Note:
Before using this information and the product it supports, read the "Notices" topic at the end of this information.

Second Edition (April 2018)
This edition applies to Version 1 Release 6 of IBM Tools Base for z/OS IMS Tools Knowledge Base (program number 5655-V93) and to all subsequent releases and modifications until otherwise indicated in new editions.
This edition replaces SC19-4372-01.

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

IBM® Tools Base IMS™ Tools Knowledge Base for z/OS® (also referred to as IMS Tools Knowledge Base and IMS Tools KB) is the foundational infrastructure that provides a centralized information management environment for IMS Tools products. IMS Tools Knowledge Base allows you to store, manage, and access resources (such as reports, sensor data, policies, and rules) that are generated or used by any tool product that has been enabled and registered to participate in this environment.

These topics provide instructions for installing, configuring, and using IMS Tools Knowledge Base.

To use these instructions, you must have already installed IMS Tools Knowledge Base by completing the instructions in the Program Directory for IBM Tools Base for z/OS (GI10-8819), which is included with the product media and is also available on the IMS Tools Product Documentation page.

These topics are designed to help database administrators, system programmers, application programmers, and system operators perform the following tasks:

- Understand the capabilities of the functions that are associated with IMS Tools Knowledge Base
- Install and operate IMS Tools Knowledge Base
- Customize your IMS Tools Knowledge Base environment
- Diagnose and recover from IMS Tools Knowledge Base problems
- Use IMS Tools Knowledge Base with other IMS products

To use these topics, you should have a working knowledge of:

- The z/OS operating system
- ISPF
- SMP/E
- IMS

Always refer to the IMS Tools Product Documentation web page for complete product documentation resources:

http://www-01.ibm.com/support/docview.wss?uid=swg27020942

The IMS Tools Product Documentation web page includes:

- Links to IBM Knowledge Center for the user guides ("HTML")
- PDF versions of the user guides ("PDF")
- Program Directories for IMS Tools products
- Recent updates to the user guides, referred to as "Tech docs" ("See updates to this book!")
- Technical notes from IBM Software Support, referred to as "Tech notes"
- White papers that describe product business scenarios and solutions
Part 1. IMS Tools Knowledge Base overview

IMS Tools Knowledge Base is the foundational infrastructure that provides a centralized information management environment for IMS Tools products.

IMS Tools Knowledge Base allows you to store, manage, and access resources (such as reports, sensor data, policies, and rules) that are generated or used by any tool product that has been enabled and registered to participate in this environment.

Topics:
- Chapter 1, “IMS Tools Knowledge Base overview,” on page 3
- Chapter 2, “Configuring an initial installation of IMS Tools KB,” on page 19
Chapter 1. IMS Tools Knowledge Base overview

IBM Tools Base IMS Tools Knowledge Base for z/OS (also referred to as Tools Base IMS Tools Knowledge Base and IMS Tools KB) is an IMS Tools product that provides common services for storing and viewing resources (such as reports, sensor data, policies, and rules) that are generated or used by other participating IMS Tools products.

Topics:
- “What’s new in IMS Tools Knowledge Base” on page 4
- “What does IMS Tools Knowledge Base do?” on page 5
- “IBM Tools Base for z/OS” on page 7
- “Information management process flow” on page 9
- “Report service environment” on page 10
- “Policy Services environment (conditional reorganization example)” on page 11
- “Utility history environment” on page 12
- “Autonomics Director environment” on page 13
- “Service updates and support information” on page 15
- “Product documentation and updates” on page 16
- “Accessibility features” on page 18
What's new in IMS Tools Knowledge Base

This topic summarizes the technical changes for this edition.

New and changed information is indicated by a vertical bar (|) to the left of a change. Editorial changes that have no technical significance are not noted.

SC19-4372-02 - April 2018 - Second edition (V1.6)

• Some topic reorganization, including new Repository Reference section.
• Backing up repository data sets topic now includes Autonomics Director repository.
• Keyword reference for Import and Export Utility: Default value types.
• New HKT messages.
• New HKTM and HKTX error messages.

SC19-4372-01 - October 2016 - First edition (V1.6)

• Chapter 16, “HKT error messages (import and export utility),” on page 193.
What does IMS Tools Knowledge Base do?

IMS Tools Knowledge Base is the foundational infrastructure that provides a centralized information management environment for IMS Tools products. IMS Tools Knowledge Base allows you to store, manage, and access information resources (such as reports, sensor data, policies, and rules) that are generated or used by any tool product that has been enabled and registered to participate in this environment.

IMS Tools Knowledge Base provides a common information management service that allows the sharing of data generated and used by multiple tool products within a sysplex. IMS Tools Knowledge Base is managed from a single, centralized user interface.

Report services support

Database administration responsibilities can include ensuring the availability and maintenance of many hundreds or thousands of databases. These database administration tasks require the services of many tools to perform backup, reorganization, and analysis operations. Reports that are generated by the tools during these operations can provide valuable information, such as documenting the success of tool execution or reporting statistics on the state of a database at that time.

Most of these reports are valuable to you long after they are generated. The reports, and the data that is provided in these reports, allows you to better use the rich information that is produced by the tools. Typically, however, most reports are deleted because there is no useful way to save and organize them.

The IMS Tools Knowledge Base information management environment, operating within a sysplex, allows automatic capturing of reports that are generated by participating IMS Tools products and storing of these reports in a central report (output) repository.

Sensor data services support

Sensor data is the information collected by a sensor-enabled IMS Tools product that measures the state of a specific database condition. The information is handled by the IMS Tools Knowledge Base server and stored in a central IMS Tools Knowledge Base Sensor Data repository.

Policy Services support

Policy Services can analyze specific database activity data that is collected by an IMS Tools product, and provide a response to any events that exceed the threshold limits specified for this data. All Policy Services-related information (such as policies, rules, directory entries, and notification lists) is stored in and managed by central repositories controlled by IMS Tools Knowledge Base Input repository.

Autonomics Director support

The Autonomics Director server records user defined parameter data for monitored databases and groups. It also records period definitions and evaluation data history for monitored databases. The data is stored and accessed by the Autonomics Director server in IMS Tools Knowledge Base.
Product features and benefits

This version of IMS Tools Knowledge Base provides the following features and benefits:

- Central repositories that are shared by all registered IMS Tools products in a sysplex and that provide convenient administration
- A central repository for automatically collecting reports that are generated by participating IMS Tools products
- Central repositories for storing Policy Services resources, such as policies, rules, directory entries, notification lists, and sensor data
- Central repository for storing Sensor Data that is used for database analysis and tuning purposes
- Central repository for storing Autonomics Director data, including monitor list entries and results of database evaluations
- Support for multiple IMS Tools products that are enabled for and registered with the IMS Tools Knowledge Base environment
- An interactive user interface (ISPF) with extensive and flexible search capabilities to quickly locate the stored resources that you need and then display them from anywhere in the sysplex environment
- Preservation of data for future trend analysis and decision making
- Report and policy environment history retention, to provide a history of database analysis and actions taken
- Access to historical report and policy environment data for accurate decision making
- Report retention based on user-defined criteria, such as the number of days and the number of versions of a report
- Report retention customized for individual tools or individual reports
- Automatic report deletion, after a report is expired
IBM Tools Base for z/OS

IBM Tools Base for z/OS provides a means to streamline the control and delivery of existing common code components, services, and infrastructure code to IBM customers in a more effective way.

IBM Tools Base for z/OS provides a simplified and more efficient delivery of common parts used by IMS Tools products. The included products and components provide required infrastructure code for all IMS Tools key strategies including autonomies, rule-based programming, and GUI support.

Common code components, for example, IMS Tools Online System Interface and IMS Tools Generic Exits are used by some of the IMS Tools products to connect into the IMS system.

In addition to common components, IBM Tools Base for z/OS also includes products that are useful to customers when they are widely deployed as part of an overall solution.

IBM Tools Base for z/OS is composed of the following tools and components:

- Autonomics Director
- Policy Services
- IMS Tools Knowledge Base
- Distributed Access Infrastructure
- IMS Tools Common Services User’s Guide
  (includes IMS Tools Generic Exits and IMS Tools Online System Interface)
- IMS Hardware Data (HD) Compression Extended

About IMS Tools Knowledge Base

With its common repository and viewing interface, IMS Tools Knowledge Base can provide centralized data storage, access, and management capabilities for a complex sysplex environment. Central repositories allow access to historical data for accurate decision making. Stored resources can be found quickly using the powerful search capability, and data can be preserved for future trend analysis and decision making. IMS Tools Knowledge Base becomes the single platform within a sysplex environment for multiple IMS Tools products to share resources.

Always refer to the appropriate product information and description for any IMS Tools product to determine if the tool is enabled for operation with IMS Tools Knowledge Base. Many existing versions of IMS Tools products can be enabled by applying a service update.

Business scenarios for report services

The centralized IMS Tools Knowledge Base repository allows you to save and organize database reports that are normally discarded. These preserved reports can provide you with accurate information for future analysis, problem-solving, and research.

The following example scenarios illustrate the kinds of problems that can be solved with the IMS Tools Knowledge Base information management system:

Report storage and access
How can I save valuable reports?
How can I locate a report I saved?
How can I access reports using various criteria information?

**Analysis of historical data**
- What did Space Monitor report the last time I ran it against this database?
- What did Space Monitor report last month?
- What did Space Monitor report six months ago?

**Tracking of database actions**
- Did I run IMS HP Pointer Checker against this database recently?
- Was this database reorganized last month?
Information management process flow

The IMS Tools Knowledge Base information management environment, operating within a sysplex, allows the storing, managing, and accessing of resources (such as reports, sensor data, policies, and rules) that are generated or used by any tool product that has been enabled and registered to participate in this environment.

Resources are handled and stored in central repositories by the IMS Tools Knowledge Base server.

The following diagram illustrates the process flow for the IMS Tools Knowledge Base information management environment:

![Diagram of information management process flow]

**Figure 1. Information management process flow**

The following process flow steps match the numbers in the diagram:

1. IMS Tools products perform operations that produce data resources for use by services, or request information from services.
2. Services (such as report storage, sensor data collection, and policy services) process the information.
3. The IMS Tools Knowledge Base server handles the data exchange between the services and the repositories where the data is stored.
4. Central repositories, managed by the IMS Tools Knowledge Base server, allow access to current and archived information (such as reports and policy data).
**Report service environment**

The IMS Tools Knowledge Base report service allows automatic capturing of reports that are generated by participating IMS Tools products and storing of these reports in a central report repository.

The IMS Tools Knowledge Base information management environment consists of the following components:

- One or more primary IMS Tools Knowledge Base servers
  You can divide workload and data storage between logical environments.
- One or more secondary IMS Tools Knowledge Base servers
  Failover recovery ensures that the server is available to record reports.
- Central report repository database
- IMS Tools products, enabled for and registered with IMS Tools Knowledge Base
- XCF interface that is used to transmit reports to the IMS Tools Knowledge Base server
- ISPF interface that is used for report access and administration

The following diagram illustrates the interaction of these components within a sysplex:

---

*Figure 2. IMS Tools Knowledge Base report service environment*
Policy Services environment (conditional reorganization example)

Policy Services can evaluate the data collected by an IMS Tools product about a specific database activity, and can provide a response to any events that exceed the threshold limits specified for this data.

Policy Services provides policy-based database management for members of the IMS Tools product family that are enabled to participate in a conditional autonomies environment. All information is stored in and managed by central repositories controlled by IMS Tools Knowledge Base.

IMS Database Reorganization Expert, with Policy Services, can assist the duties of database administration by providing policy-based conditional database reorganization for the databases important to the business. IMS Database Reorganization Expert uses its Smart Reorg utility to coordinate the evaluation of reorganization policies, and to implement an appropriate response to the reaching or exceeding of thresholds specified for the sensor data collected by the tool.

The conditional reorganization job is like a standard IMS Database Reorganization Expert job. The main difference is that the conditional reorganization job, rather than the Database Administrator (DBA), decides whether to reorganize the database.

Refer to the IBM IMS Database Reorganization Expert for z/OS User’s Guide and IBM IMS Online Reorganization Facility User’s Guide for full details on how these IMS Tools products use Policy Services to perform conditional database reorganizations.
Utility history environment

The Tools Base IMS Tools Knowledge Base utility history service allows for the automatic capturing of job information and statistics (utility history data) of participating IMS Tools products and stores this data in a central repository. The utility history data that is stored in the repository can be used by Policy Services to formulate job recommendations.

For example, Policy Services can access information about when and how often the conditional reorganization feature of the Smart Reorg utility in IMS Database Reorganization Expert and IMS Online Reorganization Facility has been run on a database and use this information to determine whether a reorganization is needed or not.

Refer to the IBM IMS Database Reorganization Expert for z/OS User’s Guide and IMS Online Reorganization Facility User’s Guide for full details on how these IMS Tools products use Policy Services to perform conditional database reorganizations.
Autonomics Director environment

Autonomics Director provides automation of recurring IMS database monitoring and maintenance activities based on a detailed understanding of the current state of your IMS databases.

The Autonomics Director environment is composed of several IMS Tools components.

The following figure illustrates the environment and the process flow for using Autonomics Director.

Autonomics Director Process Flow

![Autonomics Director Process Flow](image)

*Figure 4. Autonomics Director Process Flow. Autonomics Director process flow*

The following process flow steps match the numbers in the figure:

1. The user customizes the Autonomics Director environment by using the Autonomics Director ISPF interface.
2. Autonomics Director collects database and group information from the DBD libraries and the RECON data sets.
3. The user creates a monitor list that consists of group and database names with attributes that are saved in the Autonomics Director repository and that are available for monitoring.
4. The user defines parameters that control how frequently data is collected and policies are evaluated by Autonomics Director. The user can also schedule immediate and deferred data collection and policy evaluations.
5. Sensor data is collected to capture the status of databases at a specific point in time. The user can also request that Autonomics Director submit a batch job to collect the most up-to-date sensor data.
6. Policies and rules defined by Policy Services are stored in the IMS Tools Knowledge Base and are accessed by Autonomics Director. Results from the database evaluations are stored in the Autonomics Director repository and are accessed during inquiries from the client.
7. Autonomics Director uses policies and rules that are defined in Policy Services to evaluate against the most recent database sensor data.
Service updates and support information

Service updates and support information for this product, including software fix packs, PTFs, frequently asked questions (FAQs), technical notes, troubleshooting information, and downloads, are available from the web.

To find service updates and support information, see the following website:

Product documentation and updates

IMS Tools information is available at multiple places on the web. You can receive updates to IMS Tools information automatically by registering with the IBM My Notifications service.

Information on the web

Always refer to the IMS Tools Product Documentation web page for complete product documentation resources:

http://www-01.ibm.com/support/docview.wss?uid=swg27020942

The IMS Tools Product Documentation web page includes:
- Links to [IBM Knowledge Center](http://www-01.ibm.com/support/docview.wss?uid=swg27020942) for the user guides (“HTML”)
- PDF versions of the user guides (“PDF”)
- Program Directories for IMS Tools products
- Recent updates to the user guides, referred to as “Tech docs” (“See updates to this book!”)
- Technical notes from IBM Software Support, referred to as “Tech notes”
- White papers that describe product business scenarios and solutions

IBM Redbooks® publications that cover IMS Tools are available from the following web page:

http://www.redbooks.ibm.com

The IBM Information Management System website shows how IT organizations can maximize their investment in IMS databases while staying ahead of today’s top data management challenges:

https://www.ibm.com/software/data/ims/

Receiving documentation updates automatically

To automatically receive emails that notify you when new technote documents are released, when existing product documentation is updated, and when new product documentation is available, you can register with the IBM My Notifications service. You can customize the service so that you receive information about only those IBM products that you specify.

To register with the My Notifications service:
2. Enter your IBM ID and password, or create one by clicking register now.
3. When the My Notifications page is displayed, click Subscribe to select those products that you want to receive information updates about. The IMS Tools option is located under Software > Information Management.
4. Click Continue to specify the types of updates that you want to receive.
5. Click Submit to save your profile.
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- Use the online reader comment form, which is located at [http://www.ibm.com/software/data/rcf/](http://www.ibm.com/software/data/rcf/)
- Send your comments by email to comments@us.ibm.com

Include the name of the book, the part number of the book, the version of the product that you are using, and, if applicable, the specific location of the text you are commenting on, for example, a page number or table number.
Accessibility features help a user who has a physical disability, such as restricted mobility or limited vision, to use a software product successfully.

The major accessibility features in this product enable users to perform the following activities:
- Use assistive technologies such as screen readers and screen magnifier software. Consult the assistive technology documentation for specific information when using it to access z/OS interfaces.
- Customize display attributes such as color, contrast, and font size.
- Operate specific or equivalent features by using only the keyboard. Refer to the following publications for information about accessing ISPF interfaces:
  - z/OS ISPF User's Guide, Volume 1
  - z/OS TSO/E Primer
  - z/OS TSO/E User's Guide
These guides describe how to use the ISPF interface, including the use of keyboard shortcuts or function keys (PF keys), include the default settings for the PF keys, and explain how to modify their functions.
Chapter 2. Configuring an initial installation of IMS Tools KB

Information about configuring IMS Tools Knowledge Base and other Tools Base components for IMS is provided in IBM Tools Base for z/OS Configuration for IMS.

You can also download a PDF version of this information from the IMS Tools Product Documentation page.
Part 2. Repository reference

IMS Tools Knowledge Base is the foundational infrastructure that provides a centralized information management environment for IMS Tools products.

IMS Tools Knowledge Base allows you to store, manage, and access resources (such as reports, sensor data, policies, and rules) that are generated or used by any tool product that has been enabled and registered to participate in this environment.

Topics:
- Chapter 3, “Repository administration,” on page 23
- Chapter 4, “Implementing a new Output repository,” on page 37
- Chapter 5, “Maintaining repository data sets,” on page 49
- Chapter 6, “IMS Tools Knowledge Base server commands,” on page 59
Chapter 3. Repository administration

You use options from the Administration menu of the IMS Tools Knowledge Base main menu to perform repository administration tasks.

