET X'OFFSET' IN MODULE MODNAME.
DFHW20002	APPLID A SEVERE ERROR (CODE X'CODE') HAS OCCURRED IN MODULE MODNAME.
DFHW20004	APPLID A POSSIBLE LOOP HAS BEEN DETECTED AT OFFSET X'OFFSET' IN MODULE MODNAME.
DFHW20006	APPLID INSUFFICIENT STORAGE TO SATISFY GETMAIN(CODE X'CODE') IN MODULE MODNAME. MVS CODE MVSCODE.
DFHW20100I	APPLID WEB2.0 DOMAIN INITIALIZATION HAS STARTED.
DFHW20101I	APPLID WEB2.0 DOMAIN INITIALIZATION HAS ENDED.
DFHW20110	<i>date time applid userid</i> ATOMSERVICE <i>atomservice</i> has been created.



Table 39. New messages in CICS Transaction Server for z/OS, Version 4 Release 1 (continued)

Message number	Message text
DFHW20111	<i>date time applid userid</i> ATOMSERVICE <i>atomservice</i> was successfully discarded.
DFHW20120	<i>date time applid</i> Configuration file <i>filename</i> is being analyzed for ATOMSERVICE <i>atomservice</i> .
DFHW20121	<i>date time applid</i> Configuration file <i>filename</i> for ATOMSERVICE <i>atomservice</i> was not found.
DFHW20122	<i>date time applid</i> The XML in the configuration file for ATOMSERVICE <i>atomservice</i> is not well-formed. Response codes from the XML System Services parser are (X'return-code', X'reason-code').
DFHW20123	<i>date time applid</i> Configuration error for ATOMSERVICE <i>atomservice</i> . Namespace URI <i>ns-uri</i> is not recognized.
DFHW20124	<i>date time applid</i> Configuration error for ATOMSERVICE <i>atomservice</i> . XML element <i>element</i> is not recognized.
DFHW20125	<i>date time applid</i> Configuration error for ATOMSERVICE <i>atomservice</i> . The XML root element is not valid.
DFHW20126	<i>date time applid</i> Configuration error for ATOMSERVICE <i>atomservice</i> . Child element <i>prefix1:element1</i> is not valid within element <i>prefix2:element2</i> .
DFHW20127	<i>date time applid</i> Configuration error for ATOMSERVICE <i>atomservice</i> . Attribute <i>prefix1:attr1</i> is not valid on element <i>prefix2:element2</i> .
DFHW20128	<i>date time applid</i> Configuration error for ATOMSERVICE <i>atomservice</i> . Attribute <i>prefix1:attr1</i> on element <i>prefix2:element2</i> has incorrect value <i>attrval</i> .
DFHW20129	<i>date time applid</i> Configuration error for ATOMSERVICE <i>atomservice</i> . Required attribute <i>prefix1:attr1</i> was not found on element <i>prefix2:element2</i> .
DFHW20130	<i>date time applid</i> Configuration error for ATOMSERVICE <i>atomservice</i> . Required element <i>prefix1:element1</i> { with attributes <i>attrib-list</i> was not found within element <i>prefix2:element2</i> .
DFHW20131	<i>date time applid</i> Configuration error for ATOMSERVICE <i>atomservice</i> . Child element <i>prefix1:element1</i> occurs multiple times within element <i>prefix2:element2</i> .
DFHW20133	<i>date time applid</i> Configuration error for ATOMSERVICE <i>atomservice</i> . The value of the attribute <i>attr1</i> on element <i>prefix2:element2</i> does not match the value of the attribute <i>attr3</i> in the ATOMSERVICE definition.
DFHW20141	<i>date time applid</i> The bind file <i>filename</i> for ATOMSERVICE <i>atomservice</i> was not found.
DFHW20142	<i>date time applid</i> CICS is not authorized to access {CONFIGFILE   BINDFILE} <i>filename</i> for ATOMSERVICE <i>atomservice</i> .
DFHW20151	<i>date time applid</i> Service program <i>service-prog</i> terminated abnormally with abend code <i>abcode</i> processing <i>req-method</i> for ATOMSERVICE <i>atomserv</i> .
DFH5137 E	Group <i>Grpname</i> not found in list <i>listid</i>
DFH5297 E	<i>command</i> is no longer supported.
DFH5559 W	Host conflicts with <i>ipaddress</i> . Host takes precedence.
DFH5560 W	Command not executed. <i>Port_attribute</i> conflicts with port number found in host attribute.

---

## Chapter 48. Deleted abend codes

These abend codes are discontinued in CICS Transaction Server for z/OS, Version 5 Release 2.

### Deleted abend codes in CICS Transaction Server for z/OS, Version 5 Release 2

No abend codes were deleted in CICS Transaction Server for z/OS, Version 5 Release 2.

The following abend codes were deleted in earlier releases:

### Deleted abend codes in CICS Transaction Server for z/OS, Version 5 Release 1

Table 40. Deleted abend codes in CICS Transaction Server for z/OS, Version 5 Release 1

Abend code	Abend text
ABX9	A next BMS BRMQ vector in the input message passed to the formatter does not contain the mapname requested to answer a RECEIVE MAP request.
AECY	The task was purged before a request to the storage manager (SM) domain was able to complete successfully. The domain that first detected the purged condition will have provided an exception trace.
AECZ	An error (INVALID, DISASTER or unexpected EXCEPTION response) has occurred on a call to the storage manager (SM) domain. The domain that detected the original error will have provided an exception trace, a console message and, possibly, a system dump (depending on the options specified in the dump table).
AI11	An IIOP Request Receiver transaction (default CIRR) was started invalidly. This transaction can only be initiated internally by CICS.
AI12	The IIOP Request Receiver program DFHIIRR returned an exception which may have been caused by data received from the client.
AI13	An IIOP Request Receiver task has been purged.
AI14	The IIOP Request Receiver program DFHIIRR has returned a disaster response due to a call to another CICS program failing.
AI15	The IIOP Request Receiver stub program was invoked from the sockets domain. However the TCPIPSERVICE defined in RDO did not specify a PROTOCOL of IIOP.
AI1A	An error occurred in the IIOP Request Processor which prevented it from sending a reply to the Request Receiver.
AI1D	The IIOP Request Processor attempted to use a CorbaServer that has been disabled or failed to initialize.
AI1P	An EJB was running in an OTS transaction and the timeout for this transaction was exceeded.
AI1T	The IIOP Request Processor timed out waiting for a request from a Request Receiver. It received a timed out notification from the RZ domain in response to a listen on the RequestStream of which it is the target.
AJAA	The CREA/CREC transaction could not allocate the shared memory it required. The transaction will free all allocated memory and issue this abend.
AJAB	The CREA/CREC transaction could not free the shared memory it allocated.
AJAC	The CREA/CREC transaction browses the installed REQUESTMODELS. An attempt to start or continue the browse of the REQUESTMODELS failed with an unexpected return code.
AJAD	The CREA/CREC transaction received an unexpected return code from an EXEC CICS call and could not continue.

Table 40. Deleted abend codes in CICS Transaction Server for z/OS, Version 5 Release 1 (continued)

Abend code	Abend text
AJAE	The CREA/CREC transaction used the EXEC CICS SEND MAP call to display a BMS map. This call returned an expected return code.
AJAF	The CREA/CREC transaction used the EXEC CICS RECEIVE MAP call to receive data from a BMS map. This call returned an expected return code.
AJAG	The CREA/CREC transaction must be invoked using the transaction ID of 'CREA' or 'CREC'. You are not able to use another transaction ID to invoke DFHADDRM (the program invoked for the CREA/CREC transaction).
ASJC	The CICS_HOME directory is inaccessible, does not exist, or contains a version of CICS Java support which is not the same as this release of CICS.
ASJD	An attempt to load a DLL by SJ Domain has failed.
ASJE	An attempt to locate the Wrapper class has failed.
ASJF	An attempt to change the HFS working directory has failed.
ASJG	An attempt by SJ domain to fetch the user-replaceable module DFHJVMAT has failed.
ASJJ	The JAVA_HOME directory is inaccessible, does not exist, or contains a JVM which does not match the Java version requirements for this release of CICS.
ASJK	An attempt was made to attach transaction CJGC, but the transaction was not attached internally by CICS.
ASJL	An attempt was made to attach a transaction specifying DFHSJGC as the program to be given control, but the transaction id was not CJGC.
ASJM	An attempt was made to attach transaction CJPI, but the transaction was not attached internally by CICS. The CICS system transaction CJPI provides support for initializing new JVMs.It can only be attached internally by CICS.
ASJN	An attempt was made to attach a transaction specifying DFHSJPI as the program to be given control, but the transaction id was not CJPI. DFHSJPI is for use by CICS system transaction CJPI, which provides support for initializing new JVMs.
ASJR	An attempt was made to start a JVM in resettable mode by specifying [-]Xresettable=YES or REUSE=RESET.
ASJ1	CICS attempted to initialize the Java environment for a task by issuing a JNI_CreateJavaVM call to the Java Native Interface. The call was not successful.
ASJ3	The CICS JVM interface invoked the JVM to find the main method of the CICS Wrapper class used to set up the operating environment before executing the user Java class. The JVM failed to find the main method of the CICS Wrapper class.
ASJ4	The SJ domain failed to build the argument list required to invoke the CICS Wrapper class used to set up the operating environment before executing the user Java class. This is possibly due to lack of free storage.
ASJ5	The CICS JVM interface invoked the CICS Wrapper class used to set up the operating environment before executing the user Java class. The Wrapper returned an exception.
ASJ6	The SJ domain issued a call to the kernel to ensure that CICS's ESTAE is the current ESTAE. This is required before calling CICS services from a native C environment which is running with Language Environment's ESTAE in effect. The call failed.
ASJ8	The SJ domain issued a call to the kernel to ensure that CICS's ESTAE is not the current ESTAE. This is required before calling the JVM as Language Environment's ESTAE is required to be in effect inside the JVM. The call failed.
ASRK	The AP domain recovery stub, DFHSR1, has been invoked to deal with a program check, operating system abend, or another error within a transaction environment. However, DFHSR1 has been unable to call the system recovery program, DFHSRP, because register 12, which should be pointing to the task control area (TCA), is null. This indicates that the caller of DFHSR1, has not set the address of the TCA..

## Deleted abend codes in CICS Transaction Server for z/OS, Version 4 Release 2

No abend codes were deleted in this release.



## Deleted abend codes in CICS Transaction Server for z/OS, Version 4 Release 1

*Table 41. Deleted abend codes in CICS Transaction Server for z/OS, Version 4 Release 1*

Abend code	Abend text
AMQL	DFHMQCON issued a call to CICS enqueue domain to create an enqueue pool for use in later CICS-MQ adapter processing, but the call to enqueue domain failed.



---

## Chapter 49. New abend codes

These abend codes are new for CICS Transaction Server for z/OS, Version 5 Release 2.

### New abend codes in CICS Transaction Server for z/OS, Version 5 Release 2

Abend code	Abend text
<b>AFDO</b>	An attempt was made to attach a transaction specifying DFHFRCRN as the program to be given control, but the transaction was not internally attached by CICS. DFHFRCRN is for use by CICS system transaction CFCR. This transaction is used to disable a file defined in a CICS bundle.
<b>AFDP</b>	CICS failed to disable a file defined in a CICS bundle.
<b>AXSE</b>	The CICS security token service has been called without a channel.
<b>AXSF</b>	The CICS security token service encountered a severe error.
<b>AXSG</b>	The DFHSAML program is not running in CICS key.

### New abend codes in CICS Transaction Server for z/OS, Version 5 Release 1

Abend code	Abend text
<b>AALB</b>	An error (INVALID, DISASTER or unexpected EXCEPTION response) has occurred on a call to the CICS/MQ Connection Manager. The domain that detected the original error provides a trace entry and possibly a system dump (depending on the options specified in the dump table).
<b>AEE0</b>	An application that is executing in AMODE(64) called CICS using a stub program that does not support AMODE(64).
<b>AEE1</b>	AMODE(64) stub program not called in AMODE(64).
<b>AEE2</b>	The AMODE(64) initial command processor detected an error.
<b>AEE3</b>	AMODE(64) epilog DSA chain error.
<b>AEZZ</b>	INCOMPLETE condition not handled.
<b>AFDN</b>	A program has issued a file control request with an unrecognized request type.
<b>AFDL</b>	A file control update request was made but the task has already updated a file that uses a different replication log stream.
<b>AINT</b>	The indoubt testing tool issued a EXEC CICS ENABLE command to enable the indoubt testing tool task related user exit program DFHINTRU, and the command failed with a NOTAUTH response.
<b>AINU</b>	The indoubt testing tool issued a EXEC CICS ENABLE command to enable the indoubt testing tool task related user exit program DFHINTRU, and the command failed with an unexpected response.
<b>AIPS</b>	IP interconnectivity remote scheduler program DFHISRSP has been started invalidly, probably because a transaction id that refers to DFHISRSP, for example CISM, has been entered at a terminal. DFHISRSP must be started by CICS internal processes only.
<b>AIPT</b>	IP interconnectivity remote scheduler program DFHISRSP received an INVALID, DISASTER, or EXCEPTION response from its PROCESS_SCHEDULER call to the intersystems communication (IS) domain. The domain that detected the original error provides an exception trace, a console message and, possibly, a system dump.

Abend code	Abend text
<b>AIPU</b>	For CICS 4.1 and later, IPCONN names that are longer than four characters are not supported in transaction routing between CICS regions.
<b>AITO</b>	DFHISPHP and DFHISPRP invalidly started from a terminal.
<b>AMPB</b>	A task has exceeded a policy threshold and the action defined is to abend the task.
<b>APGD</b>	The AMODE of the application and the stub program do not match.
<b>APGE</b>	The AMODE of the application and the stub program do not match.
<b>AXFZ</b>	The monitoring domain module, DFHMNAD, has returned a condition not expected by DFHXFX.

## New abend codes in CICS Transaction Server for z/OS, Version 4 Release 2

Abend code	Abend text
<b>ABRP</b>	The bridge client is no longer available.
<b>ACSO</b>	An IPIC conversation failure occurred when an attach between CICS systems was issued.
<b>ADDK</b>	CICS failed to obtain or release a lock on either the Global Work Area (GWA) or the DBCTL Global Block (DGB) of the adapter.
<b>AECE</b>	An unexpected error occurred in the event processing deferred filtering task CEPF.
<b>AECM</b>	An attempt was made to attach a CICS event processing deferred filtering task CEPF, but the transaction was not attached internally by CICS.
<b>AITN</b>	An attempt to change the TCB DFHMIRS that was running on has failed.
<b>AJST</b>	Program DFHJSON was called using EXEC CICS LINK, but no channel was provided.
<b>ASJ7</b>	An error has caused the JVM server to receive a SIGABRT signal.
<b>ASJS</b>	A Java application running in a JVM server invoked the System.exit() method.

## New abend codes in CICS Transaction Server for z/OS, Version 4 Release 1

Table 42. New abend codes in CICS Transaction Server for z/OS, Version 4 Release 1

Abend code	Abend text
<b>AALA</b>	An error (INVALID, DISASTER, or unexpected EXCEPTION response) has occurred on a call to the Atomservice Manager. The domain that detected the original error provides a trace entry and possibly a system dump (depending on the options specified in the dump table).
<b>AALC</b>	An error (INVALID, DISASTER, or unexpected EXCEPTION response) has occurred on a call to the JVM server resource manager. The domain that detected the original error provides a trace entry and possibly a system dump (depending on the options specified in the dump table).
<b>AAM4</b>	An error (INVALID, DISASTER, or unexpected EXCEPTION response) has occurred on a call to the Resource Lifecycle Manager. The domain that detected the original error provides a trace entry and possibly a system dump (depending on the options specified in the dump table).
<b>ACRQ</b>	An attempt has been made to route unsupported function across an IPIC connection. If message DFHIS1035 is issued immediately before the ACRQ abend, the ACRQ abend is caused by an attempt to route to a backlevel release. If message DFHIS1035 is not issued, the ACRQ abend is caused by an attempt to route an APPC device.

Table 42. New abend codes in CICS Transaction Server for z/OS, Version 4 Release 1 (continued)

Abend code	Abend text
<b>AECA</b>	An attempt has been made to run one of the CICS internal EP adapter transactions, CEPQ or CEPT, as a user transaction.
<b>AECC</b>	An error occurred while emitting an event. This problem is likely to have been caused by an error in the specification of the event or in the configuration of the EP adapter.
<b>AECO</b>	An unexpected error occurred while emitting an event.
<b>AECY</b>	The task was purged before a request to the storage manager (SM) domain was able to complete successfully. The domain that first detected the purged condition will have provided an exception trace.
<b>AECZ</b>	An error (INVALID, DISASTER or unexpected EXCEPTION response) has occurred on a call to the storage manager (SM) domain. The domain that detected the original error will have provided an exception trace, a console message and, possibly, a system dump (depending on the options specified in the dump table).
<b>AEPD</b>	An unexpected error occurred while dispatching events.
<b>AEPM</b>	An attempt was made to attach a CICS EP dispatcher task, but the transaction was not attached internally by CICS.
<b>AEPO</b>	An unexpected error occurred in the EP dispatcher event queue server task.
<b>AFDK</b>	A file control update request was made against a NSR file while transaction isolation was active for the task. Using NSR files with transaction isolation active is not supported. The <b>TRANISO</b> system initialization parameter is YES and the transaction definition has ISOLATE set to YES.
<b>AIPM</b>	The transaction was connected to another transaction in another CICS system by means of an IPIC link. This other transaction has abnormally stopped.
<b>AIPN</b>	IP interconnectivity program DFHISLQP has been initiated incorrectly, probably by entering a transaction ID that refers to it, CISQ, at a terminal. This program must be initiated only by CICS internal processes.
<b>AIPO</b>	IP interconnectivity program DFHISLQP has been initiated with incorrect attach parameters by CICS internal processes. This initiation be the result of a configuration error or a storage overwrite.
<b>AIPP</b>	IP interconnectivity program DFHISLQP received an INVALID, DISASTER, or EXCEPTION response from a call to the intersystems communication (IS) domain to process requests that are locally queued for an IPCONN.
<b>AIPR</b>	IP interconnectivity program DFHISLQP received an PURGED response from a call to the intersystems communication (IS) domain to acquire or release an IPCONN.
<b>AKEJ</b>	A backlevel XPI call has been detected by the kernel (KE) domain.
<b>ALIL</b>	CICS has tried to change to an OPEN TCB on which to run the JAVA, XPLINK, or OPENAPI program, but the change mode was unsuccessful. CICS might be short-on-storage and have insufficient storage to allow creation of the new TCB.
<b>ASJO</b>	The JVM server resolution transaction CJSR, has encountered an internal error. The CICS system transaction CJSR provides support for initializing new JVM servers. If this fails, it is likely that there is an underlying error with the CICS system.
<b>AW2A</b>	The DFHW2A Web 2.0 alias program ran in a transaction that was not attached by CICS Web support. This is typically caused by attempting to issue the CW2A transaction directly from a terminal. This is not supported.

Table 42. New abend codes in CICS Transaction Server for z/OS, Version 4 Release 1 (continued)

Abend code	Abend text
<b>AW2B</b>	The CICS-supplied Atom service routines use the transaction work area to contain the responses that are returned to the Atom feed manager. The service routine has determined that the transaction work area is too small to contain the required responses.
<b>AXFN</b>	The user domain module, DFHUSAD, has returned a condition not expected by DFHFXF.
<b>AXFV</b>	The user domain module, DFHUSAD, has returned a condition not expected by DFHFXF.

---

## Part 6. Appendixes





---

## Notices

This information was developed for products and services offered in the U.S.A. IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to:

IBM Director of Licensing  
IBM Corporation  
North Castle Drive  
Armonk, NY 10504-1785  
U.S.A.

For license inquiries regarding double-byte (DBCS) information, contact the IBM Intellectual Property Department in your country or send inquiries, in writing, to:

Intellectual Property Licensing  
Legal and Intellectual Property Law  
IBM Japan, Ltd.  
19-21, Nihonbashi-Hakozakicho, Chuo-ku  
Tokyo 103-8510, Japan

**The following paragraph does not apply in the United Kingdom or any other country where such provisions are inconsistent with local law:**

INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore this statement may not apply to you.