Topics:
• “Viewing repository information” on page 24
• “Starting and stopping repositories (ISPF)” on page 26
• “Starting and stopping repositories (batch)” on page 28
• “Setting the repository autoOPEN condition” on page 33
• “Setting the retention period for the Sensor Data repository” on page 35
Viewing repository information

You can view information about any of the repositories used by IMS Tools Knowledge Base.

About this task

Among other data, the information panel shows the data sets names for the Input, Output, and Registry repositories as defined in the Catalog repository.

Procedure

To view repository information, complete the following steps:

1. Access the Administration menu from the IMS Tools Knowledge Base main menu panel.
   For example:

   ![Administration menu options](image)

2. Select option 3 (List Repositories). Press Enter.
   The Repositories panel is displayed.
   For example:

   ![Repositories panel](image)

   Normally you should see a listing for the Input, Output, and Registry repositories.

   You can connect additional Output repositories to your information management environment. The Repositories panel list will show any additional Output repositories that you created.

3. Use the Information row action (I) for the appropriate repository. Press Enter.
   The Repository Information panel is displayed.
   For example:
The Repository Information panel shows the following information about the repository:

**Table 1. Repository Information panel field descriptions**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>The name of the repository. Names must be eight characters long. Output repository names must start an O and the following characters must be numeric. For example: O1234567</td>
</tr>
<tr>
<td>Type</td>
<td>One of the following repository types: REGISTRY - only one such repository exists</td>
</tr>
<tr>
<td></td>
<td>INPUT - only one such repository exists</td>
</tr>
<tr>
<td></td>
<td>OUTPUT - more than one such repository can exist</td>
</tr>
<tr>
<td></td>
<td>SENSOR - only one such repository exists</td>
</tr>
<tr>
<td></td>
<td>AUTODIR - only one such repository exists</td>
</tr>
<tr>
<td>Stopped</td>
<td>Repository is in either a started (N) or stopped (Y) state.</td>
</tr>
<tr>
<td>Auto</td>
<td>Whether the repository is started when the IMS Tools Knowledge Base server is started (Y) or upon the first reference to the repository (N).</td>
</tr>
<tr>
<td>Data Set Names</td>
<td>The name of the four data sets required to create a repository. These data set names must not duplicate any other repository data set names.</td>
</tr>
</tbody>
</table>
Starting and stopping repositories (ISPF)

You can use the ISPF user interface to manually place the IMS Tools Knowledge Base repositories in a started or stopped state.

About this task

For example, you might want to stop a repository while the IMS Tools Knowledge Base server is running so you can back up and restore that repository.

The start and stop operations for a repository are persistent operations and are independent of the operation of the IMS Tools Knowledge Base server. If a repository is in the Start state and the IMS Tools Knowledge Base server is stopped temporarily, the repository is restored to the Start state when the server is restarted.

Procedure

To start or stop the repositories, complete the following steps:

1. Access the Administration menu from the IMS Tools Knowledge Base main menu panel.
   For example:

   ![Administration menu options](image)

2. Select option 3 (List Repositories). Press Enter.
   The Repositories panel is displayed.
   For example:

   ![Repositories panel](image)

   Normally you should see a listing for the Input, Output, and Registry repositories.
You can connect additional Output repositories to your information management environment. The Repositories panel list will show any additional Output repositories that you created.

The state of each repository is indicated in the **Stopped** column:

- If the value for **Stopped** is N, the repository is started.
- If the value for **Stopped** is Y, the repository is not started and is not available to applications in the IMS Tools Knowledge Base environment.

3. If the repository is currently not started (Stopped=Y), use the **Start** row action (S) to start the repository.

   The value for **Stopped** is immediately changed to N.

   **Note:** If the value does not change to N, or it changes to N and then Y, check the job log for repository allocation or open error messages.

4. If the repository is currently started (Stopped=N), use the **STOP** row action (P) to stop the repository.

   The value for **Stopped** is immediately changed to Y.
Starting and stopping repositories (batch)

The batch utility, FPQBATCH, can be used to place individual IMS Tools Knowledge Base repositories in a started or stopped state.

For example, you might want to stop a repository while the IMS Tools Knowledge Base server is running so you can back up or reorganize that repository.

The start and stop operations for a repository are persistent operations and are independent of the operation of the IMS Tools Knowledge Base server. If a repository is in the Start state and the IMS Tools Knowledge Base server is stopped temporarily, the repository is restored to the Start state when the server is restarted.

The FPQBATCH product batch utility is executed by the job HKTSTSTP. You can provide multiple STOP and or START requests in one job.

To use the FPQBATCH program to issue the START and STOP repository commands to the IMS Tools Knowledge Base server, complete the following procedure:

1. Use the sample HKTSTSTP job contained in this topic and modify the JCL appropriately for your environment and requirements.
   The value of the repository name consists of the product prefix (HKT_ or BSN_) followed by the full repository name (including the initial O). For example (standard Output repository):
   HKT_O0000000

2. Submit the job and ensure that it completes with a return code=0 (RC=0).
   A return code=0 from this utility indicates that the request was accepted and has begun processing.
   The START and STOP commands are processed synchronously, unless the seconds option in the MAXWAIT parameter is set to 0:
   MAXWAIT(0,xxxxxx)
   The START command should complete quickly unless repository recovery is required.
   The STOP command waits for active users of the repository to disconnect.

Parameter reference for the EXEC control statement

The following parameter is provided on the EXEC control statement of the HKTSTSTP job:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>XCFGROUP</td>
<td>Use the IMS Tools Knowledge Base server XCF group name for this value.</td>
</tr>
<tr>
<td></td>
<td>The name can be up to eight characters in length.</td>
</tr>
<tr>
<td></td>
<td>This parameter is required.</td>
</tr>
</tbody>
</table>
Syntax diagram for START repository command

The following syntax diagram shows the usage of the START repository command:

```
➤➤START—REPOSITORY(repository-name)[MAXWAIT(nnnn, IGNORE, CONTINUE, ABORT)]➤◄
```

Parameter reference for the START repository command

The START repository command causes the repository to enter into an available (or STARTed) state. This state is required for applications to access the data in the repository.

If the repository AUTOOPEN property is set to Y (yes), the repository data sets are also OPENed. Otherwise, the data sets are OPENed upon the first application request for data.

*Table 3. Parameters for START*

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>REPOSITORY</td>
<td>This required parameter specifies the name of the repository to be started.</td>
</tr>
</tbody>
</table>
Table 3. Parameters for START (continued)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
</table>
| MAXWAIT   | The START command makes an asynchronous request to the server. The MAXWAIT parameter controls how long the utility waits for completion of the command. MAXWAIT also controls the return code value that is set if the command does not complete in the specified time. The default specification is: MAXWAIT(5,IGNORE) Specify MAXWAIT(0,IGNORE) to not wait for the command to finish. Processing options: 

   nnnn The maximum number of seconds to wait for the command to complete. The time values can range from 0 - 9999. Processing resumes either immediately upon successful completion of the command or upon exceeding nnnn seconds, whichever is first. If AUTOOPEN=Y, processing waits for a state of OPENed. If AUTOOPEN=N, processing waits for a state of START. 

   IGNORE | CONTINUE | ABORT
Determines the return code to be set if the command does not complete within the requested timeframe. IGNORE does not set a return code. CONTINUE sets a return code of 4. ABORT sets a return code of 8 and terminates further command processing. These return codes can be check in your job control to determine the execution of subsequent steps. Examples:

   • Specify MAXWAIT(0,IGNORE) to not wait and not set a return code.
   • Specify MAXWAIT(5,CONTINUE) to wait up to 5 seconds and set return code 4 if the command does not complete in 5 seconds.
   • Specify MAXWAIT(20,ABORT) to wait up to 20 seconds, set return code 8, and terminate processing if the command does not complete in 20 seconds.

Syntax diagram for STOP repository command

The following syntax diagram shows the usage of the STOP repository command:
Parameter reference for the STOP repository command

The STOP repository command causes the repository to be closed and enter into an unavailable (or STOPPED) state.

This state prevents applications from accessing the data in the repository. This state is required to backup or reorganize the repository.

Table 4. Parameters for STOP

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>REPOSITORY</td>
<td>This required parameter specifies the name of the repository to be started.</td>
</tr>
<tr>
<td>MAXWAIT</td>
<td>The STOP command makes an asynchronous request to the server. The MAXWAIT parameter controls how long the utility waits for completion of the command. MAXWAIT also controls the return code value that is set if the command does not complete in the specified time.</td>
</tr>
</tbody>
</table>

The default specification is: MAXWAIT(5,IGNORE)

Specify MAXWAIT(0,IGNORE) to not wait for the command to finish.

Processing options:

- **nnnn** The maximum number of seconds to wait for the command to complete.
  - The time values can range from 0 - 9999.
  - Processing resumes either immediately upon successful completion of the command or upon exceeding **nnnn** seconds, whichever is first.

- **IGNORE** | **CONTINUE** | **ABORT**
  - **IGNORE** does not set a return code.
  - **CONTINUE** sets a return code of 4.
  - **ABORT** sets a return code of 8 and terminates further command processing.

These return codes can be checked in your job control to determine the execution of subsequent steps.

Examples:

- Specify MAXWAIT(0,IGNORE) to not wait and not set a return code.
- Specify MAXWAIT(5,CONTINUE) to wait up to 5 seconds and set return code 4 if the command does not complete in 5 seconds.
- Specify MAXWAIT(20,ABORT) to wait up to 20 seconds, set return code 8, and terminate processing if the command does not complete in 20 seconds.

Sample HKTSTSTP job

Copy the following sample HKTSTSTP job and modify the JCL appropriately for your environment and requirements.

```
//HKTSTSTP JOB (&SYSUID,020,090,IDIA), 'USER NAME', CLASS=A, TIME=10,
// REGION=0M, MSGCLASS=H, MSGLEVEL=(1,1), NOTIFY=&SYSUID
//* ---------------------------------------------------------------
```
DIRECTIONS

1. Change the job card to conform to your standards.
2. Change "HLQ1" to the high level qualifier for the IMS Tools Knowledge Base target libraries.
4. Change "SRVRNAME" to the server group name.

START OR STOP REPOSITORIES

Requests the server start or stop the repository. The request is completed asynchronously. A RC=0 from this step only means that the command was accepted and the requested function was initiated.

Example job STOP output

STOP REPOSITORY(HKT_00000000)
FPQ4750I STOP command processed successfully

Example server STOP output

FPQ2013I - Closing repository: HKT_00000000
FPQ2015I - Repository stopped: HKT_00000000
FPQ2017I - Repository closed: HKT_00000000

Example job START output

START REPOSITORY(HKT_00000000)
FPQ4750I START command processed successfully

Example server START output

FPQ2014I - Repository start request initiated: HKT_00000000
FPQ2012I - Opening repository: HKT_00000000
FPQ2016I - Repository opened: HKT_00000000
Setting the repository autoOPEN condition

You can set the autoOPEN condition for the IMS Tools Knowledge Base repositories.

About this task

The autoOPEN condition indicates whether the repository data sets are allocated and opened when the repository is started or when the repository is first accessed by a transaction.

When the autoOPEN condition is set to N, the IMS Tools Knowledge Base server startup can complete sooner.

The initial autoOPEN value for a repository is set when you first define (add) the repository to the IMS Tools Knowledge Base environment (using member HKTDFREP).

Procedure

To set the repository autoOPEN condition, complete the following steps:

1. Access the Administration menu from the IMS Tools Knowledge Base main menu panel.
   For example:

   ![Administration menu options](image)

   Figure 10. Administration menu options

2. Select option 3 (List Repositories). Press Enter.
   The Repositories panel is displayed.
   For example:

   ![Repositories panel](image)

   Figure 11. Repositories panel

   The autoOPEN condition for each repository is indicated in the Auto column:
• If the value for **Auto** is **Y**, the repository data sets are allocated when the IMS Tools Knowledge Base server is started.

• If the value for **Auto** is **N**, the repository data sets are allocated when the repository is first accessed by a transaction.

3. To change the autoOPEN condition for a repository, the repository must be in the STOPPED state. If it is started, first stop the repository using the **STOP** row action (P). Press Enter.
   
The value for **Stopped** is immediately changed to **Y**.

4. Use the **autoOPEN** row action (A) to change the setting for that repository. Press Enter.
   
The value for **Auto** is immediately changed.

5. Use the **Start** row action (S) to restart the repository. Press Enter.
   
The value for **Stopped** is immediately changed to **N**.
Setting the retention period for the Sensor Data repository

This section describes setting the data retention value (DAYS parameter in the INITSNSR control statement of HKTRJINT) through the administration user interface.

About this task

The data retention value specifies the minimum number of days that the Sensor Data repository retains sensor data and utility history data.

Sensor data is data collected by an IMS Tools product when it measures the condition (or state) of one or more databases. This sensor data is information captured at an instance in time that represents the condition, or state, of one or more databases. The data can be used for later analysis and policy evaluation.

Policies consist of a set of rules that each define threshold values for specific types of database conditions. The policy service mechanism evaluates these threshold values against the actual data values that an IMS Tools product collects and stores in the IMS Tools Knowledge Base Sensor Data repository.

The data is stored in the Sensor Data repository as records made up of data element values. The data record is stored in a well-understood and flexible format that allows its use years and multiple product releases later in time. The data and its format is understandable between products and releases to ensure reliable functionality.

Utility history data (job information and statistics) of some IMS Tools products are also stored in the Sensor Data repository.

You can control the length of time that data remains stored in the Sensor Data repository. When the Sensor Data repository is initially created, a default value is set for the DAYS parameter in the INITSNSR control statement of member HKTJRINT. You can modify this parameter at a later time using the Administration > Set retention for sensor data drop-down menu of the IMS Tools Knowledge Base report service user interface.

| Table 5. DAYS parameter in the INITSNSR control statement of member HKTJRINT |
|---------------------------------|---------------------------------|
| Parameter | Description |
| DAYS | The DAYS parameter specifies the minimum number of days that sensor data and utility history data is retained in the Sensor Data repository. This parameter is optional. The valid range of values is 1 - 32767. If the Sensor Data repository is being initialized for the first time, the default value of the DAYS parameter is 365. If initialization was completed previously and the DAYS parameter is not coded, the existing value is used to reset the retention period. To determine an appropriate value, consider the type and extent of analysis of sensor data you might want to perform. For instance, you might be interested in performing trend analysis or comparative analysis. |
Procedure

To set the retention days for data that is stored in the Sensor Data repository, complete the following steps:

1. Access the Administration menu from the IMS Tools Knowledge Base main menu panel.
   For example:

   ![Administration menu options](image1)

   **Figure 12. Administration menu options**

2. Select option 5 (Set retention for sensor data). Press Enter.
   The Set Retention Days for Sensor Data panel is displayed.
   For example:

   ![Commands Help](image2)

   **Figure 13. Set Retention Days for Sensor Data panel**

3. Type the new value for retention Days, and press Enter.
   The valid range of values is 1 - 32767.
Chapter 4. Implementing a new Output repository

You can add a new Output repository to support your IMS Tools Knowledge Base information management environment.

The initial installation of IMS Tools Knowledge Base provides a single Output repository (O0000000). All reports that are written to IMS Tools Knowledge Base are directed to this one set of VSAM data sets.

You might want to implement additional Output repositories to reduce the size of the standard Output repository or perhaps to reduce the frequency with which the standard Output repository requires reorganization.

Implementing an additional Output repository requires the following three procedures:

Topics:

• “Defining a new Output repository” on page 38
• “Connecting an additional Output repository” on page 41
• “Changing the repository specification” on page 44
• “Disconnecting an Output repository” on page 46
Defining a new Output repository

The first step to implementing a new Output repository is to define the new repository.

About this task

To define a new Output repository, you must define a set of four VSAM clusters by creating the appropriate control statements.

Procedure

To define a new Output repository, complete the following steps:

1. Copy member HKTDFREP in the hlq.SHKTSAMP data set.

2. Delete all of the statements that do not pertain to the four Output repository clusters. The four Output repository clusters include:
   
   O0000000.PRID
   O0000000.PRMD
   O0000000.SRID
   O0000000.SRMD

3. Change the string O0000000 to the new repository name.
   
   Repository names must be 8 characters long.
   
   Output repository names must start an O and the following characters must be numeric. For example: O1234567

4. Change the volume and cylinder statements.
   
   For more information, see the Defining (allocating) repository data sets topic in the IBM Tools Base for z/OS Configuration for IMS documentation.

5. Submit the job and ensure you get a return code=0.

Results

Granting access to the repository:

If you are using SAF security, you must grant the appropriate access to users.

For more information, see the Defining (allocating) repository data sets topic in the IBM Tools Base for z/OS Configuration for IMS documentation.