This publication could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Licensees of this program who want to have information about it for the purpose of enabling: (i) the exchange of information between independently created programs and other programs (including this one) and (ii) the mutual use of the information which has been exchanged, should contact IBM United Kingdom Laboratories, MP151, Hursley Park, Winchester, Hampshire, England, SO21 2JN.

Such information may be available, subject to appropriate terms and conditions, including in some cases, payment of a fee.

The licensed program described in this document and all licensed material available for it are provided by IBM under terms of the IBM Customer Agreement, IBM International Programming License Agreement, or any equivalent agreement between us.

### **Privacy Policy Considerations**

IBM Software products, including software as a service solutions, ("Software Offerings") may use cookies or other technologies to collect product usage information, to help improve the end user experience, to tailor interactions with the end user or for other purposes. In many cases no personally identifiable information is collected by the Software Offerings. Some of our Software Offerings can help enable you to collect personally identifiable information. If this Software Offering uses cookies to collect personally identifiable information, specific information about this offering's use of cookies is set forth below.

#### **CICSplex SM Web User Interface :**

For the WUI main interface: Depending upon the configurations deployed, this Software Offering may use session and persistent cookies that collect each user's user name and other personally identifiable information for purposes of session management, authentication, enhanced user usability, or other usage tracking or functional purposes. These cookies cannot be disabled.

For the WUI Data Interface: Depending upon the configurations deployed, this Software Offering may use session cookies that collect each user's user name and other personally identifiable information for purposes of session management, authentication, or other usage tracking or functional purposes. These cookies cannot be disabled.

For the WUI Hello World page: Depending upon the configurations deployed, this Software Offering may use session cookies that collect no personally identifiable information. These cookies cannot be disabled.

For CICS Explorer: Depending upon the configurations deployed, this Software Offering may use session and persistent preferences that collect each user's user name and password, for purposes of session management, authentication, and single sign-on configuration. These preferences cannot be disabled, although storing a user's password on disk in encrypted form can only be enabled by the user's explicit action to check a check box during sign-on.

If the configurations deployed for this Software Offering provide you as customer the ability to collect personally identifiable information from end users via cookies and other technologies, you should seek your own legal advice about any laws applicable to such data collection, including any requirements for notice and consent.

For more information about the use of various technologies, including cookies, for these purposes, see IBM's Privacy Policy at <http://www.ibm.com/privacy> and IBM's Online Privacy Statement at <http://www.ibm.com/privacy/details> the section entitled "Cookies, Web Beacons and Other Technologies" and the "IBM Software Products and Software-as-a-Service Privacy Statement" at <http://www-01.ibm.com/software/info/product-privacy/>.

---

## Trademarks

IBM, the IBM logo, and [ibm.com](http://ibm.com)<sup>®</sup> are trademarks or registered trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the Web at Copyright and trademark information at [www.ibm.com/legal/copytrade.shtml](http://www.ibm.com/legal/copytrade.shtml).

Java and all Java-based trademarks and logos are trademarks or registered trademarks of Oracle and/or its affiliates.

UNIX is a registered trademark of The Open Group in the United States and other countries.



---

## Bibliography

---

### CICS books for CICS Transaction Server for z/OS

#### General

*CICS Transaction Server for z/OS Program Directory*, GI13-3326  
*CICS Transaction Server for z/OS What's New*, GC34-7302  
*CICS Transaction Server for z/OS Upgrading from CICS TS Version 3.1*, GC34-7296  
*CICS Transaction Server for z/OS Upgrading from CICS TS Version 3.2*, GC34-7297  
*CICS Transaction Server for z/OS Upgrading from CICS TS Version 4.1*, GC34-7298  
*CICS Transaction Server for z/OS Upgrading from CICS TS Version 4.2*, GC34-7299  
*CICS Transaction Server for z/OS Upgrading from CICS TS Version 5.1*, GC34-7300  
*CICS Transaction Server for z/OS Installation Guide*, GC34-7279

#### Access to CICS

*CICS Internet Guide*, SC34-7281  
*CICS Web Services Guide*, SC34-7301

#### Administration

*CICS System Definition Guide*, SC34-7293  
*CICS Customization Guide*, SC34-7269  
*CICS Resource Definition Guide*, SC34-7290  
*CICS Operations and Utilities Guide*, SC34-7285  
*CICS RACF Security Guide*, SC34-7288  
*CICS Supplied Transactions*, SC34-7292

#### Programming

*CICS Application Programming Guide*, SC34-7266  
*CICS Application Programming Reference*, SC34-7267  
*CICS System Programming Reference*, SC34-7294  
*CICS Front End Programming Interface User's Guide*, SC34-7277  
*CICS C++ OO Class Libraries*, SC34-7270  
*CICS Distributed Transaction Programming Guide*, SC34-7275  
*CICS Business Transaction Services*, SC34-7268  
*Java Applications in CICS*, SC34-7282

#### Diagnosis

*CICS Problem Determination Guide*, GC34-7287  
*CICS Performance Guide*, SC34-7286  
*CICS Messages and Codes Vol 1*, GC34-7283  
*CICS Messages and Codes Vol 2*, GC34-7284  
*CICS Diagnosis Reference*, GC34-7274  
*CICS Recovery and Restart Guide*, SC34-7289  
*CICS Data Areas*, GC34-7271  
*CICS Trace Entries*, SC34-7295  
*CICS Debugging Tools Interfaces Reference*, GC34-7273

#### Communication

*CICS Intercommunication Guide*, SC34-7280  
*CICS External Interfaces Guide*, SC34-7276

## Databases

*CICS DB2 Guide, SC34-7272*

*CICS IMS™ Database Control Guide, SC34-7278*

*CICS Shared Data Tables Guide, SC34-7291*

---

## CICSplex SM books for CICS Transaction Server for z/OS

### General

*CICSplex SM Concepts and Planning, SC34-7306*

*CICSplex SM Web User Interface Guide, SC34-7316*

### Administration and Management

*CICSplex SM Administration, SC34-7303*

*CICSplex SM Operations Views Reference, SC34-7312*

*CICSplex SM Monitor Views Reference, SC34-7311*

*CICSplex SM Managing Workloads, SC34-7309*

*CICSplex SM Managing Resource Usage, SC34-7308*

*CICSplex SM Managing Business Applications, SC34-7307*

### Programming

*CICSplex SM Application Programming Guide, SC34-7304*

*CICSplex SM Application Programming Reference, SC34-7305*

### Diagnosis

*CICSplex SM Resource Tables Reference Vol 1, SC34-7314*

*CICSplex SM Resource Tables Reference Vol 2, SC34-7315*

*CICSplex SM Messages and Codes, GC34-7310*

*CICSplex SM Problem Determination, GC34-7313*

---

## Other CICS publications

The following publications contain further information about CICS, but are not provided as part of CICS Transaction Server for z/OS, Version 5 Release 2.

*Designing and Programming CICS Applications, SR23-9692*

*CICS Application Migration Aid Guide, SC33-0768*

*CICS Family: API Structure, SC33-1007*

*CICS Family: Client/Server Programming, SC33-1435*

*CICS Family: Interproduct Communication, SC34-6853*

*CICS Family: Communicating from CICS on System/390, SC34-6854*

*CICS Transaction Gateway for z/OS Administration, SC34-5528*

*CICS Family: General Information, GC33-0155*

*CICS 4.1 Sample Applications Guide, SC33-1173*

*CICS/ESA 3.3 XRF Guide , SC33-0661*

---

## 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.





---

# Index

## Numerics

64-bit JVM 3

## A

abend codes, deleted 381

abend codes, new 385

ABSTIME 31

activation module 4

ACTTHRDTCBS

CEMT INQUIRE DISPATCHER 118

ACTTHRDTCBS option

INQUIRE DISPATCHER

command 89

additional data types 271

AFDK abend 213

Application Associated Data exit,  
new 141

APPLICATION option 18

CEMT INQUIRE URIMAP

command 106

EXTRACT STATISTICS command 54

INQUIRE URIMAP command 58

application programming interface

ASKTIME (changed) 23

ASSIGN (changed) 18

BIF DEEDIT (made threadsafe) 29

BIF DIGEST (made threadsafe) 29

CHANGE PASSWORD (made  
threadsafe) 29

changed commands 18, 20, 22, 23, 31

CONVERTTIME (changed) 23

DEFINE COUNTER (made

threadsafe) 29

DEFINE DCOUNT (made

threadsafe) 29

DELETE (made threadsafe) 29

DELETE COUNTER (made

threadsafe) 29

DELETE DCOUNT (made

threadsafe) 29

DELETEQ TD (made threadsafe) 29

DELETEQ TS (made threadsafe) 29

ENDBR (made threadsafe) 29

EXEC DLI (made threadsafe) 29

EXTRACT CERTIFICATE (made  
threadsafe) 29

EXTRACT TCPIP (made

threadsafe) 29

EXTRACT WEB(changed) 23

GET CONTAINER (changed) 18

GET COUNTER (made

threadsafe) 29

GET DCOUNT (made

threadsafe) 29

INVOKE WEBSERVICE (changed) 23

JCICS support 33

LINK (changed) 18

LOAD PROGRAM (changed) 18

made threadsafe 29

application programming interface

(continued)

new commands 27

PUT CONTAINER (changed) 18

QUERY COUNTER (made

threadsafe) 29

QUERY DCOUNT (made

threadsafe) 29

QUERY SECURITY (changed) 20, 22

QUERY SECURITY (made

threadsafe) 29

READ (made threadsafe) 29

READNEXT (made threadsafe) 29

READPREV (made threadsafe) 29

READQ TD (made threadsafe) 29

READQ TS (made threadsafe) 29

RESETBR (made threadsafe) 29

REWIND COUNTER (made

threadsafe) 29

REWIND DCOUNT (made

threadsafe) 29

REWRITE (made threadsafe) 29

SIGNOFF (made threadsafe) 29

SIGNON (changed) 20, 22

SIGNON (made threadsafe) 29

START (changed) 18

START CHANNEL (changed) 18

STARTBR (made threadsafe) 29

SYNCPPOINT (made threadsafe) 29

SYNCPPOINT ROLLBACK (made  
threadsafe) 29

UNLOCK (made threadsafe) 29

UPDATE COUNTER (made

threadsafe) 29

UPDATE DCOUNT (made

threadsafe) 29

VERIFY PASSWORD (changed) 18

VERIFY PASSWORD (made

threadsafe) 29

VERIFY PHRASE (changed) 18

WAIT JOURNALNAME (made

threadsafe) 29

WAIT JOURNALNUM (made

threadsafe) 29

WEB EXTRACT (changed) 23

WEB OPEN (changed) 23

WEB PARSE URL(changed) 23

WRITE (made threadsafe) 29

WRITE JOURNALNAME (made

threadsafe) 29

WRITE JOURNALNUM (made

threadsafe) 29

WRITEQ TD (made threadsafe) 29

WRITEQ TS (changed) 20, 22

WRITEQ TS (made threadsafe) 29

application programs

compiler support 211

applications

security 194

APPLID system initialization

parameter 6

APPLMAJORVER option

CEMT INQUIRE URIMAP

command 106

EXTRACT STATISTICS command 55

INQUIRE URIMAP command 59

APPLMICROVER option

CEMT INQUIRE URIMAP

command 107

EXTRACT STATISTICS command 55

INQUIRE URIMAP command 59

APPLMINORVER option

CEMT INQUIRE URIMAP

command 106

EXTRACT STATISTICS command 55

INQUIRE URIMAP command 59

ARCHIVEFILE

CEMT INQUIRE WEBSERVICE 113

ARCHIVEFILE option

INQUIRE WEBSERVICE

command 81

ASKTIME 31

ASKTIME command 23

ASRAPSW16 option

ASSIGN command 20

ASRAREGS64 option

ASSIGN command 20

ASSIGN command 18, 19

ATMINGRP, new BAS object 291

ATOM

CEMT INQUIRE URIMAP 123

Atom feed SupportPac CA8K 247

Atom feeds

events 271

ATOMDEF, new BAS object 290

ATOMSERVICE

CEMT INQUIRE URIMAP 122

ATOMSERVICE option

INQUIRE URIMAP command 94

ATOMSERVICE resource definition 42

AUTHENTICATE

CEMT INQUIRE URIMAP 122

AUTHENTICATE option

INQUIRE URIMAP command 93

auxiliary trace data sets 4

AVAILABLE

CEMT INQUIRE URIMAP 106

CEMT SET BUNDLE 107

AVAILSTATUS

CEMT INQUIRE BUNDLE 105

CEMT INQUIRE URIMAP 106

AVAILSTATUS option

INQUIRE URIMAP command 58

SET BUNDLE command 56, 60

## B

BASICAUTH

CEMT INQUIRE URIMAP 122

BIF DEEDIT command 29

BIF DIGEST command 29

BUNDDDEF, new BAS object 291

BUNDLE resource definition 42  
 BUNDLEID  
   CEMT INQUIRE BUNDLE 108  
 BUNDLEID option  
   INQUIRE BUNDLE command 63  
 BUNINGRP, new BAS object 291  
 Business Transaction Services (BTS)  
   upgrading 215

## C

CA8K SupportPac 247  
 CBSRVNRM 163  
 CDSASZE 204  
 CEHP 47  
 CEHS 47  
 CEMN, changes 131  
 CEMT  
   upgrading 103  
 CEMT commands 124  
   CEMT INQUIRE ATOMSERVICE  
     (changed) 111  
   CEMT INQUIRE EVENPROCESS  
     (changed) 111  
   CEMT INQUIRE EVENTBINDING  
     (changed) 111  
   CEMT INQUIRE IPCONN  
     (changed) 111  
   CEMT INQUIRE JVMSERVER  
     (changed) 111  
   CEMT INQUIRE PROGRAM  
     (changed) 111  
   CEMT INQUIRE TCIPSERVICE  
     (changed) 111  
   CEMT INQUIRE TSMODEL  
     (changed) 111  
   CEMT INQUIRE TSQUEUE /  
     TSQNAME (changed) 111  
   CEMT INQUIRE URIMAP  
     (changed) 111  
   CEMT INQUIRE WEBSERVICE  
     (changed) 111  
   DISCARD ATOMSERVICE (new) 124  
   DISCARD BUNDLE (new) 124  
   DISCARD IPCONN (new) 124  
   DISCARD JVMSERVER (new) 124  
   DISCARD LIBRARY (new) 124  
   DISCARD MQCONN (new) 124  
   INQUIRE ATOMSERVICE (new) 124  
   INQUIRE BUNDLE (new) 124  
   INQUIRE CLASSCACHE  
     (changed) 103  
   INQUIRE DISPATCHER  
     (changed) 103  
   INQUIRE EPADAPTER (new) 124  
   INQUIRE EPADAPTERSET  
     (new) 124  
   INQUIRE EVENTBINDING  
     (new) 124  
   INQUIRE EVENTPROCESS  
     (new) 124  
   INQUIRE IPCONN (changed) 117  
   INQUIRE IPCONN (new) 124  
   INQUIRE JVM (changed) 103  
   INQUIRE JVMSERVER (new) 124  
   INQUIRE LIBRARY (new) 124

CEMT commands (*continued*)  
   INQUIRE MONITOR (changed) 103,  
     117  
   INQUIRE MQCONN (new) 124  
   INQUIRE MQINI (new) 124  
   INQUIRE SYSTEM (changed) 117  
   INQUIRE TEMPSTORAGE  
     (new) 124  
   INQUIRE TSMODEL (changed) 103  
   INQUIRE TSQNAME (changed) 103  
   INQUIRE TSQUEUE (changed) 103  
   INQUIRE URIMAP (changed) 117  
   INQUIRE VTAM (changed) 117  
   INQUIRE WORKREQUEST  
     (changed) 117  
   INQUIRE XMLTRANSFORM  
     (new) 124  
   PERFORM JVMPOOL (new) 124  
   PERFORM STATISTICS  
     (changed) 103  
   SET ATOMSERVICE (new) 124  
   SET BUNDLE (new) 124  
   SET DISPATCHER (changed) 103  
   SET DOCTEMPLATE (new) 124  
   SET EPADAPTER (new) 124  
   SET EPADAPTERSET (new) 124  
   SET EVENTBINDING (new) 124  
   SET EVENTPROCESS (new) 124  
   SET IPCONN (new) 124  
   SET JVMPOOL (changed) 103  
   SET JVMSERVER (new) 124  
   SET MONITOR (changed) 117  
   SET MQCONN (new) 124  
   SET XMLTRANSFORM (new) 124  
 CEMT DISCARD ATOMSERVICE  
   command 124  
 CEMT DISCARD BUNDLE  
   command 124  
 CEMT DISCARD IPCONN  
   command 124  
 CEMT DISCARD JVMSERVER  
   command 124  
 CEMT DISCARD LIBRARY  
   command 124  
 CEMT DISCARD MQCONN  
   command 124  
 CEMT INQUIRE ATOMSERVICE 111  
 CEMT INQUIRE ATOMSERVICE  
   command 124  
 CEMT INQUIRE BUNDLE  
   command 108, 124  
 CEMT INQUIRE DISPATCHER  
   command 108  
 CEMT INQUIRE DSNAME  
   command 108  
 CEMT INQUIRE EPADAPTER  
   command 124  
 CEMT INQUIRE EPADAPTERSET  
   command 124  
 CEMT INQUIRE EVENTBINDING 111  
 CEMT INQUIRE EVENTBINDING  
   command 124  
 CEMT INQUIRE EVENTPROCESS 111  
 CEMT INQUIRE EVENTPROCESS  
   command 124  
 CEMT INQUIRE IPCONN 111

CEMT INQUIRE IPCONN  
   command 117, 124  
 CEMT INQUIRE JVMSERVER 111  
 CEMT INQUIRE JVMSERVER  
   (changed) 105, 108  
 CEMT INQUIRE JVMSERVER  
   command 124  
 CEMT INQUIRE LIBRARY  
   (changed) 105  
 CEMT INQUIRE LIBRARY  
   command 124  
 CEMT INQUIRE MONITOR  
   command 117  
 CEMT INQUIRE MQCONN  
   command 124  
 CEMT INQUIRE MQINI command 124  
 CEMT INQUIRE PROGRAM 111  
 CEMT INQUIRE SYSTEM  
   command 117  
 CEMT INQUIRE TCIPSERVICE 111  
 CEMT INQUIRE TEMPSTORAGE  
   command 124  
 CEMT INQUIRE TSMODEL  
   command 111  
 CEMT INQUIRE TSQUEUE / TSQNAME  
   command 111  
 CEMT INQUIRE URIMAP 105, 111  
 CEMT INQUIRE URIMAP  
   (changed) 105  
 CEMT INQUIRE URIMAP  
   command 117  
 CEMT INQUIRE VTAM command 117  
 CEMT INQUIRE WEBSERVICE  
   command 111  
 CEMT INQUIRE WORKREQUEST  
   command 117  
 CEMT INQUIRE XMLTRANSFORM  
   command 124  
 CEMT PERFORM DUMP 105  
 CEMT PERFORM JVMPOOL  
   command 124  
 CEMT PERFORM SNAP 105  
 CEMT SET ATOMSERVICE  
   command 124  
 CEMT SET BUNDLE command 124  
 CEMT SET DOCTEMPLATE  
   command 124  
 CEMT SET EPADAPTER command 124  
 CEMT SET EPADAPTERSET  
   command 124  
 CEMT SET EVENTBINDING  
   command 124  
 CEMT SET EVENTPROCESS  
   command 124  
 CEMT SET IPCONN command 124  
 CEMT SET JVMSERVER command 124  
 CEMT SET MONITOR command 117  
 CEMT SET MQCONN command 124  
 CEMT SET STATISTICS command 108  
 CEMT SET SYSTEM command 108  
 CEMT SET XMLTRANSFORM  
   command 124  
 CEMT, changes 103  
 CETR, changes 129  
 CHANGE PASSWORD command 29  
 changed CEMT commands 105, 108, 111,  
   114, 117