Example HKTDFREP JOB

The following example shows a modified version of HKTDFREP that rebuilds the Output repository:

```java
//HKTDFREP JOB (&SYSUID,020,090, IDIA),'USER NAME','CLASS=A,TIME=10,
// REGION=0M,MSGCLASS=H,MSGLEVEL=(1,1),NOTIFY=&SYSUID
//-------------------------------------------------------------------------
// IMS Tools Knowledge Base VERSION 1 RELEASE 2
// LICENSED MATERIALS - PROPERTY OF IBM
// 5655-V93 COPYRIGHT IBM CORPORATION 2007,2010
// ALL RIGHTS RESERVED.
// US GOVERNMENT USERS RESTRICTED RIGHTS -
// USE, DUPLICATION OR DISCLOSURE RESTRICTED
// BY GSA ADP SCHEDULE CONTRACT WITH IBM CORP.
//-------------------------------------------------------------------------
// DIRECTIONS:
// -----------
```
Chapter 4. Implementing a New Output Repository

/* CHANGE THE FOLLOWING; */
/* 1. JOB CARD TO CONFORM TO YOUR STANDARDS. */
/* 2. CHANGE "HLQ2" TO THE HIGH LEVEL QUALIFIER YOU WILL USE FOR */
/* REPOSITORY DATASETS. */
/* 3. CHANGE "SRVRNAME" TO THE NAME YOU WILL USE FOR THE IMS TOOLS */
/* KNOWLEDGE BASE SERVER. */
/* 4. CHANGE "VOLUM" TO THE VOLUME YOU WILL USE FOR THE */
/* PRIMARY REPOSITORY DATASETS */
/* 5. THE SPACE ALLOCATIONS DO NOT NEED ADJUSTMENT EXCEPT FOR */
/* THE OUTPUT REPOSITORY (00000000). THE SUPPLIED ALLOCATION */
/* WILL GET YOU STARTED BUT YOU WILL NEED TO INCREASE IT AS */
/* YOU ADD REPORTS. YOU WILL NEED APPROXIMATELY 1 CYLINDER */
/* PER 10K LINES OF REPORTS. THIS NUMBER VARIES DEPENDING */
/* UPON COMPRESSION ACHIEVED FOR THE REPORTS YOU STORE AND */
/* THE REORGANIZATION STATE OF THE DATASET. */

/***********************************************************/
/** ALLOCATE THE PRIMARY AND SECONDARY VSAM CLUSTERS FOR THE CATALOG */
/** REPOSITORY, THE REGISTRY REPOSITORY, THE INPUT REPOSITORY, */
/** AND THE OUTPUT REPOSITORY. EACH DATASET PAIR HAS A REPOSITORY */
/** INDEX DATA (RID) AND A REPOSITORY MEMBER DATA (RMD). */
/***********************************************************/

ALLOCATE EXEC PGM=IDCAMS
SYSPRINT DD SYSOUT=*  
SYSIN  DD *
/*---------------------------------------------*/
/* IDCAMS DEFINE FOR THE PRIMARY & SECONDARY CATALOG REPOSITORY */
/* THE REPOSITORIES MUST BE KSDS(INDEXED) CLUSTERS. */
/* CHANGE THE NAME STATEMENTS TO CONFORM TO YOUR STANDARDS */
/* SUGGESTIONS FOR CLUSTER NAMES; */
/* HLQ2.SRVRNAME.REPOS-TYP.PRMD PRIMARY REPOS.INDEX DATA */
/* HLQ2.SRVRNAME.REPOS-TYP.PRID PRIMARY REPOS.MEMBER DATA */
/* HLQ2.SRVRNAME.REPOS-TYP.SRID SECONDARY REPOS.INDEX DATA */
/* HLQ2.SRVRNAME.REPOS-TYP.SRMD SECONDARY REPOS.MEMBER DATA */
/* | | | +---+ RID=INDEX DATA, RMD=MEMBER DATA */
/* | | | +---+ P=PRIMARY, S=SECONDARY */
/* | | | +---+ REPOSITORY TYPE=CATALOG, REGISTRY, */
/* | | | +---+ SERVER NAME INPUT, 00000000 */
/* | +---+ HIGH LEVEL QUALIFIER */
/*---------------------------------------------*/
/* DELETE EXISTING REPOSITORIES BEFORE RE-DEFINING */
DELETE HLQ2.SRVRNAME.00000001.PRMD CLUSTER
DELETE HLQ2.SRVRNAME.00000001.SRID CLUSTER
DELETE HLQ2.SRVRNAME.00000001.PRMD CLUSTER
DELETE HLQ2.SRVRNAME.00000001.SRMD CLUSTER
SET MAXCC = 0  /* RESET CC IF DELETE RETURNED A CC > 0 */

/* DEFINE FOR PRIMARY OUT REP. RID (INDEX) CLUSTER REPOSITORY */
DEFINE CLUSTER(NAME( HLQ2.SRVRNAME.00000001.PRMD ) )  
  VOL(VOLUM1) /*USER MUST CHANGE*/  
  REUSE  
  INDEXED  
  KEYS(128 0)  
  CYLINDERS(10 10) /*USER MUST CALCULATE*/  
  SHAREOPTIONS(2 3)  
  FREESPACE (10 10)  
  RECORDSIZE (256 256)  
  CONTROLINTERVALSIZE (8192)  
  )  
  INDEX (NAME( HLQ2.SRVRNAME.00000001.PRMD.INDEX ) )  
  DATA (NAME( HLQ2.SRVRNAME.00000001.PRMD.DATA ) )

/* DEFINE FOR SECONDARY OUT REP. RID (INDEX) CLUSTER REPOSITORY */
DEFINE CLUSTER(NAME( HLQ2.SRVRNAME.00000001.SRID ) )  
  VOL(VOLUM2) /*USER MUST CHANGE*/  
  /*USER MUST CHANGE*/
/* MATCH VALUE FOR PRID */
SHAREOPTIONS (2 3)
FREESPACE (10 10)
RECORDSIZE (256 256)
CONTROLINTERVALSIZE (8192)
)
)
INDEX (NAME( HLQ2.SRVRNAME.00000001.SRID.INDEX ) )
DATA (NAME( HLQ2.SRVRNAME.00000001.SRID.DATA ) )

/* DEFINE FOR PRIMARY OUT REP. RMD (MEMBER) CLUSTER REPOSITORY */
DEFINE CLUSTER (NAME( HLQ2.SRVRNAME.00000001.PRMD ) )
VOL(VOLUM1) /* USER MUST CHANGE */
REUSE
INDEXED
KEYS(12 0)
CYLINDERS(50 50) /* USER MUST CALCULATE */
SHAREOPTIONS (2 3)
FREESPACE(00 20)
RECORDSIZE (8185 8185)
CONTROLINTERVALSIZE (8192)
)
)
INDEX (NAME( HLQ2.SRVRNAME.00000001.PRMD.INDEX ) )
DATA (NAME( HLQ2.SRVRNAME.00000001.PRMD.DATA ) )

/* DEFINE FOR SECONDARY OUT REP. RMD (MEMBER) CLUSTER REPOSITORY */
DEFINE CLUSTER (NAME( HLQ2.SRVRNAME.00000001.SRMD ) )
VOL(VOLUM2) /* USER MUST CHANGE */
REUSE
INDEXED
KEYS(12 0)
CYLINDERS(50 50) /* MATCH VALUE FOR PRMD */
SHAREOPTIONS (2 3)
FREESPACE(00 20)
RECORDSIZE (8185 8185)
CONTROLINTERVALSIZE (8192)
)
)
INDEX (NAME( HLQ2.SRVRNAME.00000001.SRMD.INDEX ) )
DATA (NAME( HLQ2.SRVRNAME.00000001.SRMD.DATA ) )
Connecting an additional Output repository

The second step to implementing a new Output repository is to connect the repository to the IMS Tools Knowledge Base information management environment.

About this task

An Output repository must be defined to the IMS Tools Knowledge Base environment before you can perform the connect procedure.

If the VSAM cluster data sets are not pre-allocated for this new repository, the Start repository row action (S) will fail.

Procedure

To connect an additional Output repository, complete the following steps:

1. Access the Administration menu from the IMS Tools Knowledge Base main menu panel.
   
   For example:

   ![Administration menu options](image)

   **Figure 14. Administration menu options**

   2. Select option 3 (List Repositories). Press Enter.
   
   The Repositories panel is displayed.
   
   For example:

   ![Repositories panel](image)

   **Figure 15. Repositories panel**

   3. From the Commands menu, select option 1 (Connect Output repository).
   
   For example:
4. Press Enter.
   The Connect Repository panel is displayed:

```
| 1 1. Connect Output repository |
```

5. Enter the appropriate values for the new Output repository as described in the following table:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>The name of the Output repository. Names must be eight characters long.</td>
</tr>
<tr>
<td></td>
<td>Output repository names must start an O and the following characters must</td>
</tr>
<tr>
<td></td>
<td>be numeric. For example: O1234567</td>
</tr>
<tr>
<td>Type</td>
<td>Defaults to OUTPUT.</td>
</tr>
<tr>
<td>Auto</td>
<td>Whether the repository is started when the IMS Tools Knowledge Base server</td>
</tr>
<tr>
<td></td>
<td>is started (Y) or upon the first reference to the repository (N).</td>
</tr>
<tr>
<td>Data Set Names</td>
<td>The name of the four data sets you created for this repository. These data</td>
</tr>
<tr>
<td></td>
<td>set names must not duplicate any other repository data set names.</td>
</tr>
</tbody>
</table>

6. Press Enter.
   The Connect Repository panel is refreshed with no values showing.

7. Press End (PF3).
   The Repositories panel is displayed with the newly connected Output repository listed.

8. Use the **Start** row action (S) to start the new repository.
   The value for **Stopped** is immediately changed to N.
Note: If the value does not change to N, or it changes to N and then Y, check the job log for repository allocation or open error messages.
Changing the repository specification

The third step to implementing a new Output repository is to change the repository specification in one or more registered products.

About this task

When products are registered to , by default, the standard Output repository (O0000000) is designated. All reports for this product are written to this standard Output repository.

You can change the Output repository designation for any product to the newly defined repository. Once the repository designation is changed, all reports for that product from that point forward will be written to the new repository.

Procedure

To change the repository specification in one or more products, complete the following steps:

1. Access the Administration menu from the main menu panel.
   For example:

   ![Administration menu options](Figure 18. Administration menu options)

   The Installed Products List panel is displayed.
   For example:

   ![Installed Products List panel](Figure 19. Installed Products List panel)

3. Use the Subscriptions (Subs) List row action (S) for the appropriate product to list all report subscriptions defined to the product. Press Enter.
   The Report Subscription List panel is displayed.
For example:

<table>
<thead>
<tr>
<th>Act</th>
<th>Report Title</th>
<th>Days</th>
<th>Versions</th>
<th>Default</th>
<th>Record</th>
<th>Repository</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>PRODUCT DEFAULTS</strong></td>
<td>5</td>
<td>1</td>
<td>Y</td>
<td>Y</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>PC-HISAM DATA SET STAT</td>
<td>5</td>
<td>1</td>
<td>Y</td>
<td>Y</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>PC-RUN TIME OPTION</td>
<td>5</td>
<td>1</td>
<td>Y</td>
<td>Y</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>PC-BIT MAP DISPLAY</td>
<td>5</td>
<td>1</td>
<td>Y</td>
<td>Y</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>PC-DB RECORD DIST</td>
<td>5</td>
<td>1</td>
<td>Y</td>
<td>Y</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>PC-DB STAT</td>
<td>5</td>
<td>1</td>
<td>Y</td>
<td>Y</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Figure 20. Report Subscriptions List panel

The first row contains the product defaults for report retention, report recording, and the designated Output repository for storing reports.

4. Use the **Update** row action (U) on the PRODUCT DEFAULTS row and replace the standard repository name (O0000000) with the newly defined repository. Press Enter.
Disconnecting an Output repository

The disconnect repository operation is rarely required and is available to support the management of multiple Output repositories.

**About this task**

Disconnecting an Output repository removes knowledge of the existence of that repository from the IMS Tools Knowledge Base server. The repository is no longer available for storing reports. The repository itself is not deleted and can be reconnected.

You should never disconnect the Input and Registry repositories.

**Procedure**

To disconnect an Output repository, complete the following steps:

1. Access the Administration menu from the IMS Tools Knowledge Base main menu panel.
   
   For example:

   ![Administration menu options](image)

   **Figure 21. Administration menu options**

2. Select option 3 (List Repositories). Press Enter.
   
   The Repositories panel is displayed.
   
   For example (2 Output repositories are listed):

   ![Repositories panel](image)

   **Figure 22. Repositories panel**

   Normally you should see a listing for the Input, Output, and Registry repositories.
   
   You can connect additional Output repositories to your information management environment. The Repositories panel list will show any additional Output repositories that you created.
3. Use the **Disconnect** row action (D) to disconnect the appropriate Output repository. Press Enter.
   
   A Confirmation message is displayed.
   
   For example:

   ![Confirmation message](image)

   **Figure 23. Confirmation message**

4. To disconnect the repository, enter Y and press Enter.
   
   The Repositories panel is refreshed and the disconnected repository is no longer listed.
Chapter 5. Maintaining repository data sets

The IMS Tools Knowledge Base repositories are designed to be fault tolerant.

Each repository is implemented with four data sets, two primary and two secondary:

- Primary Repository Index (RID)
- Primary Repository Member Data (RMD)
- Secondary Repository Index (RID)
- Secondary Repository Member Data (RMD)

During normal repository operation, updates are made to the primary set of data sets first. Only after the updates are committed are the same updates applied to the secondary set of data sets. A failure of one set of data sets can always be recovered from the other set.

You can decrease the possibility of a complete loss of data by placing the primary and secondary data sets on separate devices. A failure of one set of data sets can always be automatically recovered from the other set.

Topics:

- “Backing up repository data sets” on page 50
- “Recovering repository data sets” on page 53
- “Reorganizing repository data sets” on page 56
- “Resizing repository data sets” on page 58
Backing up repository data sets

The purpose of backing up a repository is to allow you to recover data in the event that the repository suffers a logical failure or if there is a physical loss of both the primary and secondary repository data sets.

Repository backup process

You can use any backup utility of your choosing to back up the repository data sets. The repository must be stopped or the server must be down while you are performing the backup to ensure a valid copy is made.

You should always copy all four data sets for each repository (the two primary data sets and the two secondary data sets). If you back up only the primary or only the secondary data sets and not both, it is possible that you are backing up a data set in an error state.

Once the data set is backed up you can restart the repository or server.

The following example job uses the REPRO utility to back up repositories. Member HKTBKUP can be found in the hlq.SHKT Samp library file.

```bash
//HKTBKUP JOB
//* -----------------------------------------------
//* IMS Tools Knowledge Base VERSION 1 RELEASE 2
//* LICENSED MATERIALS - PROPERTY OF IBM
//* 5655-V93 COPYRIGHT IBM CORPORATION 2007, 2010
//* ALL RIGHTS RESERVED.
//* US GOVERNMENT USERS RESTRICTED RIGHTS -
//* USE, DUPLICATION OR DISCLOSURE RESTRICTED
//* BY GSA ADP SCHEDULE CONTRACT WITH IBM CORP.
//* -----------------------------------------------
// DIRECTIONS
//* 1) CHANGE THE JOB CARD TO YOUR STANDARDS.
//* 2) CHANGE:
//* SERVER NAME "SRVRNAME"
//* STEPLIB "HLQ1.SHKTLOAD"
//* REPOSITORY NAME "HKT ????????"
//* REPOSITORY DATASET "HLQ2.SERVER.REPOSIT"
//* BACKUP DATASET NAMES "HLQ3.BACKUP.SERVER.REPOSIT"
//* BACKUP DATASET UNIT "SYSALLDA"
//* BACKUP DATASET VOLUME "VOLUM1"
//* BACKUP DATASET SPACE "(CYL,(1,1))"
//* -----------------------------------------------
//* BACKUP THE ITKB REPOSITORIES
//* -----------------------------------------------
//* THE BACKUPS OF THE REPOSITORY PAIR (RID,RMD) MUST BE TAKEN TOGETHER.
//* YOU MUST STOP THE REPOSITORY BEFORE TAKING THE BACKUPS.
//* IF THE BACKUP IS FOR THE CATALOG REPOSITORY, THEN THE SERVER MUST BE STOPPED BEFORE BACKING UP.
//* ISSUE 'F <JOBNAME>,SHUTDOWN ALL' COMMAND TO STOP ALL SERVERS
//* -----------------------------------------------
// STOP THE REPOSITORY
//* -----------------------------------------------
// STOP EXEC PGM=FPQBATCH,PARM='XCFGROUP=SRVRNAME' XCF GROUP NAME
// STEPLIB DD DISP=SHR,DSN=HLQ1.SHKTLOAD
// SYSPRINT DD SYSOUT**
// SYSIN DD *
// STOP REPOSITORY(HKT ????????) MAXWAIT(120,CONTINUE)
//* -----------------------------------------------
//* BACKUP THE REPOSITORY
```
/* REPRO EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=* \
//BAKUPRID DD DSN=HLQ3.BACKUP.SERVER.REPOSIT.PRID, \
// DISP=(NEW,CATLG),DCB=BLKSIZE=24576, \
// UNIT=SYSLDA, VOL=SER=VOLUM1, ** USER MUST CHANGE ** \
// SPACE=(CYL,(1,1)) ** CHANGE TO SIZE NECESSARY ** \
//BAKUPRMD DD DSN=HLQ3.BACKUP.SERVER.REPOSIT.PRMD, \
// DISP=(NEW,CATLG),DCB=BLKSIZE=24576, \
// UNIT=SYSLDA, VOL=SER=VOLUM1, ** USER MUST CHANGE ** \
// SPACE=(CYL,(10,10)) ** CHANGE TO SIZE NECESSARY ** \
//BAKUSRID DD DSN=HLQ3.BACKUP.SERVER.REPOSIT.SRID, \
// DISP=(NEW,CATLG),DCB=BLKSIZE=24576, \
// UNIT=SYSLDA, VOL=SER=VOLUM1, ** USER MUST CHANGE ** \
// SPACE=(CYL,(1,1)) ** CHANGE TO SIZE NECESSARY ** \
//BAKUSRMD DD DSN=HLQ3.BACKUP.SERVER.REPOSIT.SRMD, \
// DISP=(NEW,CATLG),DCB=BLKSIZE=24576, \
// UNIT=SYSLDA, VOL=SER=VOLUM1, ** USER MUST CHANGE ** \
// SPACE=(CYL,(10,10)) ** CHANGE TO SIZE NECESSARY ** \
//SYSIN DD * \
/* BACKUP THE PRID (INDEX DATA) OF THE STOPPED REPOSITORY */ \nREPRO IN DATASET(HLQ2.SERVER.REPOSIT.PRID) - \n OUTFILE(BAKUPRID) \
/* BACKUP THE PRMD (MEMBER DATA) OF THE STOPPED REPOSITORY */ \nREPRO IN DATASET(HLQ2.SERVER.REPOSIT.PRMD) - \n OUTFILE(BAKUPRMD) \
/* BACKUP THE SRID (INDEX DATA) OF THE STOPPED REPOSITORY */ \nREPRO IN DATASET(HLQ2.SERVER.REPOSIT.SRID) - \n OUTFILE(BAKUSRID) \
/* BACKUP THE SRMD (MEMBER DATA) OF THE STOPPED REPOSITORY */ \nREPRO IN DATASET(HLQ2.SERVER.REPOSIT.SRMD) - \n OUTFILE(BAKUSRMD) \
/* START THE REPOSITORY \
/* START EXEC PGM=FPQBATCH,PARM='XCFGROUP=SRVRNAME' XCF GROUP NAME \
/STEPLIB DD DISP=SHR,DSN=HLQ1.SHTLOAD \
//SYSPRINT DD SYSOUT=* \
//SYSIN DD * \
START REPOSITORY(HKT_????????) MAXWAIT(5,CONTINUE) \
*/

** Determining the frequency of backing up repositories **

Each of the IMS Tools Knowledge Base repositories have their own characteristics and purpose. The following information discusses the difference in backup needs among the repositories:

**Catalog repository**

The only non-recoverable information recorded in the Catalog repository is the definitions of the other repositories. The Catalog repository is updated frequently to reflect the current state of the repositories. However, a loss of this information is not significant.