- changed CSD groups
    - DFHISC 47
    - DFHISCIP 47
    - DFHPGAIP 46
  - changed global user exit programs 138, 139, 140
    - XRSINDI 137
  - changed messages 323
  - changed system initialization parameters 6
  - changes
    - affecting the SPI 49
    - to user-replaceable programs 152
  - CICS Explorer
    - upgrading 209
  - CICS management client interface (CMCI)
    - upgrading 127
  - CICS web support
    - upgrading 245
  - CICS\_HOME system initialization parameter 11
  - CICS-MQ transaction (CKQC) 129
  - CICS-supplied transactions
    - CEMT INQUIRE BUNDLE (changed) 108
    - CEMT INQUIRE DISPATCHER (changed) 108
    - CEMT INQUIRE DSNNAME (changed) 108
    - CEMT INQUIRE JVMSERVER (changed) 105, 108
    - CEMT INQUIRE LIBRARY (changed) 105
    - CEMT INQUIRE URIMAP (changed) 105
    - CEMT SET STATISTICS (changed) 108
    - CEMT SET SYSTEM (changed) 108
    - CEPD 193
    - CEPF 193
    - CEPH 193
    - CEPM 193
    - CEPQ 193
    - CEPT 193
    - CESL 193
    - CFCR 193
    - changed CEMT commands 105, 108, 111, 117
    - changed CEMT commands, resource signature 114
    - changes to CEMN 131
    - changes to CEMT 103
    - changes to CETR 129
    - changes to CRTE 131
    - changes to CSFE 131
    - CICS-supplied transactions
      - DFH\$CAT1 CLIST 193
    - CIS4 193
    - CISB 193
    - CISC 193
    - CISD 193
    - CISE 193
    - CISM 193
    - CISQ 193
    - CISR 193
    - CISS 193
    - CIST 193
  - CICS-supplied transactions (*continued*)
    - CISU 193
    - CISX 193
    - CJGC 193
    - CJPI 193
    - CJSR 193
    - CRLR 193
    - new CEMT commands 124
    - new RACF category 1 transactions 193
    - obsolete CEMT command options 103
    - upgrading 103, 129
  - CICS-WebSphere MQ adapter 237, 239, 240
  - CICS-WebSphere MQ connection 237, 239, 240
  - CICSplex SM
    - connecting to previous releases 295
    - new BAS definition objects 290
  - CICSplex SM data repository 276
  - CICSplex SM transactions 293
    - upgrading 293
  - CIRP transaction 129
  - CIRR transaction 129
  - CISC 47
  - CISS 47
  - CKQC transaction 129
  - class paths for JVM 223
  - CLIENTADDR option
    - EXTRACT TCPIP command 24
  - CLINTCP system initialization parameter 11
  - CLNTADDR6NU option
    - EXTRACT TCPIP command 24
  - CLNTIPFAMILY option
    - EXTRACT TCPIP command 24
  - cloud
    - security 191, 193, 194
  - compiler support 211
  - COMPRESS
    - CEMT INQUIRE MONITOR 120
  - COMPRESSST
    - CEMT INQUIRE MONITOR 120
  - COMPRESSST option
    - INQUIRE MONITOR command 91
  - CONCURRENTST option
    - INQUIRE EXITPROGRAM command 64
  - CONFDATA system initialization parameter 6
  - connection pooling 272
    - upgrading 245
  - control tables
    - upgrading 47
  - CONVERTTIME 31
  - CONVERTTIME command 23
  - CPMI 47
  - CREA transaction 129
  - CREATE FILE command 61, 68
  - CREATE LSRPOOL command 61, 68
  - CREATE MQCONN command 61, 68
  - CREATE PROGRAM command 52
  - CREATE TCIPSERVICE command 61, 68, 85
  - CREATE TSMODEL command 61, 68
  - CREC transaction 129
- CRLSERVER system initialization parameter 11
- CRTE, changes 131
- CSD
  - sharing between releases 205
- CSD, upgrading 202
  - SCAN function 203
- CSDLSRNO system initialization parameter 6
- CSFE, changes 131
- CSHR 47
- CSM1 47
- CSM2 47
- CSM3 47
- CSM5 47
- CSMI 47
- CURRENTHEAP
  - CEMT INQUIRE JVMSERVER 112
- CURRPGM option
  - INQUIRE CAPTURESPEC command 73
- CURRPGMOP option
  - INQUIRE CAPTURESPEC command 73
- CURRTRANID option
  - INQUIRE CAPTURESPEC command 74
- CURRTRANIDOP option
  - INQUIRE CAPTURESPEC command 74
- CURRUSERID option
  - INQUIRE CAPTURESPEC command 75
- CURRUSERIDOP option
  - INQUIRE CAPTURESPEC command 75
- CVDA values 19
  - ALLVALUES
    - INQUIRE CAPTURESPEC command 74, 75, 76
  - ATOM
    - INQUIRE URIMAP command 94
  - AVAILABLE
    - INQUIRE URIMAP command 58
  - BASIC
    - INQUIRE URIMAP command 94
  - CONTAINER
    - INQUIRE CAPTURESPEC command 77
  - CURRENTPGM
    - INQUIRE CAPTURESPEC command 77
  - DOESNOTEQUAL
    - INQUIRE CAPTURESPEC command 74, 75, 76
  - DOESNOTSTART
    - INQUIRE CAPTURESPEC command 74, 75, 76
  - EPADAPTER
    - INQUIRE EVENTBINDING command 64
  - EPADAPTERSET
    - INQUIRE EVENTBINDING command 64
  - EQUALS
    - INQUIRE CAPTURESPEC command 74, 75, 76

## CVDA values (continued)

EVENT  
     INQUIRE CAPTURESPEC  
         command 77

FILE  
     INQUIRE CAPTURESPEC  
         command 77

GREATERTHAN  
     INQUIRE CAPTURESPEC  
         command 74, 75, 76

HOSTNAME  
     WEB EXTRACT or EXTRACT  
         WEB command 26  
     WEB PARSE URL command 27

IPV4  
     EXTRACT TCPIP command 24  
     WEB EXTRACT or EXTRACT  
         WEB command 26  
     WEB PARSE URL command 27

IPV6  
     EXTRACT TCPIP command 24  
     WEB EXTRACT or EXTRACT  
         WEB command 26  
     WEB PARSE URL command 27

ISNOTGREATER  
     INQUIRE CAPTURESPEC  
         command 74, 75, 76

ISNOTLESS  
     INQUIRE CAPTURESPEC  
         command 74, 75, 77

JVMSEVER  
     INQUIRE URIMAP command 67

LESSTHAN  
     INQUIRE CAPTURESPEC  
         command 74, 75, 76, 77

MAP  
     INQUIRE CAPTURESPEC  
         command 77

MESSAGEID  
     INQUIRE CAPTURESPEC  
         command 64, 77

NOAUTHENTIC  
     INQUIRE URIMAP command 94

NONE  
     INQUIRE CAPTURESPEC  
         command 77  
     INQUIRE URIMAP command 58

NOTAPPLIC  
     EXTRACT TCPIP command 24  
     WEB EXTRACT or EXTRACT  
         WEB command 26

PROGRAM  
     INQUIRE CAPTURESPEC  
         command 77

RFC3339  
     FORMATTIME command 25

SERVICE  
     INQUIRE CAPTURESPEC  
         command 77

STARTSWITH  
     INQUIRE CAPTURESPEC  
         command 74, 75, 76, 77

TDQUEUE  
     INQUIRE CAPTURESPEC  
         command 77

## CVDA values (continued)

TRANSACTION  
     INQUIRE CAPTURESPEC  
         command 77

TSQUEUE  
     INQUIRE CAPTURESPEC  
         command 77

CVMI 47

**D**

data conversion  
     upgrading 201

data sets  
     auxiliary trace 4  
     start up 4

data types, additional 271

DB2  
     attachment facility 243  
     security 197  
     upgrading 243

DB2WAIT 163

DEFINE COUNTER command 29

DEFINE DOUNTER command 29

DELETE command 29

DELETE COUNTER command 29

DELETE DOUNTER command 29

deleted abend codes 381

deleted messages 319

DELETEQ TD command 29

DELETEQ TS command 29

DFH\$CCI (obsolete CSD group) 37

DFH\$EJB (obsolete CSD group) 37

DFH\$EJB2 (obsolete CSD group) 37

DFH\$IIOP (obsolete CSD group) 37

DFH\$JAVA (obsolete CSD group) 37

DFH\$JVM (obsolete CSD group) 37

DFHADET (obsolete CSD group) 37

DFHADST (obsolete CSD group) 37

DFHCNV 245  
     upgrading 47

DFHCOMPB (obsolete CSD group) 37

DFHCOMPC, compatibility group 205

DFHCOMPD, compatibility group 205

DFHCOMPE, compatibility group 205

DFHCOMPF 47

DFHCOMPF, compatibility group 205

DFHCOMPG, compatibility group 205

DFHCSDUP  
     upgrading 159

DFHCSVCupgrading 221

DFHDCT, obsolete 47

DFHEJBU (obsolete CSD group) 37

DFHEP, CSD group 43

DFHFCRL, CSD group 43

DFHIIOP (obsolete CSD group) 37

DFHIRPupgrading 221

DFHISC 47

DFHISCIP 47

DFHJVM DD card 223

DFHJVMCD 223

DFHJVMRO 223

DFHLRQ data set 215  
     migrating 215

DFHMCT monitoring control table  
     upgrading 47

DFHPDxxx  
     upgrading 159

DFHPGADX 46

DFHPGAHX 46

DFHPGAIP 46

DFHPGALX 46

DFHPGAOX 46

DFHPIVAL, CSD group 43

DFHRL, CSD group 44

DFHRS, CSD group 44

DFHSIT, default system initialization  
     table 5

DFHSJJ8O 223

DFHSTUP  
     upgrading 159

DFHTUxxx  
     upgrading 159

DFHUEPAR  
     upgrading 136

DFHWBCLI 245

DFHWBEP  
     upgrading 245

DFHWEB2, CSD group 44

DFHWU, CSD group 44

dfjjvmcd.props 223

DPLLIMIT  
     CEMT INQUIRE MONITOR 120  
     CEMT SET MONITOR 124

DPLLIMIT option  
     INQUIRE MONITOR command 91  
     SET MONITOR command 96

DSAs  
     setting the size of 204

DSKJRNL 279

## E

ECDSASZE 204

EDSALIM system initialization  
     parameter 6

EJBCRECT 163

EJBMTHCT 163

EJBREMCCT 163

EJBROLEPRFX system initialization  
     parameter 5

EJBSACCT 163

EJBSPACT 163

EJBTOTCT 163

ENABLE PROGRAM command 52

ENCRYPTION system initialization  
     parameter 6

ENDBR command 29

enterprise beans  
     upgrading 223

EPADAPTERRES option  
     INQUIRE EVENTBINDING  
         command 64

ERDSASZE 204

ERRORMSG option  
     ASSIGN command 18

ERRORMSGELN option  
     ASSIGN command 18

ESDSASZE 204

ETDSASIZE  
     CEMT INQUIRE DSAS 109

ETASIZE option  
     INQUIRE SYSTEM command 67



- EUDSASZE 204
- Event JCICS class 34
- event processing, upgrading 271
- EXEC CICS commands
  - API commands, changed 18, 20, 22, 23, 31
  - API commands, made threadsafe 29
  - API commands, new 27
  - SPI command options, obsolete 49
  - SPI commands, changed 52, 61, 68, 85
  - SPI commands, new 97
  - SPI commands, obsolete 49
  - SPI commands, resource signature 82
- EXEC CICS commandsDISCARD
  - PROGRAMDISCARD TRANSACTION
    - DISCARD PROGRAM (made threadsafe) 100
    - DISCARD TRANSACTION (made threadsafe) 100
    - SPI commands, made threadsafe 100
- EXEC CICS WEB API
  - upgrading 245
- EXEC DLI command 29
- exit programming interface (XPI)
  - new calls 149
  - upgrading 146
- EXPIRYINT attribute
  - TSMODEL definition 71
- EXPIRYINT option
  - INQUIRE TSQNAME command 80
  - INQUIRE TSQUEUE command 80
- EXPIRYINTMIN attribute
  - TSMODEL definition 53
- EXTRACT CERTIFICATE command 29
- EXTRACT TCPIP command 29
- EXTRACT WEB command 23
- EYU9XDBT 276

## F

- FCLJ gate 6
- FCQRONLY system initialization
  - parameter 6, 11
- file definitions 213
- FILE resource definition 39
- FILELIMIT
  - CEMT SET MONITOR 124
- FILELIMIT option
  - SET MONITOR command 96
- FLAGSET option
  - INQUIRE TRACETYPE command 93
  - SET TRACETYPE command 96
- FORMATTIME 31
- FORMATTIME command 23

## G

- GALENGTH option
  - ENABLE PROGRAM command 61
- GCDSASIZE
  - CEMT INQUIRE DSAS 109
- GCDSASIZE option
  - INQUIRE SYSTEM command 67
- GCMODEL
  - CEMT INQUIRE JVMSERVER 112

- GET CONTAINER command 18
- GET COUNTER command 29
- GET DCOUNTER command 29
- global user exits
  - changed programs 137, 138, 139, 140
  - new programs 141
  - upgrading 136
- GSDSASIZE
  - CEMT INQUIRE DSAS 109
- GSDSASIZE option
  - INQUIRE SYSTEM command 67
- GUDSASIZE
  - CEMT INQUIRE DSAS 109

## H

- HOST
  - CEMT INQUIRE
    - CORBASERVER 118
    - CEMT INQUIRE IPCONN 119
    - CEMT INQUIRE URIMAP 122
    - INQUIRE TCPIPSERVICE 121
- HOST option
  - INQUIRE TCPIPSERVICE
    - command 92
    - INQUIRE URIMAP command 94
  - WEB EXTRACT or EXTRACT WEB
    - command 25
  - WEB OPEN command 26
  - WEB PARSE URL command 26
- HOSTTYPE
  - CEMT INQUIRE
    - CORBASERVER 118
    - CEMT INQUIRE IPCONN 119
    - CEMT INQUIRE URIMAP 122
    - INQUIRE TCPIPSERVICE 121
- HOSTTYPE option
  - INQUIRE TCPIPSERVICE
    - command 92
    - INQUIRE URIMAP command 94
  - WEB EXTRACT or EXTRACT WEB
    - command 26
  - WEB PARSE URL command 27
- HTTP client open exit, new 141
- HTTP client send exit, new 141
- HTTP EP adapter 272
- HttpRequest JCICS class 34, 35
- HttpSession JCICS class 34

## I

- IBM 31-bit SDK for z/OS V6 for Java
  - upgrading to 64-bit Version 6.0.1 232
- IBM SDK for z/OS 229, 230, 232
- IBM SDK for z/OS V1.4.2 for Java
  - upgrading to V6.0.1 229
- IBM SDK for z/OS V5 for Java
  - upgrading to V6.0.1 230
- IBM SDK for z/OS V6.0.1 for Java
  - Java 1.4.2 229
  - Java 5 229, 230
  - Java 6 229, 230
  - upgrading 229, 230
- ICVTSD system initialization
  - parameter 6

- IDNTY
  - CEMT SET MONITOR 124
- IDNTYCLASS
  - CEMT INQUIRE MONITOR 120
- IDNTYCLASS option
  - INQUIRE MONITOR command 91
  - SET MONITOR command 96
- IDPROP
  - CEMT INQUIRE IPCONN 119
- IIOPLISTENER system initialization
  - parameter 5
- INITHEAP
  - CEMT INQUIRE JVMSERVER 112
- initialization programs 151
- INITPARM system initialization
  - parameter 6
- INQUIRE ASSOCIATION 52
- INQUIRE ASSOCIATION command 61, 68, 85
- INQUIRE ATOMSERVICE command 61, 68
- INQUIRE BUNDLE 52
- INQUIRE BUNDLE command 52
- INQUIRE BUNDLEPART command 52
- INQUIRE CAPTURESPEC command 52, 61, 68
- INQUIRE CAPTURESPEC
  - improvements 272
- INQUIRE CLASSCACHE CEMT
  - command 103
- INQUIRE CORBASERVER command 85
- INQUIRE DISPATCHER CEMT
  - command 103
- INQUIRE DISPATCHER command 52
- INQUIRE DSNNAME 52
- INQUIRE EVENTBINDING 61, 68
- INQUIRE EVENTBINDING
  - (changed) 52
- INQUIRE EVENTPROCESS 61, 68
- INQUIRE FILE command 61, 68, 100
- INQUIRE IPCONN command 85
- INQUIRE JVM CEMT command 103
- INQUIRE JVMSERVER 61, 68
- INQUIRE JVMSERVER command 52
- INQUIRE LIBRARY 52
- INQUIRE MONITOR CEMT
  - command 103
- INQUIRE MQCONN command 61, 68
- INQUIRE PROGRAM command 61, 68
- INQUIRE PROGRAM command
  - (changed) 52
- INQUIRE SYSTEM command 52, 85
- INQUIRE TCPIPSERVICE command 61, 68, 85
- INQUIRE TERMINAL command 85
- INQUIRE TRACEDEST command 100
- INQUIRE TRACEFLAG command 100
- INQUIRE TRACETYPE (changed) 52
- INQUIRE TRACETYPE command 85, 100
- INQUIRE TSMODEL CEMT
  - command 103
- INQUIRE TSMODEL command 61, 68
- INQUIRE TSQNAME CEMT
  - command 103
- INQUIRE TSQUEUE / TSQNAME
  - command 61, 68

INQUIRE TSQUEUE CEMT  
 command 103  
 INQUIRE URIMAP command 61, 68, 85  
 INQUIRE VTAM command 85  
 INQUIRE WEB command 100  
 INQUIRE WEBSERVICE command 61, 68  
 INQUIRE WORKREQUEST  
 command 85  
 Internet security  
 upgrading 245  
 interregion communication program  
 (DFHIRP)upgrading 221  
 INTERVAL option  
 SET STATISTICS command 68  
 INVOKE SERVICE command  
 connection pooling  
 upgrading 245  
 INVOKE WEBSERVICE command 23  
 IPCONN resource definition 39, 42  
 IPFAMILY  
 CEMT INQUIRE  
 CORBASERVER 118  
 CEMT INQUIRE IPCONN 118, 119, 120, 123  
 INQUIRE TCPIPService 121  
 IPFAMILY option  
 INQUIRE TCPIPService  
 command 92  
 INQUIRE URIMAP command 95  
 IPIC connection intersystem queues exit,  
 new 141  
 IPRESOLVED  
 CEMT INQUIRE  
 CORBASERVER 118  
 CEMT INQUIRE IPCONN 120  
 CEMT INQUIRE URIMAP 123  
 INQUIRE TCPIPService 121  
 IPRESOLVED option  
 INQUIRE TCPIPService  
 command 93  
 INQUIRE URIMAP command 95

## J

J8CPUT 163  
 J9CPUT 163  
 Java  
 upgrading 223  
 Java 6 232  
 Java applications  
 upgrading 223  
 JAVADIR parameter 3  
 JCICS classes 33  
 Event (changed) 34  
 HttpRequest (changed) 34, 35  
 HttpSession (changed) 34  
 TcpipRequest (changed) 33  
 JCICS methods 33  
 JCL 4  
 JMSINGRP, new BAS object 291  
 JOURNAL 279  
 JRNINGRP 279  
 JRNLDEF 279  
 JVM 233  
 class paths  
 for shared class cache 223

JVM (*continued*)  
 resettable (no longer used) 223  
 shared class cache 223  
 upgrading 223  
 JVM profiles  
 upgrading 223  
 JVM server 233, 235  
 upgrading applications 235  
 JVMPROFILEDIR system initialization  
 parameter 6  
 JVMSERVER  
 CEMT INQUIRE URIMAP 110  
 JVMSERVER resource definition 42  
 JVMSVDEF, new BAS object 291

## L

LIBRARY resource definition 42  
 LINK command 18  
 LINKLEVEL option  
 ASSIGN command 18  
 LOAD PROGRAM command 18  
 LOCAL 19  
 LOCALCCSID system initialization  
 parameter 11  
 LOGREPSTATUS 52  
 CEMT INQUIRE DSNNAME 109  
 LOGREPSTATUS option  
 INQUIRE DSNNAME 64  
 LSRPOOL definition  
 LSRPOOLNUM attribute 69  
 LSRPOOL resource definition 39  
 LSRPOOLID 36, 213  
 LSRPOOLID option  
 INQUIRE FILE command 78  
 LSRPOOLNUM 213  
 LSRPOOLNUM attribute  
 LSRPOOL definition 69