Ensure that you back up the repository after any product configuration and after adding more Output repositories. Otherwise, only occasional backups are necessary.

**Input repository**

The Input repository is updated with information about your environment (such as RECON environment definitions) and Policy Services data (policies, rules, directory entries, and notification lists).
Weekly backups of this repository are probably sufficient. For best results, coordinate Input repository backups with Registry repository backups.

**Registry repository**

The Registry repository is updated whenever you register products or change product options using the ISPF Administration menu options.

Weekly backups of this repository are sufficient. For best results, coordinate Registry repository backups with Input repository backups.

**Output repository**

The Output repository is updated whenever a report is recorded.

Weekly backups of this repository are probably sufficient. Always consider the importance of reports you are storing when deciding on the frequency of backups for this repository.

**Sensor Data repository**

The Sensor Data repository is updated whenever statistics (sensor data) are recorded.

Weekly backups of this repository are probably sufficient.

**Autonomics Director repository**

The Autonomics Director repository is updated whenever information is added or changed for monitored databases, user groups, period definitions, evaluations, and database reorganizations.

Weekly backups of this repository are recommended, and additionally after any major changes to the monitor list, user groups, and period definitions.
Recovering repository data sets

Performing a repository recovery from your backup data sets should be a rare occurrence.

Considerations for recovering a repository

The probable reasons for requiring the recovery of a repository from backups are catastrophic hardware failure or accidental deletion of both the primary and secondary repository data sets.

In other cases, it is possible that the repository can be recovered automatically by the server without any loss of data. For example, if a device failure occurs during the update process, the repository is marked in error and is stopped. In this situation, the following message is issued:

FPQ00271 - Error during phase n of the repository update process

Correct whatever immediate problem is reported on the IMS Tools Knowledge Base server job log and restart the repository using the Start row action from the List Repositories option of the ISPF Administration menu.

If the update of the primary data sets fails, restarting the repository will automatically recover the primary data sets by copying the data from the secondary data sets. Only the unit-of-work that was being written at the time of the failure is lost.

If the update to the secondary data sets fails, restarting the repository will automatically recover the secondary data sets by copying the data from the primary data sets. There will be no data loss.

Observe the server messages and determine if recovery from your backup data sets is required.

Note: If the error is an out-of-space condition, you should reorganize the data sets and add space rather than simply restoring the repository. In this case, consider making use of SMS space management capabilities.

Repository recovery process

Repository recovery is performed from your last backups. Use the appropriate utility for the backup method you used.

If you are relocating the data sets, ensure that the primary and secondary data sets are on separate devices.

Once the data set is recovered you can start the repository.

The following example job uses the REPRO utility to recover a repository from the backup copy. Member HKTREORG can be found in hlq.SHKTSAMP.

```
//HKTREORG JOB
//**  5655-V93 COPYRIGHT IBM CORPORATION 2007, 2010
//**  ALL RIGHTS RESERVED.
//**  USE, DUPLICATION OR DISCLOSURE RESTRICTED
```
BY GSA ADP SCHEDULE CONTRACT WITH IBM CORP.

---

DIRECTIONS
---

1) CHANGE THE JOB CARD TO YOUR STANDARDS.

2) CHANGE:

   SERVER NAME   "SRVRNAME"
   STEPLIB      "HLQ1.SHKTLOAD"
   REPOSITORY NAME "HKT ????????
   REPOSITORY DATASET "HLQ2.SERVER.REPOSIT"
   BACKUP DATASET NAMES "HLQ3.BACKUP.SERVER.REPOSIT"

---

REORG/RESTORE THE ITKB REPOSITORIES
---

THE REORG/RESTORE OF A REPOSITORY PAIR (RID,RMD) MUST BE DONE
AS A SET USING THEIR MATCHING BACKUPS.

IF YOU ARE PERFORMING A REORG:
- USE THE STOP AND BACKUP STEPS FROM HKTBAKUP TO STOP THE
  REPOSITORY AND CREATE THE BACKUP DATASETS.
- RUN THE REPRO AND START STEPS FROM THIS JOB TO RELOAD/REORGANIZE
  THE REPOSITORY DATASETS AND START THE REPOSITORY.

IF THE REORG IS FOR THE CATALOG REPOSITORY, THEN THE SERVER
MUST BE STOPPED BEFORE REORGANIZING.

ISSUE 'F <JOBNAME>,SHUTDOWN All' COMMAND TO STOP ALL SERVERS
IF YOU ARE RESTORING A REPOSITORY FROM A BACKUP:
- ENSURE THE REPOSITORY IS IN A STOPPED STATE.
- RUN THE REPRO AND START STEPS FROM THIS JOB TO LOAD
  THE REPOSITORY DATASETS AND START THE REPOSITORY.

---

REORG/RESTORE REPOSITORY DATASETS
---

REORG EXEC PGM=IDCAM5
SYSPRINT DD SYSOUT=
BAKUPRID DD DSN=HLQ3.BACKUP.SERVER.REPOSIT.PRID,
  DISP=OLD
BAKUPRMD DD DSN=HLQ3.BACKUP.SERVER.REPOSIT.PRMD,
  DISP=OLD
BAKUSRID DD DSN=HLQ3.BACKUP.SERVER.REPOSIT.SRID,
  DISP=OLD
BAKUSRMD DD DSN=HLQ3.BACKUP.SERVER.REPOSIT.SRMD,
  DISP=OLD
OUTPRID DD DSN=HLQ2.SERVER.REPOSIT.PRID,DISP=OLD PRIMARY INDEX
OUTPRMD DD DSN=HLQ2.SERVER.REPOSIT.PRMD,DISP=OLD PRIMARY MEMBER
OUTSRID DD DSN=HLQ2.SERVER.REPOSIT.SRMD,DISP=OLD SECOND INDEX
OUTSRMD DD DSN=HLQ2.SERVER.REPOSIT.SRMD,DISP=OLD SECOND MEMBER
SYSSIN DD *
/* REORG/RESTORE PRIMARY RID(INDEX DATA) OF THE STOPPED REPOSITORY*/
   REPRO INFILE(BAKUPRID) -
   OUTFILE(OUTPRID) REUSE
   /* REORG/RESTORE PRIMARY RMD(MEMBER DATA) OF THE STOPPED REPOSITORY*/
   REPRO INFILE(BAKUPRMD) -
   OUTFILE(OUTPRMD) REUSE
   /* REORG/RESTORE SECOND. RID(INDEX DATA) OF THE STOPPED REPOSITORY*/
   REPRO INFILE(BAKUSRID) -
   OUTFILE(OUTSRID) REUSE
   /* REORG/RESTORE SECOND. RMD(MEMBER DATA) OF THE STOPPED REPOSITORY*/
   REPRO INFILE(BAKUSRMD) -
   OUTFILE(OUTSRMD) REUSE
/*

---

START THE REPOSITORY
---

START EXEC PGM=FPQBATCH,PARM='XCFGROUP=SRVRNAME' XCF GROUP NAME
Chapter 5. Maintaining repository data sets
Reorganizing repository data sets

Repositories should be reorganized as needed to reclaim space and improve data clustering.

Considerations for reorganizing a repository

Consider the following information about repositories when you determining the need for reorganizing the repository data sets:

- The Catalog and Registry repositories rarely require reorganization.
- The Output repositories might need frequent reorganization depending upon the rate at which you are recording reports.
- The Input repository might require reorganization after changes are made to Policy Services data (policies, rules, directory entries, notification lists).
- The Sensor Data repository might need frequent reorganization depending upon the rate at which you are recording statistics (sensor data).

When the usage of IMS Tools Knowledge Base grows (for example, the addition of more enabled products), you might also have to expand the size of the repositories.

Repository reorganization process

The repository must be stopped or the server must be down while you reorganize the repository to ensure a valid copy is made.

You must first reorganize all four of the repository data sets to a sequential dataset and then restore them back to the VSAM clusters.

Once the data set is reorganized you can restart the repository or server.

Refer to the previous backup example for the job to reorganize and restore the repositories to a sequential data set.

The following job resets the VSAM data sets and copies the data from the sequential files. Member HKTREORG can be found in hlq.SHKTSAMP.

```plaintext
//HKTREORG JOB
//** -----------------------------------
//** THE REORG/RESTORE OF A REPOSITORY PAIR (RID,RMD) MUST BE DONE
//** AS A SET USING THEIR MATCHING BACKUPS.
```

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IF YOU ARE PERFORMING A REORG:
- USE THE STOP AND BACKUP STEPS FROM HKTBACKUP TO STOP THE
  REPOSITORY AND CREATE THE BACKUP DATASETS.
- RUN THE REPRO AND START STEPS FROM THIS JOB TO RELOAD/REORGANIZE
  THE REPOSITORY DATASETS AND START THE REPOSITORY.
IF THE REORG IS FOR THE CATALOG REPOSITORY, THEN THE SERVER
MUST BE STOPPED BEFORE REORGANIZING.
ISSUE 'F <JOBNAME>,SHUTDOWN ALL' COMMAND TO STOP ALL SERVERS
IF YOU ARE RESTORING A REPOSITORY FROM A BACKUP:
- ENSURE THE REPOSITORY IS IN A STOPPED STATE.
- RUN THE REPRO AND START STEPS FROM THIS JOB TO RELOAD
  THE REPOSITORY DATASETS AND START THE REPOSITORY.
----------------------------------------------------------------
REORG/RESTORE REPOSITORY DATASETS
----------------------------------------------------------------
/* REORG EXEC PGM=IDCAMS
SYSPRINT DD SYSLIB
BAKUPRMD DD DSN=HLQ3.BACKUP.SERVER.REPOSIT.PRMD, DISP=OLD
BAKUSRMD DD DSN=HLQ3.BACKUP.SERVER.REPOSIT.SRMD, DISP=OLD
OUTPRID DD DSN=HLQ2.SERVER.REPOSIT.PRID,DISP=OLD PRIMARY INDEX
OUTPRMD DD DSN=HLQ2.SERVER.REPOSIT.PRMD,DISP=OLD PRIMARY MEMBER
OUTSRID DD DSN=HLQ2.SERVER.REPOSIT.SRMD,DISP=OLD SECOND INDEX
OUTSRMD DD DSN=HLQ2.SERVER.REPOSIT.SRMD,DISP=OLD SECOND MEMBER
SYSLIB DD *
REPRO INFILE(BAKUPRMD) -
REPRO INFILE(BAKUSRMD) -
REPRO INFILE(BAKUSRMD) -
REPRO INFILE(BAKUSRMD) -
START THE REPOSITORY
----------------------------------------------------------------
*/
Resizing repository data sets

The repository data sets are VSAM data sets and can be resized to accommodate the growth of the stored data.

Refer to the Sizing the IMS Tools KB repositories topic in the IBM Tools Base for z/OS Configuration for IMS documentation for the specific repository that needs resizing.

Once you have determined the new size requirements, change the cluster definitions in HKTDREP.

Then perform the following procedures:

1. Stop the repository.
   “Starting and stopping repositories (ISPF)” on page 26
2. Unload the repository data set using your preferred method.
3. Delete the repository data set and define new clusters using the new sizes.
   Use a modified copy of HKTDREP that only deletes and defines the four clusters for the repository you are changing.
4. Reload the repository data set using your preferred method.
5. Start the repository.
   “Starting and stopping repositories (ISPF)” on page 26

Note: It is important that you use a utility (such as REPRO) that unloads and reloads the data at a record level. Refer to job HKTBAKUP to unload and job HKTREORG to reload.
Chapter 6. IMS Tools Knowledge Base server commands

IMS Tools Knowledge Base server commands are provided for repository administration tasks.

Server operator commands

The Service Repository operator commands are invoked via the MVS™ F (MODIFY) command.

The general syntax is:

```
server_job_name,command parameter
```

The following commands are used.

ADMIN

Performs repository administration for a selected subset of the administration tasks.

```
F—server_job_name—ADMIN
```

repository_name

The name of the repository that contains the data sets to change, display, start, or stop. You cannot use CATALOG because this name is reserved.

The name of the repository is defined when you add the repositories to the IMS Tools Knowledge Base server.

S | D

The DSCHANGE action that is applied to the repository data sets specified in the RDS parameter:

```
S Request a SPARE action for a RDS pair.
D Request a DISCARD action for a RDS pair.
```

1 | 2 | 3

A number between 1 - 3 that indicates the Repository Data Set (RDS) pair that the requested DSCHANGE action is applied to.

DSCHANGE

Changes the status of an RDS pair to either DISCARD or SPARE.
• If you run DISCARD against either COPY1 or COPY2, the repository must be stopped. Only use DISCARD with COPY1 or COPY2 to remove them from your system.

• If you run DISCARD against a SPARE RDS, it is not necessary for the repository to be stopped.

• The SPARE can only be run against a DISCARD data set pair where both of the data sets are empty.

Use this command sparingly.

Usage example:

In this example, there is a failure for the primary output repository data set COPY1 (HKT_O0000000). The system stopped the primary output repository data set COPY1, and copied the secondary output data set COPY2 to the SPARE output data set COPY3.

The ADMIN command DSCHANGE option is used to request that the output repository data set COPY1 (HKT_O0000000) is changed to DISCARD. The output data set COPY1 is changed to DISCARD because it is no longer available as the primary output repository data set. By changing to DISCARD, this allows a new output repository data set COPY1 to be allocated as the new SPARE.

Command input:
F PS13SRVJ,ADMIN DSCHANGE(HKT_O0000000,D,1)

Command output:
BPE0032I ADMIN COMMAND COMPLETED FPQ
FPQ0037I - RDS1 status has been changed to DISCARD.
Repository....: HKT_O0000000 FPQ

The ADMIN command DSCHANGE option requests that a output repository data set COPY1 (HKT_O0000000) is added as a new output repository data set COPY1 (HKT_O0000000).

Command input:
F PS13SRVJ,ADMIN DSCHANGE(HKT_O0000000,S,1)

Command output:
BPE0032I ADMIN COMMAND COMPLETED FPQ
FPQ0037I - RDS1 status has been changed to SPARE.
Repository....: HKT_O0000000 FPQ

DISPLAY/DIS
Lists all repositories defined in the catalog (similar to the LIST batch administration command).

Lists the details of a specified repository (similar to the LIST REPOSITORY batch administration command).

Usage example:

The ADMIN command DISPLAY option with and without () is issued to display all of the repositories defined in the catalog which are available to the server and the IMS tools associated with the repository server.

Command input:
F PS13SRVJ,ADMIN DISPLAY

or

F PS13SRVJ,ADMIN DISPLAY()

Command output:

Command input:

F PS13SRVJ,ADMIN DISPLAY(HKT_INPUT)

Command output:

START/STA

Start a repository.

Usage example:

The ADMIN command using option START and including the HKT_INPUT repository name displays when the selected repository has been started. This command is useful if the requested repository data set has not been started previously.

Command input:

F PS13SRVJ,ADMIN START(HKT_INPUT)

Command output:

STOP/STO

Stop a repository.

Usage example:

The ADMIN command using option STOP and including the HKT_INPUT repository name displays that the selected repository has been stopped. If you STOP a repository data set it causes errors to any client attempting to retrieve or put data into that repository. Be very careful when stopping repository data sets.

Command input:

F PS13SRVJ,ADMIN STOP(HKT_INPUT)
AUDIT

Dynamically change the auditing level from that set in the AUDIT_LEVEL configuration parameter.

►►F—server_job_name—AUDIT—LEVEL—LEV—(NONE)◄◄

LEVEL/LVL

Determines whether audit records are written to the log.

Usage example:

The AUDIT command using option LEVEL and including parameter NONE, means that the audit records are not written to the log.

Command input:
F PS13SRVJ,AUDIT LEVEL(NONE)

Command output:
FPQ2103I - Audit level changed from HIGH to NONE FPQ
BPE0032I AUDIT COMMAND COMPLETED FPQ

or

FPQ2104I - Audit level unchanged from NONE FPQ
BPE0032I AUDIT COMMAND COMPLETED FPQ

The AUDIT command using option LEVEL and including parameter HIGH, means that the audit records are written to the log.

Command input:
F PS13SRVJ,AUDIT LEVEL(HIGH)

Command output:
BPE0032I AUDIT COMMAND COMPLETED FPQ
FPQ2103I - Audit level changed from NONE to HIGH FPQ

or

FPQ2104I - Audit level unchanged from HIGH FPQ
BPE0032I AUDIT COMMAND COMPLETED FPQ

NONE

Audit records are not written.

HIGH

Audit records are written.

RESTART

Resume audit logging after logging was suspended due to an outstanding error while connecting to or writing to the log stream.

Usage example:

The AUDIT command using option RESTART resumes audit logging after logging was suspended due to an outstanding error while connecting to or writing to the log stream.
Command input:
F PS13SRVJ,AUDIT RESTART

Command output:
BPE0032I AUDIT RESTART COMMAND COMPLETED FPQ
FPQ2032I - Audit logging resumed FPQ

**DUMPSTATS**
Print repository server statistics to DD FPQPRINT.

```
F server_job_name DUMPSTATS NORESET
```

**RESET**
Reset the statistics counts to zero as they are externalized.

*Usage example:*
The DUMPSTATS command with option RESET prints repository server statistics to the DD FPQPRINT data set. The statistics counts are reset to zero.

Command input:
F PS13SRVJ,DUMPSTATS RESET

Command output:
BPE0032I DUMPSTATS RESET COMMAND COMPLETED FPQ

**NORESET**
Leave the count values as is.

*Usage example:*
The DUMPSTATS command prints repository server statistics to the DD FPQPRINT data set. The statistic counts are not reset to zero.

Command input:
F PS13SRVJ,DUMPSTATS

Command output:
BPE0032I DUMPSTATS COMMAND COMPLETED FPQ

**DUMPTRACE**
Print dump diagnostics to DD FPQPRINT.

```
F server_job_name DUMPTRACE
```

For more information, see Chapter 20, “BPE diagnostic trace,” on page 247.

*Usage example:*
The DUMPTRACE command dumps diagnostics to the DD FPQPRINT data set. For more information, see Chapter 20, “BPE diagnostic trace,” on page 247.

Command input:
F PS13SRVJ,DUMPTRACE

Command output:
BPE0032I DUMPTRACE COMMAND COMPLETED FPQ

SHUTDOWN
Stop the specified Service Repository server. The ALL keyword stops all servers in the same XCF group.

Tip: The P server_job_name has the same effect as F server_job_name,SHUTDOWN.

►►F—server_job_name—SHUTDOWN◄◄

ALL Stop all Service Repository servers that use the same XCF group as the specified server, including subordinate servers.

Usage example:
The SHUTDOWN command with option ALL stops the specified Service Repository server and all servers in the same XCF group.

Command input:
F PS13SRVJ,SHUTDOWN

Command output:
FPQ2005I - Shutdown command received, server terminating FPQ
FPQ2013I - Closing repository: CATALOG FPQ
FPQ2017I - Repository closed: CATALOG FPQ
FPQ2013I - Closing repository: HKT_INPUT FPQ
FPQ2017I - Repository closed: HKT_INPUT FPQ
FPQ2013I - Closing repository: HKT_REGISTRY FPQ
FPQ2017I - Repository closed: HKT_REGISTRY FPQ
FPQ2007I FPQ - BEGINNING PHASE 1 OF SHUTDOWN FPQ
BPE0032I SHUTDOWN COMMAND COMPLETED FPQ
BPE0008I FPQ - BEGINNING PHASE 2 OF SHUTDOWN FPQ
BPE0009I FPQ - SHUTDOWN COMPLETE FPQ
SMF000I PS13SRVJ FPQ2 FPQSVRS 0000
$HASP395 PS13SRVJ ENDED
Part 3. Report services reference

IMS Tools Knowledge Base is the foundational infrastructure that provides a centralized information management environment for IMS Tools products.

IMS Tools Knowledge Base allows you to store, manage, and access resources (such as reports, sensor data, policies, and rules) that are generated or used by any tool product that has been enabled and registered to participate in this environment.

Topics:
- Chapter 7, “Finding and viewing reports,” on page 67
- Chapter 8, “Managing reports,” on page 95
- Chapter 9, “Product administration,” on page 115
- Chapter 10, “Report administration,” on page 123
Chapter 7. Finding and viewing reports

You use the IMS Tools Knowledge Base ISPF user interface to find and view reports that are stored in the IMS Tools Knowledge Base central repository.

Topics:

- “IMS Tools Knowledge Base main menu” on page 68
- “ISPF panel features and functions” on page 70
- “Finding reports by selection criteria” on page 73
- “Finding reports by job” on page 79
- “Finding reports by group” on page 81
- “Finding reports from the all available report list” on page 83
- “Finding reports from the recently viewed report list” on page 85
- “Finding reports by using the quick index number” on page 86
- “Finding related reports” on page 89
- “Viewing and printing reports” on page 91
You use the IMS Tools Knowledge Base main menu to access and manage reports that are stored in the repository.

When you first use the IMS Tools Knowledge Base main menu panel, you must enter the name of the IMS Tools Knowledge Base server that is used for your sysplex environment.

For example:

*Knowledge Base Server Name . . . . FPQRDP01

This value is preserved in your user profile and is automatically set for all future access of this panel.

You can specify the question mark character (?) in the field (and press Enter) to view a list of servers that you connected to in the past.

Setting the history value

You are also required to set the History value. The most recent report for a given resource is considered the current report. Older versions, if saved, are considered history reports.

Report retention settings control whether a previous (or history) version of a report is retained when a new version is recorded. Many history versions can be retained.

When you indicate N for History on the main panel, the Available Reports Lists shows only the current instance of each report in the repository.
When you indicate Y for **History** on the main panel, the Available Reports Lists displays all current reports and existing history instances of the reports in the repository.

For example:

*History (y/n) Y*

This value is preserved in your user profile and is automatically set for all future access of this panel.

**Entering a RECON ID**

Optionally, you can enter a RECON environment ID. RECON environments are defined to IMS Tools Knowledge Base by using the product administration utility.

The setting for **Recon ID** limits the database reports that you see to just the reports for databases that are associated with that RECON environment. You can type the question mark character (?) in the field (and press Enter) to see a list of all defined RECON environments.

For example:

Recon ID . . . . . . . . TTRECN11

This value is preserved in your user profile and is automatically set for all future access of this panel.
ISPF panel features and functions

The IMS Tools Knowledge Base ISPF interface provides extensive and flexible search capabilities to quickly locate the reports that you require. This topic discusses several features and functions that can help make your search time more efficient.

Help

The IMS Tools Knowledge Base ISPF interface includes a Help system that provides immediate reference information while you are using the product. Help information is provided through two methods:

- Panel help
- Field help

Panel help provides overview information about the purpose and function of the panel and includes a summary of the fields and actions available on the panel. For example, panel help will list all pull down menu options, row actions, and commands. You can access panel help in three ways:

- Place the cursor on the Help menu at the top of the panel, press Enter, select option 1 (**Panel Help**), and press Enter
- Place the cursor on the title of the panel and press F1

**Note:** You can also access the panel help by pressing F1 anywhere on the panel, except in a data field area.

Field help provides information specific to a data field area on the panel. To access field help, place the cursor in the data entry area of the field and press F1.

**Note:** If there is no field help information available for a field, the general panel help information is displayed.

Wildcard characters

Wildcard characters can be used in some fields to represent any character value.

Wildcard characters include:

- %
  - Represents a single character substitution.
- *
  - Represents a multiple character substitution (only one * can be specified; for example, *A* is not valid).

For example:

- A%CD
- A*D
- *D
- A*

Date format

The Report Selection Criteria panel includes the option to enter a date and time range.
The **Start Date** is an optional field that limits selection of reports to those with a job, step, or report date no earlier than the specified date.

The **End Date** is an optional field that limits selection of reports to those with a job, step, or report date no later than the specified date.

You can specify an absolute date using the following format:

```
yyyy/mm/dd
```

Alternatively, you can specify a relative date from 0 to 99, where 0 is today and 1 is yesterday.

**Time format**

The **Start Time** is an optional field that limits selection of reports to those with a job, step, or report time no earlier than the specified time. **Start Time** cannot be specified without **Start Date**.

The **End Time** is an optional field that limits selection of reports to those with a job, step, or report time no later than the specified time. **End Time** cannot be specified without **End Date**.

You can specify a **Start Time** and **End Time** using the following format:

```
hh:mm:ss
```

**History**

The most recent report for a given resource is considered the current report. Older versions, if saved, are considered history reports.

You can choose whether or not history versions of reports are selected for display from the IMS Tools Knowledge Base main menu and from the Report Selection Criteria panel.

In addition, you can locate all of the versions of a report by using the **History** row action (H) on the Available Reports List panel.

**Sort**

Panels often contain many rows of reports.

The **Sort** option from the **View** menu allows you to sort the rows using up to six columns. The Sort setting is saved in your profile.

The **Reset Sort Sequencing** option from the **View** menu allows you to restore the original sort sequence.

You can also access the sort function by entering **SORT** on the command line.

**Filter**

Panels often contain many rows of reports.

The **Filter** option from the **View** menu displays a Set Filter criteria panel where you can enter specific values that identify the reports you require.
The refreshed list of reports limits the rows displayed to those reports that match the filter criteria. All reports not meeting the specified filter criteria are eliminated from the refreshed list of reports.

You can also access the filter function by entering FILTER on the command line.

**Find**

Panels often contain many rows of reports

The **Find** option from the **View** menu displays a Find criteria panel where you can enter specific values that identify the reports you require.

The refreshed list of reports positions the first matching report at the top of the display. The RFIND (repeat find) function key will find the next match.

You can also access the find function by entering FIND on the command line.

**Column order**

The Available Reports List panel displays the information about a report in multiple columns that extend beyond the width of your screen.

The **Order Columns** option from the **View** menu displays an Order Column Settings panel where you can specify the sequence the columns are displayed in. The customized Order setting is saved in your profile.

The **Reset Order** option from the **View** menu allows you to restore the original column sequence.

You can also access the column order function by entering ORDER on the command line.

**Scrolling**

The Available Reports List panel displays the information about a report in multiple columns that extend beyond the width of your screen.

Right and left scrolling is supported. Scroll right to see additional information about the reports.

You can provide a numeric value on the command line to scroll a specific number of columns.

- A value of 0 will position the screen at the leftmost column.
- A value of 99 will position the screen at the rightmost column.
Finding reports by selection criteria

You can find reports by using specific characteristics of the reports that you require.

About this task

The Report Selection Criteria panel allows you to produce a list of reports by specifying one or more report characteristics.

The following tables describes each of the selection criteria that can be used to find reports in the IMS Tools Knowledge Base report repository:

- For report selection criteria descriptions, see Table 7.
- For RECON selection criteria descriptions, see Table 8.
- For database selection criteria descriptions, see Table 9 on page 74.
- For job and step selection criteria descriptions, see Table 10 on page 74.
- For date and time selection criteria descriptions, see Table 11 on page 74.

### Table 7. Report selection criteria descriptions

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quick Index</td>
<td>An alphanumeric identifier that uniquely identifies a specific report instance.</td>
</tr>
<tr>
<td>History</td>
<td>Include archived (history) versions of all reports being displayed. Values are Y and N.</td>
</tr>
<tr>
<td>Product</td>
<td>The product name specifies the short name of the IMS Tools product that created the reports. See the users guide of the IMS Tools product to find the short name of that product.</td>
</tr>
<tr>
<td>Report</td>
<td>The report name specifies the short name of a report. See the users guide of the IMS Tools product to find the short names of the reports generated by that product.</td>
</tr>
<tr>
<td>Type</td>
<td>The report type can be one of the following classification values: DBD, DD, AREA, PART, LOG, SUM, or WTO</td>
</tr>
<tr>
<td>Cmp Code (Completion Code)</td>
<td>A completion code is an integer value that is optionally used by products to communicate the significance of information contained in the report. A completion code of zero means that the report was successfully completed. However, a completion code of zero does not mean that the report does not contain any errors. See the documentation for each product to determine the meaning of specific completion codes.</td>
</tr>
</tbody>
</table>

### Table 8. RECON selection criteria descriptions

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RECON ID</td>
<td>The RECON ID is an eight-character name that you assign to a RECON by associating it with the RECON1 data set name. You can review these associations and change them using the IMS Tools Knowledge Base administration user interface. The IMS Tools product that produces database reports uses the RECON1 data set name to make this association.</td>
</tr>
<tr>
<td>RECON1 Name</td>
<td>The RECON1 data set that the reports are associated with.</td>
</tr>
<tr>
<td>IMS ID</td>
<td>The IMS ID is the IMS system name that is associated with the reports.</td>
</tr>
</tbody>
</table>
Table 9. Database selection criteria descriptions

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Database</td>
<td>The database name is the name of the database that is associated with the reports.</td>
</tr>
<tr>
<td>Part/Area (Partition/Area)</td>
<td>The name of the partition or area associated with this report.</td>
</tr>
<tr>
<td>DD Name</td>
<td>The data definition name is the name of the data set that is associated with the reports.</td>
</tr>
<tr>
<td>Group Type</td>
<td>Database objects can belong to groups. Groups can be defined to DBRC or IMS Tools Knowledge Base (ITKB).</td>
</tr>
<tr>
<td>Group Name</td>
<td>Database objects can belong to groups. The group name is the name of the group associated with data objects in this report.</td>
</tr>
<tr>
<td>DB Set</td>
<td>HAL DB databases that are enabled for OLR have two sets of data sets. &quot;P&quot; or primary are the &quot;A-J&quot; data sets, and &quot;S&quot; or secondary are the &quot;M-V&quot; data sets.</td>
</tr>
</tbody>
</table>

Table 10. Job and step selection criteria descriptions

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>System ID</td>
<td>The system ID specifies the IMS system that the report was created on.</td>
</tr>
<tr>
<td>User ID</td>
<td>The user ID is the user ID value associated with the job that produced the report.</td>
</tr>
<tr>
<td>Job Name</td>
<td>The job name is the name of the job that created the reports.</td>
</tr>
<tr>
<td>Job Number</td>
<td>The job number is the number of the job that created the reports.</td>
</tr>
<tr>
<td>Step Name</td>
<td>The step name specifies the name of the job step that created the reports.</td>
</tr>
</tbody>
</table>

Table 11. Date and time selection criteria descriptions

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date/Time range</td>
<td>Choose to apply the date and time range to the Job (J), Step (S), or Report (R).</td>
</tr>
<tr>
<td>Start Date</td>
<td>The Start Date value limits selection of reports to those with a job/step/report time no earlier than the specified date. You can specify either a relative date (from 0 to 99 where 0 is today, 1 is yesterday) or an absolute date. Format is &quot;yyyy/mm/dd&quot;.</td>
</tr>
<tr>
<td>Start Time</td>
<td>The Start Time value limits selection of reports to those with a job/step/report time no earlier than the specified time. Start Time cannot be specified without Start Date. Format is &quot;hh:mm:ss&quot;.</td>
</tr>
<tr>
<td>End Date</td>
<td>The End Date value limits selection of reports to those with a job/step/report time no later than the specified date. You can specify either a relative date (from 0 to 99 where 0 is today, 1 is yesterday) or an absolute date. Format is &quot;yyyy/mm/dd&quot;.</td>
</tr>
<tr>
<td>End Time</td>
<td>The End Time value limits selection of reports to those with a job/step/report time no later than the specified time. End Time cannot be specified without End Date. Format is &quot;hh:mm:ss&quot;.</td>
</tr>
</tbody>
</table>
Procedure

To find reports when you know some characteristics of these reports, complete the following steps:

1. Select option 8 from the IMS Tools Knowledge Base main menu panel. Press Enter.

   The Report Selection Criteria panel is displayed:

   ![Report Selection Criteria panel](image)

   **Figure 25. Report Selection Criteria panel**

   2. Enter any information that describes the list of reports you want to review. Press Enter.

      **Important:** The RECON1 Name field does not allow the use of wildcard characters.

      The Available Reports List panel displays a list of reports that meet the specified criteria.
If you do not enter any data in the Report Selection Criteria panel, the Available Reports List displays all of the available reports in the repository (the same output as main menu option 9). This list can be very lengthy.

3. Use the Sort, Find, and Filter options from the View menu to drill down to the appropriate reports.

4. Use the Row Actions commands to view and manage your reports.

5. Use the PF11 and PF10 keys to scroll the panel right and left.

6. Use the Order Columns option from the View menu to change the order that the columns are displayed on the panel.

**Saving and retrieving the selection criteria**

You can save the criteria that you specified in the Report Selection Criteria panel to quickly find similar reports at a later time. If you specified date and time criteria, you might want to use relative time references.

To save and retrieve the criteria that you entered on the Report Selection Criteria panel, complete the following steps:

1. Enter the appropriate criteria information on the Report Selection Criteria panel.

2. From the Commands menu of the Report Selection Criteria panel, select option 1 (Save). Press Enter.

**Figure 26. Available Reports List panel**

If you do not enter any data in the Report Selection Criteria panel, the Available Reports List displays all of the available reports in the repository (the same output as main menu option 9). This list can be very lengthy.

**Saving and retrieving the selection criteria**

You can save the criteria that you specified in the Report Selection Criteria panel to quickly find similar reports at a later time. If you specified date and time criteria, you might want to use relative time references.

To save and retrieve the criteria that you entered on the Report Selection Criteria panel, complete the following steps:

1. Enter the appropriate criteria information on the Report Selection Criteria panel.

2. From the Commands menu of the Report Selection Criteria panel, select option 1 (Save). Press Enter.

**Figure 27. Commands menu from the Report Selection Criteria panel**

The Save Selection Criteria panel is displayed.
3. From the Save Selection Criteria panel, enter a unique name for this criteria profile and a description of what report output this criteria profile produces. Press Enter.


The Retrieve Selection Criteria panel is displayed.

For example:

```
SERVER: FPQRDP01 Retrieve Selection Criteria Row 1 to 2 of 2
Command ===>

Choose a selection criteria and press ENTER or press END to exit.

Row actions: S - List D - Delete
Act Name Description
- S1 Primary selection criteria
- S2 Secondary selection criteria
******************************************************************************
```

5. Use the List row action (S) to display the Report Selection Criteria panel for the selected saved criteria. Press Enter.

The Report Selection Criteria panel is displayed.

For example:
6. You can delete the saved criteria from the Retrieve Selection Criteria panel by using the **Delete** row action (D) and pressing Enter.
Finding reports by job

You can find reports by the job that generated the reports.

Procedure

To find reports when you know the job that generated the reports, complete the following steps:

1. Select option 4 from the IMS Tools Knowledge Base main menu panel. Press Enter.

   The Report Jobs List panel is displayed. The list provides job names, job numbers, and the number of reports that are available for each job.

2. If the results list is lengthy, use the Sort, Find, and Filter options from the View menu to locate the job.

3. Select the appropriate job by using the List row action (S). Press Enter.

   The Available Reports by Job panel is displayed:

4. Use the Sort, Find, and Filter options from the View menu to drill down to the required reports.

5. Use the Row Actions commands to view and manage your reports.
6. Use the PF11 and PF10 keys to scroll the panel right and left.
7. Use the **Order Columns** option from the **View** menu to change the order that the columns that are displayed on the panel.
Finding reports by group

You can find specific reports from a list of reports that are associated with a specific group type.