## M

macro resource definition  
 upgrading 47  
 MAJORVERSION  
 CEMT INQUIRE BUNDLE 108  
 MAJORVERSION option 19  
 INQUIRE MAJORVERSION  
 command 63  
 MASALTLCNT system parameter 275  
 MASALTLRTPRI system parameter 275  
 MASALTLRRTIM system parameter 275  
 MASTASKPROT system parameter 275  
 master JVM 223  
 MAXHEAP  
 CEMT INQUIRE JVMSERVER 112  
 MAXJTDLY 163  
 MAXJVMTCBS system initialization  
 parameter 5  
 MAXPERSIST  
 INQUIRE TCPIPService 113  
 MAXPERSIST option  
 INQUIRE TCPIPService  
 command 79  
 MAXSSLTCBS system initialization  
 parameter 11  
 MAXTASKS  
 CEMT SET SYSTEM 111  
 MAXTASKS option  
 SET SYSTEM command 68  
 MAXTHRDTCBS  
 CEMT INQUIRE DISPATCHER 118  
 MAXTHRDTCBS option  
 INQUIRE DISPATCHER  
 command 89  
 MEMLIMIT 3  
 MESSAGECASE option  
 INQUIRE SYSTEM command 59  
 messages, changed 323  
 messages, deleted 319  
 messages, new 339  
 MGMTPART option  
 INQUIRE BUNDLE command 63  
 MICROVERSION  
 CEMT INQUIRE BUNDLE 108  
 MICROVERSION option 19  
 INQUIRE MICROVERSION  
 command 63  
 migrate 149  
 migrating  
 SAML 255  
 migrating event processing 271  
 MILLISECONDS option  
 FORMATTIME command 25  
 MINORVERSION  
 CEMT INQUIRE BUNDLE 108  
 MINORVERSION option 19  
 INQUIRE MINORVERSION  
 command 63  
 MIRRORLIFE  
 CEMT INQUIRE IPCONN 112  
 MLXSCTM 163  
 MNIDN system initialization  
 parameter 11  
 MNPS  
 CEMT INQUIRE VTAM 123  
 MNSUBSYS system initialization  
 parameter 5  
 monitoring control table, DFHMCT  
 upgrading 47  
 monitoring data, obsolete 163  
 MQCINGRP, new BAS object 291  
 MQCONDEF, new BAS object 291  
 MQCONN  
 CEMT INQUIRE SYSTEM 120  
 MQCONN option  
 INQUIRE SYSTEM command 91  
 MQCONN resource definition 42  
 MQCONN system initialization  
 parameter 6  
 MRO (multiregion  
 operation)upgrading 221  
 MSGCASE system initialization  
 parameter 6  
 multiregion operation  
 (MRO)upgrading 221  
 MVSSMFID option  
 INQUIRE SYSTEM command 59  
 MVSSYSNAME option  
 INQUIRE SYSTEM command 59  
 MXT system initialization parameter 6

## N

- new abend codes 385
- new BAS definition objects
  - ATMINGRP 291
  - ATOMDEF 290
  - BUNDDEF 291
  - BUNINGRP 291
  - JMSINGRP 291
  - JVMSVDEF 291
  - MQCINGRP 291
  - MQCONDEF 291
- new CEMT commands 124
- new CSD groups
  - DFHEP 43
  - DFHFCRL 43
  - DFHPIVAL 43
  - DFHRL 44
  - DFHRS 44
  - DFHWEB2 44
  - DFHWU 44
- new messages 339
- new resource definition attributes 39
- new resources 42
- new system initialization parameters 11
- new user-exit programs 141
- NOAUTHENTIC
  - CEMT INQUIRE URIMAP 122
- NOCOMPRESS
  - CEMT INQUIRE MONITOR 120
- NOIDENTY
  - CEMT SET MONITOR 124
- NOPS
  - CEMT INQUIRE VTAM 123
- NOTAPPLIC
  - CEMT INQUIRE URIMAP 106
- NSR 213
- NUMDATAPRED option
  - INQUIRE CAPTURESPEC command 76
- NUMINFOSRCE option
  - INQUIRE CAPTURESPEC command 76
- NUMOPTPRED option
  - INQUIRE CAPTURESPEC command 76

## O

- obsolete CSD groups
  - DFH\$CCI 37
  - DFH\$EJB 37
  - DFH\$EJB2 37
  - DFH\$IIOP 37
  - DFH\$JAVA 37
  - DFH\$JVM 37
  - DFHADET 37
  - DFHADST 37
  - DFHCOMPB 37
  - DFHEJBU 37
  - DFHIIOP 37
- obsolete system initialization parameters 5
- obsolete transactions 129
- obsolete user-replaceable programs 151
- OCCUPANCY
  - CEMT INQUIRE JVMSEVER 112

- OO COBOL 211
- OPERATION option 19
  - CEMT INQUIRE URIMAP command 107
  - INQUIRE URIMAP command 59
- OS/VS COBOL 211

## P

- PARTNER
  - CEMT INQUIRE IPCONN 120
- PERFORM STATISTICS CEMT command 103
- PID
  - CEMT INQUIRE JVMSEVER 112
- PIPELINE resource definition 39
- PLATFORM option 19
  - CEMT INQUIRE URIMAP command 107
  - EXTRACT STATISTICS command 55
  - INQUIRE URIMAP command 59
- platforms
  - security 194
- PORT
  - CEMT INQUIRE URIMAP 95, 123
- PRIMPRED option
  - INQUIRE CAPTURESPEC command 76
- PRIMPREDOP option
  - INQUIRE CAPTURESPEC command 76
- PRIMPREDTYPE option
  - INQUIRE CAPTURESPEC command 77
- PROFIEDIR
  - CEMT INQUIRE JVMSEVER 105, 110
- program compatibility, SPI 49
- PROGRAM resource definition 39
- PSTYPE
  - CEMT INQUIRE VTAM 123
- PSTYPE option
  - INQUIRE VTAM command 95
- PSTYPE system initialization parameter 6
- PUT CONTAINER command 18

## Q

- QUERY COUNTER command 29
- QUERY DOUNTER command 29
- QUERY SECURITY command 20, 22, 29

## R

- RACFSYNC 11
- RDO
  - obsolete attributes 36
- RDSASZE 204
- READ command 29
- READNEXT command 29
- READPREV command 29
- READQ TD command 29
- READQ TS command 29

- REMOTESYSTEM option
  - INQUIRE TRANSACTION command 93
- repackage Java application for OSGi JVM server 233
- repository data set 215
  - upgrading 215
- RESETBR command 29
- resettable JVM
  - withdrawal 223
- resource definition
  - changes 35
- resource definition (online)
  - obsolete RDO attributes 36
  - upgrading the CSD
    - SCAN function 203
- resource definitions
  - ATOMSERVICE (new) 42
  - BUNDLE (new) 42
  - changed 39
  - FILE (changed) 39
  - IPCONN (changed) 39
  - IPCONN (new) 42
  - JVMSEVER (new) 42
  - LIBRARY (new) 42
  - LSRPOOL (changed) 39
  - MQCONN (new) 42
  - new attributes 39
  - new resources 42
  - PIPELINE (changed) 39
  - PROGRAM (changed) 39
  - TCPIPSERVICE (changed) 39
  - TSMODEL (changed) 39
  - URIMAP (changed) 39
- RESYNC ENTRYNAME command 100
- REWIND COUNTER command 29
- REWIND DOUNTER command 29
- REWRITE command 29
- RTIMOUT 47

## S

- SADDRLENGTH option
  - EXTRACT TCPIP command 24
- SAML
  - migrating 255
  - upgrading 255
- SCEERUN 223
- SCEERUN2 223
- SCHEMALEVEL option
  - INQUIRE EVENTPROCESS 78
- SDFJAUTH 223
- SDSASZE 204
- SECVFYFREQ system initialization parameter 11
- SERVERADDR option
  - EXTRACT TCPIP command 24
- service routine
  - reusing from CA8K SupportPac 247
- SET DISPATCHER CEMT command 103
- SET FILE command 61, 68
- SET JVMPOOL CEMT command 103
- SET MONITOR command 85
- SET MQCONN command 61, 68
- SET PROGRAM command 52
- SET STATISTICS command 52
- SET SYSTEM command 52



- SET TASK command 100
- SET TRACEDEST command 100
- SET TRACEFLAG command 100
- SET TRACETYPE (changed) 52
- SET TRACETYPE command 85, 100
- SET VTAM command 85
- SET WEB command 100
- SEYUMLIB 276
- SEYUPLIB 276
- SEYUTLIB 276
- shareable application class path 223
- shared class cache 223
- shutdown programs 151
- SIGNOFF command 29
- SIGNON command 20, 22, 29
- SIT (system initialization table)
  - parameters 5
- SMF 110 records
  - upgrading 163
- SMFJRNL 279
- SNPS
  - CEMT INQUIRE VTAM 123
- SOCKETCLOSE option
  - INQUIRE URIMAP command 80, 113
- SOCKPOOLSIZE option
  - INQUIRE URIMAP command 80, 113
- SRVERCP system initialization
  - parameter 11
- SRVRADDR6NU option
  - EXTRACT TCPIP command 24
- SRVRIPFAMILY option
  - EXTRACT TCPIP command 24
- SSL
  - upgrading 245
- SSLCACHE system initialization
  - parameter 11
- STALLxxxCNT system parameter 275
- STALLxxxTSK system parameter 275
- START CHANNEL command 18
- START command 18
- STARTBR command 29
- STATDEF 313
- statistics 177
  - changed 178
  - new 181
  - obsolete 177
- STRINGZONE option
  - FORMATIME command 19
- SYNCPPOINT command 29
- SYNCPPOINT ROLLBACK command 29
- system initialization parameters 5
  - APPLID (changed) 6
  - changed 6
  - CICS\_HOME (new) 11
  - CLINTCP (new) 11
  - CONFDATA (changed) 6
  - CRLSERVER (new) 11
  - CSDLRNO (changed) 6
  - EDSALIM (changed) 6
  - EJBROLEPRFX (obsolete) 5
  - ENCRYPTION (changed) 6
  - FCQRONLY (changed) 6
  - FCQRONLY (new) 11
  - ICVTSD (changed) 6
  - IIOPLISTENER (obsolete) 5