About this task

IMS Tools Knowledge Base group types include:

- Databases
- DDnames
- IMS systems
- Report types
- Report titles
- Products

Procedure

To find reports by groups, complete the following steps:

1. Select the appropriate group option from the IMS Tools Knowledge Base main menu panel. Press Enter.

   Options are available for the following groups:
   - Option 1 displays a list of databases that have available reports.
   - Option 2 displays a list of DDnames that have available reports.
   - Option 3 displays a list of IMS systems that have available reports.
   - Option 5 displays a list of report types (for example, AREA, DBD, DD, LOG, PART, SUM) that have available reports.
   - Option 6 displays a list of report titles that have available reports.
   - Option 7 displays a list of registered products that have available reports.

   For example, selecting option 1 produces the Database List panel that displays all databases that currently have available reports:

   ![Database List Panel](Figure 34. Database List panel)

2. If the results list is lengthy, use the Sort, Find, and Filter options from the View menu to locate the job.
3. Use the List row action (S) to produce an Available Reports List panel. Press Enter.

For example, with database AASTD7 selected, the Available Reports - DB panel displays the available reports for that database:

```
<table>
<thead>
<tr>
<th>Act Product</th>
<th>Report</th>
<th>DBD</th>
<th>Area/Part DD</th>
<th>Set</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDUNLOAD</td>
<td>DB CALL STATISTICS</td>
<td>AASTD7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HDUNLOAD</td>
<td>DB CALL STATISTICS</td>
<td>AASTD7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HDUNLOAD</td>
<td>DB STATISTICS</td>
<td>AASTD7</td>
<td>BBD7DD1</td>
<td></td>
</tr>
<tr>
<td>HDUNLOAD</td>
<td>DB STATISTICS</td>
<td>AASTD7</td>
<td>BBD7DD1</td>
<td></td>
</tr>
<tr>
<td>HDUNLOAD</td>
<td>SEGMENT STATISTICS</td>
<td>AASTD7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HDUNLOAD</td>
<td>SEGMENT STATISTICS</td>
<td>AASTD7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
```

Figure 35. Available Reports - DB panel

4. Use the Sort, Find, and Filter options from the View menu to drill down to the required reports.

5. Use the Row Actions commands to view and manage your reports.

6. Use the PF11 and PF10 keys to scroll the panel right and left.

7. Use the Order Columns option from the View menu to change the order the columns that are displayed on the panel.
Finding reports from the all available report list

You can find reports by listing all available reports.

About this task

Option 9 of the IMS Tools Knowledge Base main menu panel lists all of the reports in the repository. The list can be large.

From this broad listing of reports in the repository, you can use the following techniques to drill down to specific reports:

- Sort the list order by report characteristics
- Search for a report by using Find criteria
- Filter the list by using Filter criteria
- Customize the display order of column fields that show report characteristics

Procedure

To find reports from an all available reports list, complete the following steps:

1. Select option 9 from the IMS Tools Knowledge Base main menu panel. Press Enter.

   The Available Reports List panel is displayed:

<table>
<thead>
<tr>
<th>SERVER: FPQRDP01</th>
<th>Available Reports List</th>
<th>Row 1 from 1163</th>
</tr>
</thead>
<tbody>
<tr>
<td>Command ===&gt;</td>
<td>Scrol nach PAGE</td>
<td></td>
</tr>
</tbody>
</table>

   Select a row action or press END to exit.

   Row actions: S - View J - Job T - Step H - History P - Print D - Delete I - Info A - Archive

<table>
<thead>
<tr>
<th>Act</th>
<th>Product</th>
<th>Report</th>
<th>DBD</th>
<th>Area/Part</th>
<th>Set</th>
</tr>
</thead>
<tbody>
<tr>
<td>HU0L0</td>
<td>CAB STATISTICS</td>
<td>BB07D01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HU0L0</td>
<td>CAB STATISTICS</td>
<td>BB07D01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HU0L0</td>
<td>CAB STATISTICS</td>
<td>CUD7D01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HU0L0</td>
<td>CAB STATISTICS</td>
<td>CUD7D01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HU0L0</td>
<td>CAB STATISTICS</td>
<td>DOD7D01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HU0L0</td>
<td>CAB STATISTICS</td>
<td>DOD7D01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HU0L0</td>
<td>DATA SET I/O STATS</td>
<td>BB07D01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HU0L0</td>
<td>DATA SET I/O STATS</td>
<td>BB07D01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HU0L0</td>
<td>DATA SET I/O STATS</td>
<td>CUD7D01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HU0L0</td>
<td>DATA SET I/O STATS</td>
<td>CUD7D01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HU0L0</td>
<td>DATA SET I/O STATS</td>
<td>DOD7D01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HU0L0</td>
<td>DATA SET I/O STATS</td>
<td>DOD7D01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HU0L0</td>
<td>DB CALL STATISTICS</td>
<td>AASTD7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HU0L0</td>
<td>DB CALL STATISTICS</td>
<td>AASTD7</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   Figure 36. Available Reports List panel

2. Use the Sort, Find, and Filter options from the View menu to drill down to the required reports.
3. Use the Row Actions commands to view and manage your reports.
4. Use the PF11 and PF10 keys to scroll the panel right and left.
5. Use the **Order Columns** option from the **View** menu to change the order the columns that are displayed on the panel.
Finding reports from the recently viewed report list

You can find reports by listing all recently viewed reports.

About this task

Option 10 of the IMS Tools Knowledge Base main menu panel lists the last ten reports that you viewed, which enables you to view them again quickly.

Procedure

To find reports from the list of recently viewed reports, complete the following steps:

1. Select option 10 from the IMS Tools Knowledge Base main menu panel. Press Enter.
   The Available Reports List panel is displayed:

   ```
   View  Help
   SERVER: FPQRD01  Available Reports List  Row 1 from 3
   Command ===>
   Scroll ===>
   PAGE

   Select a row action or press END to exit.
   Row actions: S - View J - Job T - Step H - History P - Print D - Delete
   I - Info A - Archive
   Act  Product   Report   Report Start   DBD
   HDUNLOAD    DB CALL STATISTICS 20070331 22:32:09 AASTD7
   HDUNLOAD    DB STATISTICS 20070331 22:32:58 CUSTD7
   HDUNLOAD    SEGMENT STATISTICS 20070331 22:32:21 CUSTD7
   ******************************** Bottom of data **************************************************
   ```

   Figure 38. Available Reports List panel

2. Use the Row Actions commands to view and manage your reports.
Finding reports by using the quick index number

You can find reports based on the quick index numbers for the reports.

About this task

The quick index number is a unique identifier assigned to the report when it is added to the repository.

If you know the quick index number for the report, you can immediately retrieve the report without using sort, find, and filter techniques.

Procedure

To retrieve a report using the quick index number, complete the following steps:

1. Select option 8 from the IMS Tools Knowledge Base main menu panel. Press Enter.

   The Report Selection Criteria panel is displayed.

2. Enter the quick index number for the report in the Quick Index field.

   For example:

   ![Report Selection Criteria panel](image)

   Figure 39. Report Selection Criteria panel

3. Press Enter.

   The Available Reports List panel is displayed. For example:
4. Use the Row Actions commands to view and manage the report.

**Obtaining the quick index number for a report**

To obtain the quick index number for a report, complete the following steps:

1. Generate an Available Reports List from any of the options that are available from the IMS Tools Knowledge Base main menu panel.

   For example:

   ![Available Reports List panel](image)

   **Figure 40. Available Reports List panel**

   **SERVER:** FPQRDP01  **Available Reports List**  **Row 1 from 1**

   **Command ====>**

   Select a row action or press END to exit.

   **Row actions:** S - View J - Job T - Step H - History P - Print D - Delete
   **I - Info A - Archive**

   **Act**  **Product**  **Report**  **Report Start**  **DBD**  **Area/Part**  **DD**  **Set**
   **HDUNLOAD**  **DBD**  **SEGMENT STATISTICS**  **20070331 22:32:09**  **AADT7**
   **CCSTD7**

   **************************** Bottom of data ****************************

   2. Use the **Info** row action (I) for a specific report on the list to generate the Report Information panel. Press Enter.

   The Report Information panel is displayed.

   For example:

   ![Report Information panel](image)

   **Figure 41. Available Reports List panel**

   **SERVER:** FPQRDP01  **Available Reports List**  **Row 1 from 3**

   **Command ====>**

   Select a row action or press END to exit.

   **Row actions:** S - View J - Job T - Step H - History P - Print D - Delete
   **I - Info A - Archive**

   **Act**  **Product**  **Report**  **Report Start**  **DBD**
   **HDUNLOAD**  **DBD**  **CALL STATISTICS**  **20070331 22:32:09**  **AADT7**
   **CCSTD7**

   **************************** Bottom of data ****************************
The Quick Index field and value is the first information listed.
Finding related reports

You can find reports that are related by job, job step, and history.

Procedure

To find related reports, complete the following steps:

1. Generate an Available Reports List from any of the options available from the IMS Tools Knowledge Base main menu panel.
   For example:

   ![Available Reports List panel](image)

   **Figure 43. Available Reports List panel**

   2. Use any of the following row actions (followed by pressing Enter) to find all reports that are related to the selected report:
      - **J** - Display all reports with the same job number as the selected report
      - **T** - Display all reports with the same job step as the selected report
      - **H** - Display all versions of the selected report, including the current report and all history instances of the report

   3. Use the **Order Columns** option from the **View** menu to change the order that the columns are displayed on the panel.

   Example 1 (job number as column 3):

   ![Available Reports - Job panel](image)

   **Figure 44. Example 1: Available Reports - Job panel**

   Example 2 (job step as column 3):
Example 3 (history):

4. Use the **Sort**, **Find**, and **Filter** options from the **View** menu to drill down to the required reports.

5. Use the PF11 and PF10 keys to scroll the panel right and left.
Viewing and printing reports

You can view and print the contents of reports that have been stored in the IMS Tools Knowledge Base repository.

Procedure

To view and print the contents of a report, complete the following steps:

1. Generate an Available Reports List from any of the options available from the IMS Tools Knowledge Base main menu panel.
   For example:

   **Figure 47. Available Reports List panel**

   2. Use the View row action (S) to display the contents of the report. Press Enter.
      The contents of the report is displayed in the standard ISPF user interface.
      For example:
3. Use the standard ISPF VIEW controls to navigate through the contents of the report.

4. To print the report, return to the Available Reports List and use the **Print** row action (P). Press Enter.

   The Print Report message is displayed.

   For example:
   
   ```
   Print Report
   You are requesting a report be printed. Please specify the SYSOUT class. Press CANCEL to exit without printing.
   
   Then press ENTER to print the report.
   ```

   **SYSOUT Class . . . .**

5. Specify the SYSOUT class and press Enter.

   The Available Reports List panel displays the row for the printed report.

   The **Report Printed** message is displayed in the upper right corner of the panel.

   For example:
Select a row action or press END to exit.

Row actions: S - View J - Job T - Step H - History P - Print D - Delete
I - Info A - Archive

<table>
<thead>
<tr>
<th>Act Product</th>
<th>Report</th>
<th>Report Start</th>
<th>DBD</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDUNLOAD</td>
<td>DB STATISTICS</td>
<td>20070331 22:32:58</td>
<td>CUST07</td>
</tr>
</tbody>
</table>

Figure 50. Available Reports List panel
Chapter 8. Managing reports

You use the IMS Tools Knowledge Base ISPF user interface to manage reports that are stored in the IMS Tools Knowledge Base central repository.

Topics:
- “Archiving reports” on page 96
- “Deleting reports” on page 99
- “Managing deferred reports” on page 100
- “Importing reports” on page 102
- “Exporting reports” on page 109
Archiving reports

You can override the retention settings for a report and archive that report permanently.

About this task

All reports that are stored in the IMS Tools Knowledge Base repository are initially subject to automatic deletion. The time of deletion is determined by the report’s retention values. The retention values for a report are set when the report is initially registered with the repository by the tool product. You can customize the retention values by using the ISPF Report Subscriptions List panel for a product.

See “Report retention overview” on page 124.

Report retention is governed by the following two values:

- **Days** - the minimum number of days that the report will be retained in the repository
- **Versions** - the minimum number of reports of a given index value that will be retained in the repository as history copies

When a new report is generated, the retention status is evaluated for any existing reports that have the same index value. Reports that exceed both the number of days and the number of versions will be deleted.

You can view the retention values for a report by viewing the Report Information panel for the report (use the **Info** row action (I) from an Available Reports panel). The retention values are located at the end of this panel.

For example:

```
SERVER: FPQRDP01  Report Information  Ver 1.4.0
Command ==> Press END to exit.

Quick Index : AD01BA5AC08100000002
Product Name : High Performance UnLoad
Report Title : CAB STATISTICS
                Cmp Code . : 000

RECON ID . . : MYRECON1
RECON1 Name . : IMS1.RECON1
IMS ID . . . :

Database . . : Part/Area . . : DD Name . . : BBD7DD1
Group Type . . : Group Name . :

System ID . . : STLABA6  User ID . . . : RDEFA1
Job Name . . : RDQADRP  Job Number . : 02833  Step Name . : SWRITE

Job Start . . : 20070331 22:32:55
Step Start . . : 20070331 22:33:02
Report Start : 20070331 22:33:03

Retention Days 1,234  Versions 9
```

*Figure 51. Report Information panel*
You can take a report out of the retention cycle by archiving the report. This report will no longer be considered for deletion and does not get counted in the versions when evaluating retention for non/archived reports.

**Procedure**

To archive a report, complete the following steps:

1. Generate an Available Reports List from any of the options that are available from the IMS Tools Knowledge Base main menu panel.
   For example:

   ![Figure 52. Available Reports List panel](image)

   **SERVER:** FPQRP01  **Available Reports List**  **Row 1 from 3**
   **Command ====>**  **Scroll ====> PAGE**

   Select a row action or press END to exit.

   **Row actions:** S - View J - Job T - Step H - History P - Print D - Delete
   I - Info A - Archive

<table>
<thead>
<tr>
<th>Act</th>
<th>Product</th>
<th>Report</th>
<th>Report Start</th>
<th>DBD</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDUNLOAD</td>
<td>DB CALL STATISTICS</td>
<td>20070331 22:32:09</td>
<td>AAST07</td>
<td></td>
</tr>
<tr>
<td>HDUNLOAD</td>
<td>DB STATISTICS</td>
<td>20070331 22:32:58</td>
<td>CUST07</td>
<td></td>
</tr>
<tr>
<td>HDUNLOAD</td>
<td>SEGMENT STATISTICS</td>
<td>20070331 22:32:21</td>
<td>CCSTD07</td>
<td></td>
</tr>
</tbody>
</table>

   *******************************  Bottom of data  ******************************

2. Use the Archive row action (A) to place the report in an archived condition. Press Enter.

3. To view the archive status of this report, use the Info row action (I) for that report. Press Enter.
   The Report Information panel is displayed.
   The Report is ARCHIVED message is displayed at the end of the panel.
   For example:
Figure 53. Report Information panel
Deleting reports

You can delete reports that are stored in the Output repository.

Procedure

To delete a report from the Output repository, complete the following steps:

1. Generate an Available Reports List from any of the options that are available from the IMS Tools Knowledge Base main menu panel.
   For example:

   ```
   View  Help
   SERVER: FPQRP01  Available Reports List  Row 1 from 3
   Command ====>  Scroll ====> PAGE
   Select a row action or press END to exit.
   Row actions: S - View J - Job T - Step H - History P - Print D - Delete
   I - Info A - Archive
   Act Product Report Report Start DBD
   HDUNLOAD DB CALL STATISTICS 20070331 22:32:09 AASTD7
   HDUNLOAD DB STATISTICS 20070331 22:32:58 CUSD7
   HDUNLOAD SEGMENT STATISTICS 20070331 22:32:21 CCSTD7
   *******************************************************************************
   Bottom of data*******************************************************************************
   ``

2. Use the Delete row action (D) to delete the report. Press Enter.

3. A Delete Report message is displayed that prompts you to confirm that you really want to delete the report and, if so, whether to delete just this version of the report or all versions of the report.

   ```
   Delete Report
   You are requesting the deletion of a report, press CANCEL to exit without deleting.
   
   Choose whether to delete this report (Y) or to delete all versions of this report with the same index value (A).
   Then press ENTER to DELETE.
   
   Delete all versions?  (A/Y/N)
   ``

4. To complete the task, respond appropriately and press Enter.
   - Use Y to delete the report
   - Use A to delete all versions of this report with the same index value
   - Use N to exit this action without deleting (this is the equivalent of using CANCEL)
Managing deferred reports

Deferred reports are reports that were generated by IMS Tools products in the Output repository but that have not been made available to users.

About this task

For example, the IMS Parallel Reorganization tool might be in the process of reorganizing databases to restore data clustering and distribute free space evenly. During the process, shadow databases exist.

The reorganization process requires the services of several other IMS Tools products. For example, IMS High Performance Image Copy allows database blocks to be passed directly from the reload task to an image copy task for processing. IMS High Performance Pointer Checker allows HASH pointer checking during the image copy processing.

Both IMS High Performance Image Copy and IMS High Performance Pointer Checker might be generating reports while supporting the reorganization process. While the reorganization task is in process (until the databases are switched), the generated reports are held in a deferred status by IMS Tools Knowledge Base.

If the IMS Parallel Reorganization database reorganization does not complete for some reason, the generated reports remain in the deferred state. You can manually manage these deferred reports by either deleting them or committing them to the Output repository. Typically this action will not be required.

Do not delete or commit any reports for active processes (in general, ignore anything within the last 24 hours).

Procedure

To manage deferred reports, complete the following steps:

Note: While reports are in the deferred state, they are not accessible for viewing from the IMS Tools Knowledge Base ISPF user interface.

1. Access the Administration menu from the IMS Tools Knowledge Base main menu panel.
   For example:

   ![Administration menu options]

2. Select option 1 (List Deferred Reports). Press Enter.
   The Deferred Reports panel is displayed.
   For example:
3. Use the **Commit** row action (C) to make the reports available from the IMS Tools Knowledge Base ISPF user interface. Press Enter.

The Report ID value changes to **Committed**.

For example:

```

```

Figure 57. Deferred Reports panel

4. Use the **Delete** row action (D) to remove the reports entirely from the Output repository. Press Enter.

The Report ID value changes to **Deleted**.

For example:

```

```

Figure 58. Deferred Reports panel
Importing reports

You can import reports into the Output repository.

Reports generated by products enabled to participate in the IMS Tools Knowledge Base information management environment are automatically sent to and stored in the Output repository. There can be situations when you have reports that you must import into the repository.

Possible scenarios where importing reports might be required include:
- The JCL for an enabled product was not correctly set up and the automatic storing of reports in the repository fails to function.
- The product is registered but not enabled. In this case, the product JCL can write reports to a temporary data set. The IMPORT job can read the reports from that data set and write the reports to the Output repository.
- You have reports from another source that you want entered into the Output repository.

When reports are written to the Output repository, they are indexed by the values supplied for IMSID, GRPTYPE, GRPNAME, DBD, PART/AREA, and DD. You should only provide values that will allow you to easily search for the reports in the future.

In normal use, the index values for each report generated by your product should be unique to the resource processed. Reports with the same index value (for the same report ID) are considered to be versions of the same report. Retention rules will determine whether old versions of the report are saved or deleted.

When you import reports, you are responsible for creating appropriate index values for the reports.

To import reports, complete the following procedure:

1. Customize the properties for the report by modifying your copy of member HKTJIMPT.
   Refer to member HKTJIMPT in hlq.SHKTSAMP for the job JCL.
   Substitute the hlq variable with the installation data set high level qualifier.
   The member includes commented instructions.
2. Submit the job and ensure that it completes with a return code=0.
Syntax diagram for IMPORT

Parameter reference for HKTJIMPT

The following parameters are provided on the EXEC statement and control the execution of the JOB.

Table 12. Parameters for EXEC

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITKBSRVR</td>
<td>The name of the IMS Tools Knowledge Base server. The value can be a maximum of 8 characters in length. This parameter is required.</td>
</tr>
<tr>
<td>PRINT=YES</td>
<td>NO</td>
</tr>
</tbody>
</table>

The following parameters must be supplied to assign appropriate properties to the report:

Table 13. Parameters for SYSIN DD

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMPORT</td>
<td>Identifies the function. Must be first non-blank keyword on the statement. This parameter is required.</td>
</tr>
<tr>
<td>PRODUCTID</td>
<td>2-character ID of the product that is defined to IMS Tools Knowledge Base. This parameter is required. Refer to Table 15 on page 107</td>
</tr>
</tbody>
</table>
### Table 13. Parameters for SYSIN DD (continued)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>REPORTID</td>
<td>Two-character ID of the report that is defined to IMS Tools Knowledge Base for the specified PRODUCTID. This parameter is required.</td>
</tr>
</tbody>
</table>

**RECON**

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSN, value</td>
<td>Specifies a 44-character data set name that is used to identify the RECON environment. The data set name must be provided in value.</td>
</tr>
</tbody>
</table>

**DDN, value**

Specifies an 8-character DD that is used to locate the data set name that will be used to identify the RECON environment. The DD name must be provided in value.

**RCN**

The RECON1, RECON2, and RECON3 DDs that are used to locate the data set name that will be used to identify the RECON environment.

**NONE**

Specifies that there is no associated RECON environment. This parameter is required.

**INDEX**

One or more sub-parameters, enclosed in parentheses, that define the index or indexes for this report. At least one index must be supplied. Up to 100 indexes are supported.

One or more INDEX sub-parameters must be provided. A null value will be used for any subparameter not provided.

See Table 14 on page 105

This parameter is required.

**USERID**

The ID of the user that ran the report. If not specified, the user ID for the current IMPORT job will be used.

The value can be a maximum of 8 characters in length.

If specified, the parameter must be used in combination with JOBNAME, JOBNUMBER, and JOBSTRT.

This parameter is optional.

**JOBNAME**

The name of the JOB that produced the report. If not specified, the JOBNAME for the current IMPORT job will be used.

The value can be a maximum of 8 characters in length.

If specified, this parameter must be used in combination with USERID, JOBNUMBER, and JOBSTRT.

This parameter is optional.

**JOBNUMBER**

The number of the JOB that ran the report. If not specified, the job number for the current IMPORT job will be used.

The value can be a maximum of 7 characters (numeric) in length.

If specified, this parameter must be used in combination with USERID, JOBNAME, and JOBSTRT.

This parameter is optional.
Table 13. Parameters for SYSIN DD (continued)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
</table>
| JOBSTRT  | The start time for the JOB that ran the report. If not specified, the Job start time for the current IMPORT job will be used. Syntax (must be specified in its entirety): yyyy/mm/dd;hh:mm:ss  
  yyyy must be 2004 or greater.  
  If specified, this parameter must be used in combination with USERID, JOBNAME, and JOBNUMBER. This parameter is optional. |
| STEPNAME | The name of the step that ran the report. If not specified, the name of the step for the current IMPORT job will be used. The value can be a maximum of 8 characters. Permitted characters include A-Z, 0-9, @, #, $, -, _, and blank. If specified, this parameter must be used in combination with STEPSTRT. This parameter is optional. |
| STEPSTRT | The start time for the step that ran the report. If not specified, the step start time for the current IMPORT job will be used. Syntax (must be specified in its entirety): yyyy/mm/dd;hh:mm:ss  
  The value yyyy must be 2004 or greater.  
  If specified, this parameter must be used in combination with STEPNAME. This parameter is optional. |
| RPTSTRT  | The start time for the JOB that ran the report. If not specified, the JOB start time for the current IMPORT job will be used. Syntax (must be specified in its entirety): yyyy/mm/dd;hh:mm:ss  
  The value yyyy must be 2004 or greater. This parameter is optional. |

Table 14. Sub-parameters for INDEX

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMSID</td>
<td>The IMS system to associate this report with. Up to four characters in length. Specify only if the report is related to a specific IMS instance. This parameter is optional.</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
</tr>
<tr>
<td>---------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>GRPTYPE,</td>
<td>Specify only if the report was generated for a specific RECON group type and group name.</td>
</tr>
<tr>
<td>GRPNAME</td>
<td>The value for GRPTYPE can be either CA or DBDS (groups defined to DBRC). GRPNAME is the name of the group associated with this report. The value can be a maximum of 8 characters. The value can be a maximum of 8 characters. These parameters are optional. If one of these parameters is specified, the other parameter must also be specified.</td>
</tr>
<tr>
<td>DBD</td>
<td>The database to associate this report with. The value can be a maximum of 8 characters in length. This parameter is optional.</td>
</tr>
<tr>
<td>PART</td>
<td>AREA=xxxxxx</td>
</tr>
<tr>
<td>DD</td>
<td>The database data set DD to associate this report with. The value can be a maximum of 8 characters in length. This parameter is optional.</td>
</tr>
<tr>
<td>OLRSET</td>
<td>Applies only to HALDB databases that are OLR-enabled. This parameter is not an index value, but is associated with the report. Indicates whether the report is for the Primary or Secondary data sets or if the status is Unknown. Valid values are: ( P ) - Primary data set ( S ) - Secondary data set ( U ) - Unknown. This parameter is optional.</td>
</tr>
</tbody>
</table>

**Guidelines for setting INDEX sub-parameters**

- If the report member contains information about a database or it is generated for each database, specify DBD but do not specify PART/AREA or DD.
- If the report member contains information about HALDB partition or it is generated by each partition, specify DBD and PART but do not specify DD.
- If the report member contains information about DEDB area or it is generated by each area, set DBD and AREA but do not specify DD.
- If the report member contains information about database data set or it is generated by each database data set, set DBD, PART/AREA, and DD.
- For the Full-Function database and non-HALDB, do not specify PART/AREA.
- In case of HALDB, specify the A-side DD name even if an actual active side is M-side.
ID reference for IMS Tools products

The following table specifies the IDs of IMS Tools products for use as values to the IMPORT PRODUCTID parameter.

Table 15. IDs of IMS Tools products for use as values to the PRODUCTID parameter

<table>
<thead>
<tr>
<th>Product ID</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>DA</td>
<td>IMS Database Reorganization Expert</td>
</tr>
<tr>
<td>DC</td>
<td>IMS High Performance Change Accumulation Utility</td>
</tr>
<tr>
<td>DE</td>
<td>IMS Recovery Expert for z/OS</td>
</tr>
<tr>
<td>DF</td>
<td>IMS Fast Path Solution Pack</td>
</tr>
<tr>
<td>DG</td>
<td>IMS Database Solution Pack, IMS Database Utility Solution</td>
</tr>
<tr>
<td>DH</td>
<td>IMS High Performance Prefix Resolution</td>
</tr>
<tr>
<td>DI</td>
<td>IMS High Performance Image Copy</td>
</tr>
<tr>
<td>DL</td>
<td>IMS High Performance Load</td>
</tr>
<tr>
<td>DP</td>
<td>IMS High Performance Pointer Checker</td>
</tr>
<tr>
<td>DR</td>
<td>IMS Database Recovery Facility</td>
</tr>
<tr>
<td>DS</td>
<td>IMS Recovery Solution Pack</td>
</tr>
<tr>
<td>DU</td>
<td>IMS High Performance Unload</td>
</tr>
<tr>
<td>DX</td>
<td>IMS IMS Index Builder</td>
</tr>
<tr>
<td>IB</td>
<td>IMS Buffer Pool Analyzer</td>
</tr>
<tr>
<td>IP</td>
<td>IMS Performance Analyzer</td>
</tr>
</tbody>
</table>

Example: HKTJIMPT JOB

```
//HKTJIMPT JOB (&SYSUID,O20,090,IDIA), 'USER NAME', CLASS=A, TIME=10,
//   REGION=0M, MSGCLASS=H, MSGLEVEL=(1,1), NOTIFY=&SYSUID
//* ----------------------------
//* IMS Tools Knowledge Base  VERSION 1 RELEASE 2
//* LICENSED MATERIALS - PROPERTY OF IBM
//* 5655-V93 COPYRIGHT IBM CORPORATION 2007,2010
//* ALL RIGHTS RESERVED.
//* US GOVERNMENT USERS RESTRICTED RIGHTS -
//* USE, DUPLICATION OR DISCLOSURE RESTRICTED
//* BY GSA ADP SCHEDULE CONTRACT WITH IBM CORP.
//* -----------------------------
//* DIRECTIONS
//* --------
//* 1. CHANGE THE JOB CARD TO YOUR STANDARDS.
//* 2. CHANGE "HLQ1" TO THE HIGH LEVEL QUALIFIER FOR THE TARGET
//* 3. CHANGE "SRVNAME" TO THE NAME OF THE IMS Tools KB SERVER.
//* 4. CHANGE "REPORT.NAME" TO THE DATASET NAME OF THE REPORT.
//* 5. CHANGE THE PRODUCTID, REPORTID, RECON AND INDEX PARAMETERS:
//*    PRODUCTID AND REPORTID ARE PREDEFINED VALUES FOR THE
//*    REPORT YOU ARE ADDING
//*    RECON AND INDEX FORMS THE "KEY" OF THE STORED REPORT AND
//*    SHOULD REFLECT WHAT THE REPORT IS ABOUT.
//* - RECON IS THE RECON ENVIRONMENT THE DATABASE BELONGS
//* - INDEX HAS MANY SUBPARAMETERS YOU USE TO NAME THE DATABASE,
//*   DD, AREA OR PARTITION, OLRSET, DBRC GROUP, ETC.
//* ** YOU MUST SPECIFY AT LEAST ONE INDEX SUBPARAMETER AND
//*   AND YOU CAN SPECIFY MANY - SEE THE USERS GUIDE.
//* -----------------------------
//* IMPORT A REPORT INTO THE IMS Tools KB.
//* -----------------------------
```
IMPORT EXEC PGM=HKTJIMPT,PARM='ITKBSRVR=SRVRNAME'
/STPLIB DD DISP=SHR,DSN=HLQ1.SHKTLOAD
/SYSPRINT DD SYSOUT=* 
/REPORT DD DISP=SHR,DSN=REPORT.NAME
/SYSIN DD *
   IMPORT PRODUCTID=PP,REPORTID=RR,
       RECON=(NONE)
       INDEX(DBD=DBDNAME,DD=DDNAME,AREA=AREANAME)
   */
Exporting reports

You can selectively export (print) reports that reside in the IMS Tools Knowledge Base Output repository.

Reports generated by products enabled to participate in the IMS Tools Knowledge Base information management environment are automatically sent to and stored in the Output repository. You can print groups of stored reports based on specific criteria such as product ID, report ID, and history versions.

When reports are exported, they are indexed by the values supplied for IMSID, GRPTYPE, GRPNAME, DBD, PART/AREA, and DD.

To export reports, complete the following procedure:
1. Customize the properties for the report by modifying your copy of member HKTJEXPT.
   Refer to member HKTJEXPT in hlq.SHKTSAMP for the job JCL.
   Substitute the hlq variable with the installation data set high level qualifier.
   The member includes commented instructions.
2. Submit the job and ensure that it completes with a return code=0.

Syntax diagram for EXPORT

Parameter reference for HKTJEXPT

The following parameters are provided on the EXEC statement and control the execution of the JOB.

Table 16. Parameters for EXEC

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITKBSRVR</td>
<td>The name of the IMS Tools Knowledge Base server. Can be up to eight characters in length. This parameter is required.</td>
</tr>
</tbody>
</table>

The following parameters must be supplied to assign appropriate properties to the report:
Table 17. Parameters for SYSIN DD

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXPORT</td>
<td>Identifies the function. Must be first non-blank keyword on the statement.</td>
</tr>
<tr>
<td></td>
<td>This parameter is required.</td>
</tr>
<tr>
<td>PRODUCTID</td>
<td>2-character ID of the product that is defined to IMS Tools Knowledge Base.</td>
</tr>
<tr>
<td></td>
<td>This parameter is required.</td>
</tr>
<tr>
<td>REPORTID</td>
<td>Two-character ID of the report that is defined to IMS Tools Knowledge Base for the specified PRODUCTID and is to be exported (printed).</td>
</tr>
<tr>
<td></td>
<td>This parameter is required.</td>
</tr>
<tr>
<td>DSDCB=YES\ NO</td>
<td>Specifies how DCB attributes are set,</td>
</tr>
<tr>
<td></td>
<td>If set to NO, EXPORT will set DCB attributes based on the report attributes.</td>
</tr>
<tr>
<td></td>
<td>If set to YES, EXPORT uses the DCB attributes of the PRINT dataset rather than the DCB attributes of the report. Ensure that the data set has the appropriate attributes.</td>
</tr>
<tr>
<td></td>
<td>The default value is NO.</td>
</tr>
<tr>
<td></td>
<td>This parameter is optional.</td>
</tr>
<tr>
<td>VERSION=n</td>
<td>n,m</td>
</tr>
<tr>
<td></td>
<td>The value n is the relative generation number of the report, where 0 is the current generation, -1 is the one before, and the like.</td>
</tr>
<tr>
<td></td>
<td>n,m is a range of reports to be generated for each report found by the index values. m is specified as n. Both n and m must specify relative values. n is oldest and m is the newest.</td>
</tr>
<tr>
<td></td>
<td>The range of valid values for this parameter is -32767 to 0. The default value is 0.</td>
</tr>
<tr>
<td></td>
<td>This parameter is optional.</td>
</tr>
<tr>
<td>MAXREPORTS=nnn</td>
<td>Specifies the maximum number of report members that will be produced.</td>
</tr>
<tr>
<td></td>
<td>The range of valid values for this parameter is 1 to 32767. The default value is 1.</td>
</tr>
<tr>
<td></td>
<td>This parameter is optional.</td>
</tr>
<tr>
<td>STARTAFTER=nnn</td>
<td>Specifies the maximum number of reports members to be skipped before printing begins.</td>
</tr>
<tr>
<td></td>
<td>The range of valid values for this parameter is 0 to 32767. The default value is 0.</td>
</tr>
<tr>
<td></td>
<td>MAXREPORTS is required with STARTAFTER.</td>
</tr>
<tr>
<td></td>
<td>This parameter is optional.</td>
</tr>
</tbody>
</table>
Table 17. Parameters for SYSIN DD (continued)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RECONID=xxxxxxx</td>
<td>RECONID specifies the user-assigned RECON name to be used to select reports.</td>
</tr>
<tr>
<td></td>
<td>The value can be a maximum of 8 characters.</td>
</tr>
<tr>
<td></td>
<td>The default value is NORECON.</td>
</tr>
<tr>
<td></td>
<td>This parameter is optional.</td>
</tr>
<tr>
<td>RECON1=string</td>
<td>RECON1 specifies the RECON1 data set name to be used to select reports.</td>
</tr>
<tr>
<td></td>
<td>The value can be a maximum of 44 characters.</td>
</tr>
<tr>
<td></td>
<td>There is no default value.</td>
</tr>
<tr>
<td></td>
<td>This parameter is optional.</td>
</tr>
<tr>
<td>IMSID=xxx</td>
<td>Specifies the IMS ID of the members to be selected for this report.</td>
</tr>
<tr>
<td></td>
<td>This parameter is optional.</td>
</tr>
<tr>
<td>GRPTYPE=xxx,</td>
<td>Specifies the group type and name of the members to be selected for this</td>
</tr>
<tr>
<td>GRPNAME=xxxxxxx</td>
<td>report.</td>
</tr>
<tr>
<td></td>
<td>The value for GRPTYPE can be either CA or DBDS (groups defined to DBRC).</td>
</tr>
<tr>
<td></td>
<td>GRPNAME is the name of the group and should match the name of a defined</td>
</tr>
<tr>
<td></td>
<td>group.</td>
</tr>
<tr>
<td></td>
<td>The value can be a maximum of 8 characters.</td>
</tr>
<tr>
<td></td>
<td>These parameters are optional. If one of these parameters is specified, the</td>
</tr>
<tr>
<td></td>
<td>other parameter must also be specified.</td>
</tr>
<tr>
<td>DBD=xxxxxxx</td>
<td>Specifies DBD name of the members to be selected for this report.</td>
</tr>
<tr>
<td></td>
<td>The value can be a maximum of 8 characters.</td>
</tr>
<tr>
<td></td>
<td>This parameter is optional.</td>
</tr>
<tr>
<td>PART</td>
<td>AREA=xxxxxxx</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>DD=xxxxxxx</td>
<td>Specifies the database DD name of the members to be selected for this</td>
</tr>
<tr>
<td></td>
<td>report.</td>
</tr>
<tr>
<td></td>
<td>The value can be a maximum of 8 characters.</td>
</tr>
<tr>
<td></td>
<td>This parameter is optional.</td>
</tr>
</tbody>
</table>