- system initialization parameters
  - (continued)
  - INITPARM (changed) 6
  - JVMPROFILEDIR (changed) 6
  - LOCALCCSID (new) 11
  - MAXJVMTCBS (obsolete) 5
  - MAXSSLTCBS (new) 11
  - MAXXPTCBS (obsolete) 5
  - MNIDN (new) 11
  - MNSUBSYS (obsolete) 5
  - MQCONN (changed) 6
  - MSGCASE (changed) 6
  - MXT (changed) 6
  - new 11
  - obsolete 5
  - PSTYPE (changed) 6
  - SECVFYFREQ (new) 11
  - SRVERCP (new) 11
  - SSLCACHE (new) 11
  - TBEXITS (changed) 6
  - TCTUALOC (changed) 6
  - TRTABSZ (changed) 6
  - TRTRANSZ (changed) 6
  - TSMINLIMIT (new) 11
  - UOWNETQL (changed) 6
  - USRDELAY (changed) 6
  - USSCONFIG (new) 11
  - XEJB (obsolete) 5
  - XHFS (new) 11
  - XRES (new) 11
- system initialization table
  - default 5
- system programming interface
  - changed commands 52, 61, 68, 82, 85
  - CREATE FILE (changed) 61, 68
  - CREATE LSRPOOL (changed) 61, 68
  - CREATE PROGRAM (changed) 52
  - CREATE TCPIP SERVICE
    - (changed) 61, 68
  - CREATE TSMODEL (changed) 61, 68
  - ENABLE PROGRAM (changed) 52
  - INQUIRE ASSOCIATION
    - (changed) 52, 61, 68, 85
  - INQUIRE ATOMSERVICE
    - (changed) 61, 68
  - INQUIRE BUNDLE (changed) 52
  - INQUIRE BUNDLEPART
    - (changed) 52
  - INQUIRE CAPTURESPEC
    - (changed) 52, 61, 68
  - INQUIRE CORBASERVER
    - (changed) 85
  - INQUIRE DISPATCHER
    - (changed) 52
  - INQUIRE EVENTBINDING
    - (changed) 61, 68
  - INQUIRE EVENTPROCESS
    - (changed) 61, 68
  - INQUIRE FILE (changed) 61, 68
  - INQUIRE FILE (made
    - threadsafe) 100
  - INQUIRE IPCONN (changed) 85
  - INQUIRE JVMSERVER (changed) 52, 61, 68
  - INQUIRE LIBRARY (changed) 52
  - INQUIRE MONITOR (changed) 85

- system programming interface (continued)
  - INQUIRE PROGRAM (changed) 52, 61, 68
  - INQUIRE SYSTEM (changed) 52, 85
  - INQUIRE TCPIP SERVICE
    - (changed) 61, 68, 85
  - INQUIRE TERMINAL (changed) 85
  - INQUIRE TRACEDEST (made
    - threadsafe) 100
  - INQUIRE TRACEFLAG (made
    - threadsafe) 100
  - INQUIRE TRACETYPE (changed) 85
  - INQUIRE TRACETYPE (made
    - threadsafe) 100
  - INQUIRE TSMODEL (changed) 61, 68
  - INQUIRE TSQUEUE / TSQNAME
    - (changed) 61, 68
  - INQUIRE URIMAP (changed) 52, 61, 68, 85
  - INQUIRE VTAM (changed) 85
  - INQUIRE WEB (made
    - threadsafe) 100
  - INQUIRE WEBSERVICE
    - (changed) 61, 68
  - INQUIRE WORKREQUEST
    - (changed) 85
  - made threadsafe 100
  - new commands 97
  - obsolete commands
    - CREATE CORBASERVER 49
    - CREATE DJAR 49
    - CREATE REQUESTMODEL 49
    - DISCARD CORBASERVER 49
    - DISCARD DJAR 49
    - DISCARD REQUESTMODEL 49
    - INQUIRE BEAN 49
    - INQUIRE CORBASERVER 49
    - INQUIRE DJAR 49
    - INQUIRE REQUESTMODEL 49
    - INQUIRE WORKREQUEST 49
    - SET CORBASERVER 49
    - SET WORKREQUEST 49
  - obsolete options
    - COLLECT STATISTICS 49
    - CREATE FILE 49
    - CREATE LSRPOOL 49
    - CREATE PROGRAM 49
    - CSD INSTALL 49
    - INQUIRE DISPATCHER 49
    - INQUIRE FILE 49
    - INQUIRE PROGRAM 49
    - PERFORM STATISTICS 49
    - SET DISPATCHER 49
    - SET FILE 49
    - SET PROGRAM 49
  - obsolete SPI command options 49
  - obsolete SPI commands 49
  - RESYNC ENTRYNAME (made
    - threadsafe) 100
  - SET FILE (changed) 61, 68
  - SET MONITOR (changed) 85
  - SET PROGRAM (changed) 52
  - SET STATISTICS (changed) 52
  - SET SYSTEM (changed) 52
  - SET TASK (made threadsafe) 100

system programming interface (*continued*)  
 SET TRACEDEST (made  
   threadsafe) 100  
 SET TRACEFLAG (made  
   threadsafe) 100  
 SET TRACETYPE (changed) 85  
 SET TRACETYPE (made  
   threadsafe) 100  
 SET VTAM (changed) 85  
 SET WEB (made threadsafe) 100  
 system programming interface (SPI) 49

## T

TAPEJRNL 279  
 task-related user exits  
   upgrading 143  
 TBEXITS system initialization  
   parameter 6  
 TcpipRequest JCICS class 33  
 TCPIPService resource definition 39  
   upgrading 245  
 TCPIPSSLCERT 275  
 TCTUALOC system initialization  
   parameter 6  
 TIME 31  
 trace data sets 4  
 trademarks 393  
 transactions  
   CICSplex SM 293  
   CKQC 129  
   obsolete 129  
 TRTABSZ system initialization  
   parameter 6  
 TRTRANSZ system initialization  
   parameter 6  
 TS queue adapter 271  
 TSMMAINLIMIT system initialization  
   parameter 11  
 TSMODEL definition  
   EXPIRYINT attribute 71  
   EXPIRYINTMIN attribute 53  
 TSMODEL resource definition 39  
 TSQUEUELIMIT  
   CEMT SET MONITOR 124  
 TSQUEUELIMIT option  
   SET MONITOR command 96

## U

UDSASZ 204  
 UNAVAILABLE  
   CEMT SET BUNDLE 107  
 UNLOCK command 29  
 UOWNETQL system initialization  
   parameter 6  
 UPDATE COUNTER command 29  
 UPDATE DOUNTER command 29  
 upgrading  
   SAML 255  
 upgrading applications 235  
 upgrading CICSplex SM  
   upgrading a CMAS 305  
   upgrading a MAS 311  
 upgrading file control 213  
 upgrading JSON assistant 253

upgrading NSR 213  
 upgrading the CSD 202  
   SCAN function 203  
 upgrading to 64-bit Java 232  
 URIMAP  
   CEMT INQUIRE ATOMSERVICE 111  
 URIMAP definition  
   SOCKETCLOSE attribute 72  
   USAGE attribute 39  
 URIMAP option  
   INQUIRE ATOMSERVICE  
     command 73  
 URIMAP resource definition 39  
 USAGE  
   CEMT INQUIRE URIMAP 123  
 USAGE attribute  
   URIMAP definition 39  
 USAGE option  
   INQUIRE URIMAP command 94  
 user-replaceable programs 151  
   changed user-replaceable  
     programs 152  
   obsolete user-replaceable  
     programs 151  
 USRDELAY system initialization  
   parameter 6  
 USSCONFIG system initialization  
   parameter 11  
 UTC 19

## V

VERIFY PASSWORD command 18, 29  
 VERIFY PHRASE command 18  
 VOLUME 279

## W

WAIT JOURNALNAME command 29  
 WAIT JOURNALNUM command 29  
 WEB CONVERSE command  
   CLOSESTATUS option 245  
 WEB EXTRACT command 23  
 WEB OPEN command 23  
   connection pooling  
     upgrading 245  
 WEB PARSE URL command 23  
 WEB SEND command  
   CLOSESTATUS option 245  
 WebSphere MQ bridge  
   events 271  
 worker JVM 223  
 WRITE command 29  
 WRITE JOURNALNAME command 29  
 WRITE JOURNALNUM command 29  
 WRITEQ TD command 29  
 WRITEQ TS command 20, 22, 29

## X

XAPADMGR, new user exit 141  
 XEJB system initialization parameter 5  
 XEPCAP 141  
 XHFS system initialization parameter 11  
   upgrading 245  
 XISQUE, new user exit 141

XML formats for TSQ 271  
 XMLTRANSFORM  
   CEMT INQUIRE ATOMSERVICE 111  
 XMLTRANSFORM option  
   INQUIRE ATOMSERVICE  
     command 73  
 XRES system initialization parameter 11  
   upgrading 245  
 XTASK 279  
 XWBAUTH, new user exit 141  
 XWBOPEN, new user exit 141  
 XWBSNDO, new user exit 141

## Z

z/OS conversion services 201



---

## Readers' Comments — We'd Like to Hear from You

CICS Transaction Server for z/OS  
Version 5 Release 2  
Upgrading from CICS TS Version 3.2

Publication No. GC34-7297-00

We appreciate your comments about this publication. Please comment on specific errors or omissions, accuracy, organization, subject matter, or completeness of this book. The comments you send should pertain to only the information in this manual or product and the way in which the information is presented.

For technical questions and information about products and prices, please contact your IBM branch office, your IBM business partner, or your authorized remarketer.

When you send comments to IBM, you grant IBM a nonexclusive right to use or distribute your comments in any way it believes appropriate without incurring any obligation to you. IBM or any other organizations will only use the personal information that you supply to contact you about the issues that you state on this form.

Comments:

Thank you for your support.

Submit your comments using one of these channels:

- Send your comments to the address on the reverse side of this form.
- Send a fax to the following number: +44 1962 816151
- Send your comments via email to: [idrctf@uk.ibm.com](mailto:idrctf@uk.ibm.com)

If you would like a response from IBM, please fill in the following information:

\_\_\_\_\_  
Name

\_\_\_\_\_  
Address

\_\_\_\_\_  
Company or Organization

\_\_\_\_\_  
Phone No.

\_\_\_\_\_  
Email address

## Readers' Comments — We'd Like to Hear from You

GC34-7297-00



Cut or Fold  
Along Line

## Fold and Tape

**Please do not staple**

### Fold and Tape

PLACE  
POSTAGE  
STAMP  
HERE

IBM United Kingdom Limited  
User Technologies Department (MP189)  
Hursley Park  
Winchester  
Hampshire  
United Kingdom  
SO21 2JN

## Fold and Tape

**Please do not staple**

### Fold and Tape

GC34-7297-00

Cut or Fold  
Along Line





GC34-7297-00