**ID reference for IMS Tools products**

The following table specifies the IDs of IMS Tools products for use as values to the PRODUCTID parameter.
### Table 18. IDs of IMS Tools products for use as values to the PRODUCTID parameter

<table>
<thead>
<tr>
<th>Product ID</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>DA</td>
<td>IMS Database Reorganization Expert</td>
</tr>
<tr>
<td>DC</td>
<td>IMS High Performance Change Accumulation Utility</td>
</tr>
<tr>
<td>DE</td>
<td>IMS Recovery Expert for z/OS</td>
</tr>
<tr>
<td>DF</td>
<td>IMS Fast Path Solution Pack</td>
</tr>
<tr>
<td>DG</td>
<td>IMS Database Solution Pack, IMS Database Utility Solution</td>
</tr>
<tr>
<td>DH</td>
<td>IMS High Performance Prefix Resolution</td>
</tr>
<tr>
<td>DI</td>
<td>IMS High Performance Image Copy</td>
</tr>
<tr>
<td>DL</td>
<td>IMS High Performance Load</td>
</tr>
<tr>
<td>DP</td>
<td>IMS High Performance Pointer Checker</td>
</tr>
<tr>
<td>DR</td>
<td>IMS Database Recovery Facility</td>
</tr>
<tr>
<td>DS</td>
<td>IMS Recovery Solution Pack</td>
</tr>
<tr>
<td>DU</td>
<td>IMS High Performance Unload</td>
</tr>
<tr>
<td>DX</td>
<td>IMS IMS Index Builder</td>
</tr>
<tr>
<td>IB</td>
<td>IMS Buffer Pool Analyzer</td>
</tr>
<tr>
<td>IP</td>
<td>IMS Performance Analyzer</td>
</tr>
</tbody>
</table>

#### Example: HKTJEXPT JOB

```plaintext
//HKTJEXPT JOB (SYSUID,020,090,IDIA),'USER NAME',CLASS=A,TIME=10,
// REGION=0M,MSGCLASS=H,MSGLEVEL=(1,1),NOTIFY=SYSUID
//* IMSTools Knowledge Base VERSION 1 RELEASE 2
//* LICENSED MATERIALS - PROPERTY OF IBM
//* 5655-V93 COPYRIGHT IBM CORPORATION 2007,2010
//* ALL RIGHTS RESERVED.
//* US GOVERNMENT USERS RESTRICTED RIGHTS -
//* USE, DUPLICATION OR DISCLOSURE RESTRICTED
//* BY GSA ADP SCHEDULE CONTRACT WITH IBM CORP.
//* ---------------------------------------------------------------------
//* DIRECTIONS
//* -------
//* 1. CHANGE THE JOB CARD TO YOUR STANDARDS.
//* 2. CHANGE "HLQ1" TO THE HIGH LEVEL QUALIFIER FOR THE TARGET
//* LIBRARY
//* 3. CHANGE "SRVRNAME" TO THE NAME OF THE IMS Tools KB SERVER.
//* 4. CHANGE THE PRODUCTID, REPORTID, AND RECON PARAMETERS:
//* PRODUCTID AND REPORTID ARE PREDEFINED VALUES FOR THE
//* REPORT YOU ARE PRINTING
//* RECON AND THE OTHER PARAMETERS FORM THE "KEY" OF THE
//* STORED REPORT.
//* - RECON IS THE RECON ENVIRONMENT THE DATABASE BELONGS
//* - THE OTHER PARAMETERS MAY BE USED TO NAME THE DATABASE,
//* DD, AREA OR PARTITION, DBD, DBRC GROUP, ETC.
//* ** SEE THE USERS GUIDE FOR A COMPLETE DESCRIPTION
//* OF THESE PARAMETERS.
//* ---------------------------------------------------------------------
//* EXPORT A REPORT TO THE PRINTER.
//* ---------------------------------------------------------------------
//* //EXEC PGM=HKTJEXPT,PARM='ITKBSRVR=SRVRNAME'
//STEPLIB DD DISP=SHR,DSN=HLQ1.SHKTLOAD
//PRINT DD SYSOUT**
//SYSPRINT DD SYSOUT**
//SYSIN DD *
```

IBM Tools Base: IMS Tools Knowledge Base User’s Guide and Reference
**Example: HKTJEXPT report results**

The following report shows the results from an HKTJEXPT JOB that specified a product ID for IMS Recovery Solution Pack for z/OS: IMS Database Recovery Facility: Extended Functions and a report ID of 01. The history version specification called for the current version of the report plus the previous three versions.

The PRT indicator in the Action (Act) column indicates those reports that are printed.

<table>
<thead>
<tr>
<th>Act</th>
<th>Product</th>
<th>Report</th>
<th>DBD</th>
<th>Area/Part</th>
<th>DD</th>
<th>Recon ID</th>
<th>IMS ID</th>
<th>Type</th>
<th>Grp Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>IMS RE</td>
<td>IMS RE Summary</td>
<td>SY12</td>
<td>ITCPR12</td>
<td>SYSP12</td>
<td>MYRECON1</td>
<td>IT02</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IMS RE</td>
<td>IMS RE Summary</td>
<td>SY12</td>
<td>ITCPR12</td>
<td>SYSP12</td>
<td>MYRECON1</td>
<td>IT02</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IMS RE</td>
<td>IMS RE Summary</td>
<td>SY12</td>
<td>ITCPR12</td>
<td>SYSP12</td>
<td>MYRECON1</td>
<td>IT02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>IMS RE</td>
<td>IMS RE Summary</td>
<td>SY12</td>
<td>ITCPR12</td>
<td>SYSP12</td>
<td>MYRECON1</td>
<td>IT02</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

HKT2201I HKTJEXPT ended with RC=0000
Chapter 9. Product administration

You use options from the Administration menu of the IMS Tools Knowledge Base main menu to perform product administration tasks.

Topics:
• “Removing a product” on page 116
• “Removing a product release” on page 118
• “Removing all subscriptions and reports for a product” on page 120
Removing a product

You can select a product and remove all of its releases, subscriptions, and reports from the IMS Tools Knowledge Base environment.

Procedure

To remove a product from the IMS Tools Knowledge Base environment, complete the following steps:

1. Access the Administration menu from the IMS Tools Knowledge Base main menu panel.
   For example:

   ![Administration menu options](image)

   **Figure 60. Administration menu options**

   The Installed Products List panel is displayed.
   For example:

   ![Installed Products List panel](image)

   **Figure 61. Installed Products List panel**

3. Use the Remove Product row action (RP) for the appropriate product to remove all of its releases, subscriptions, and reports from the environment. Press Enter.
   The Confirm Remove Product message is displayed.
   For example:
4. To remove this release of the product, enter Y and press Enter.
   The Confirm Remove Subscription and Reports message is displayed.
   For example:

   Confirm remove product
   Removing this product will DELETE ALL it's saved reports.
   NO further reports can be recorded for this product.
   Press Enter to continue or End to exit.
   Product name
   IMS HP POINTER CHECKER
   Remove product . . N Y or N

   Figure 62. Confirm Remove Product message

5. Enter Y and press Enter.
   The Installed Products List is refreshed and the product no longer appears in
   the list.
Removing a product release

You can remove a specific release of a product from the IMS Tools Knowledge Base environment.

About this task

If the release is the only instance of the product remaining in the environment, then the Remove Product (RP) action is performed.

Procedure

To remove a product release from the IMS Tools Knowledge Base environment, complete the following steps:

1. Access the Administration menu from the IMS Tools Knowledge Base main menu panel.
   For example:

   ![Administration menu options](image1)

   **Figure 64. Administration menu options**

      The Installed Products List panel is displayed.
      The Product/Release column shows the version, release, and modification values for each installed product.
      For example:

      ![Installed Products List panel](image2)

      **Figure 65. Installed Products List panel**

      3. Use the Remove Release row action (RR) for the appropriate product to remove a specific product release from the environment. Press Enter.
         The selected product is removed from the list immediately.
If only one release of the product is found, the following message is displayed:

For example:

| Only one Release found for this Product. |
| Press Enter to remove the Product or End to exit. |
| Product name |
| IMS HP POINTER CHECKER |
| Product release |
| 020200 |
| Remove product . . . . . . . . N Y or N |

Figure 66. Only One Release Found for This Product message

4. To remove this release of the product, enter Y and press Enter.
   The Installed Products List is refreshed and the product release is no longer displayed in the list.
Removing all subscriptions and reports for a product

You can select a product and remove all its subscriptions and reports from the IMS Tools Knowledge Base environment.

Procedure

To remove all subscriptions and reports for a product from the IMS Tools Knowledge Base environment, complete the following steps:

1. Access the Administration menu from the IMS Tools Knowledge Base main menu panel.
   For example:

   ![Administration menu options](image)

   **Figure 67. Administration menu options**

   The Installed Products List panel is displayed.
   For example:

   ![Installed Products List panel](image)

   **Figure 68. Installed Products List panel**

3. Use the Remove Subscriptions (Subs) row action (RS) for the appropriate product (and release) to remove all of its subscriptions and reports from the environment. Press Enter.
   The Confirm Remove Subscription and Reports message is displayed.
   For example:
Confirm remove subscription and reports.

If there are a lot of report subscriptions to remove then the TSO session could be locked for some time.

Press Enter to continue or End to exit.

Product name
IMS HP POINTER CHECKER
Product release
020200

Report count ........... : 12
Remove subscriptions .... N Y or N

Figure 69. Confirm Remove Subscription and Reports message

The confirmation message identifies the product, its release, and its report count. You can either cancel or continue the action.

4. To remove all subscriptions and reports for this product (and release), enter Y and press Enter.
   The Installed Products List is refreshed.
Chapter 10. Report administration

You use options from the Administration menu of the IMS Tools Knowledge Base main menu to perform report administration tasks.

Topics:

- “Report retention overview” on page 124
- “Changing the default report retention values” on page 126
- “Changing the retention values for individual reports” on page 128
- “Resetting report retention values to the product default” on page 130
- “Synchronizing the repository with displayed retention values” on page 132
- “Enabling and disabling report recording” on page 134
Report retention overview

IMS Tools Knowledge Base retains old versions of your reports for historical reference.

IMS Tools products in the IMS Tools Knowledge Base environment can produce many different reports. These reports are saved and indexed by the product ID, report ID, and various other values that identify the database, area or partition, and data set that are the subject of the report.

When an IMS Tools product generates the same report for the same resource, the new report can either replace the previous report (history disabled) or be added to a series of reports that includes the current report and one or many history reports (history enabled).

The values for the following parameters determine how long reports are retained:

**DAYS=value**

The minimum number of days that a report must be stored in the repository before it can be deleted. Valid values are 0 - 32767.

**VERSIONS=value**

The minimum number of reports of a specified index value that must be stored in the repository before any reports can be deleted. Valid values are 0 - 32767.

When a new report is generated, the retention status is evaluated against any existing reports that contain the same index value. Reports that exceed both the minimum number of days and the minimum number of versions are deleted.

Most IMS Tools contain a default retention period of DAYS=30,VERSIONS=7. These defaults are based on the assumption that the customer reports for a given database are generated every two to four days at most. With a default retention period of 30 days and 7 versions, generating reports every two to four days over a 30 day period would result in 7 to 15 saved reports. With that same retention period, generating reports once or twice a week for a 30-day period would result in 4 to 7 saved reports. Depending on your environment, you might need to change the default retention period of the product or the product reports.

If you want the DAYS=value or VERSIONS=value to be the critical retention period, set one of the retention values to zero, as shown in the following example:

- To retain history for four days but not track the number of versions, set DAYS=4,VERSIONS=0.
  
  By using these settings, the reports for a database are retained for four days. The number of versions has no impact.

- To retain the history of four consecutive versions but not track the number of days, set DAYS=0,VERSIONS=4.
  
  By using these settings, the reports for a database retained for four versions. The number of days has no impact.

If the generated reports are a mixture of daily, weekly, and monthly critical retention values, consider allocating multiple output repository data sets and as follows:

- Repository O0000000: Configure products to generate reports to output repository O0000000 with a set of retention values where the number of days is the critical value.
- Repository O0000001: Configure products to generate reports to output repository O0000001 with a set of retention values where the number of weeks is the critical value
- Repository O0000002: Configure products to generate reports to output repository O0000002 with a set of retention values where the number of months is the critical value

In the following example, a report has a retention setting of DAYS=7, VERSIONS=7:
- If you run the same report for a resource once per day, seven history versions of the report are retained.
- If you run the same report for the same resource two times per day, 14 history versions of the report are retained, and the oldest version is seven days old.
- If you run the same report for the same resource once per week, seven history versions of the report are retained, and the oldest version is seven weeks old.

A retention setting of DAYS=0, VERSIONS=0 results in no retention of reports with the same index value. Only the current report is retained.

The retention period of DAYS=value, VERSIONS=value is an "and condition," not an "or condition." No reports are deleted unless both of the following conditions are met:
- The number of days the oldest report has been stored in the repository exceeds the DAYS value
- The number of report versions stored in the repository exceeds the VERSIONS value
Changing the default report retention values

Report retention settings are applied to all reports to control the growth of the report repository.

About this task

The retention values for a product's reports are provided by the product definition table when the product is registered with IMS Tools Knowledge Base.

This topic explains how you can change the product's default report retention values.

You can also change the retention values on a per-report basis. See "Changing the retention values for individual reports" on page 128.

Procedure

To change the product's default report retention values, complete the following steps:

1. Access the Administration menu from the IMS Tools Knowledge Base main menu panel.
   For example:

   ![](image1)

   Figure 70. Administration menu options

   The Installed Products List panel is displayed.
   For example:

   ![](image2)

   Figure 71. Installed Products List panel

3. Use the Subscriptions (Subs) List row action (S) for the appropriate product to list all of the report subscriptions that are defined to the product. Press Enter.
The Report Subscription List panel is displayed.
For example:

```
Global_Actions View Help

SERVER: FPQRDP01 Report Subscriptions List Row 1 to 16 of 20
Command ===>
Scroll ===>
PAGE

Select a row action or press End to exit.

Row actions: U Update

Product Name .. : IMS HP POINTER CHECKER
Product Release : 020200

<table>
<thead>
<tr>
<th>Act</th>
<th>Report Title</th>
<th>Days</th>
<th>Versions</th>
<th>Default</th>
<th>Record Repository</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>PRODUCT DEFAULTS</strong></td>
<td>5</td>
<td>1</td>
<td>Y</td>
<td>N/A</td>
</tr>
<tr>
<td>2</td>
<td>PC- HISAM DATA SET STAT</td>
<td>5</td>
<td>1</td>
<td>Y</td>
<td>N/A</td>
</tr>
<tr>
<td>3</td>
<td>PC- RUN TIME OPTION</td>
<td>5</td>
<td>1</td>
<td>Y</td>
<td>N/A</td>
</tr>
<tr>
<td>4</td>
<td>PC-BIT MAP DISPLAY</td>
<td>5</td>
<td>1</td>
<td>Y</td>
<td>N/A</td>
</tr>
<tr>
<td>5</td>
<td>PC-DB RECORD DIST</td>
<td>5</td>
<td>1</td>
<td>Y</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Figure 72. Report Subscriptions List panel

The first row contains the product defaults for report retention and report recording.

4. Use the **Update** row action (U) on the PRODUCT DEFAULTS row and change the retention values for **Days** and **Versions** as required. Press Enter.
All retention settings for reports with a Default setting of Y will change to the new default values.
Changing the retention values for individual reports

Report retention settings are applied to all reports to control the growth of the report repository.

About this task

The retention values for a product’s reports are provided by the product Definition Table when the product is registered with IMS Tools Knowledge Base.

You can change the product’s default report retention values. See “Changing the default report retention values” on page 126.

This topic explains how to change the retention values on a per-report basis.

Procedure

To change the retention values for individual reports, complete the following steps:

1. Access the Administration menu from the IMS Tools Knowledge Base main menu panel.
   For example:

   ![Administration menu options](image)

   **Figure 73. Administration menu options**

   The Installed Products List panel is displayed.
   For example:

   ![Installed Products List panel](image)

   **Figure 74. Installed Products List panel**

3. Use the Subscriptions (Subs) List row action (S) for the appropriate product to list all of the report subscriptions that are defined to the product. Press Enter.
   The Report Subscription List panel is displayed.
For example:

```
**PRODUCT DEFAULTS**

<table>
<thead>
<tr>
<th>Act</th>
<th>Report Title</th>
<th>Days</th>
<th>Versions</th>
<th>Default</th>
<th>Record Repository</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>PRODUCT DEFAULTS</strong></td>
<td>5</td>
<td>1</td>
<td>00000000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PC-HISAM DATA SET STAT</td>
<td>5</td>
<td>1</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td>PC-RUN TIME OPTION</td>
<td>5</td>
<td>1</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td>PC-BIT MAP DISPLAY</td>
<td>5</td>
<td>1</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td>PC-DB RECORD DIST</td>
<td>5</td>
<td>1</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td>PC-DB STAT</td>
<td>5</td>
<td>1</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>
```

Figure 75. Report Subscriptions List panel

The first row contains the product defaults for report retention and report recording.

4. Use the **Update** row action (U) on a specific report and change the retention values for **Days** and **Versions** as required. Press Enter.

   The panel is refreshed and shows the new retention values for the report. The Default setting for the report is automatically changed to N.

5. Perform the same task for all other reports that require customized retention settings.
Resetting report retention values to the product default

You can reset the retention values on all of the reports for a product to the product's default retention values.

About this task

The retention values for a product's reports are provided by the product definition table when the product is registered with IMS Tools Knowledge Base.

You can then change the retention values on individual reports. This task allows you to immediately reset the retention for all reports to the default settings.

Procedure

To reset the retention values on all reports for a product to the product's default values, complete the following steps:
1. Access the Administration menu from the IMS Tools Knowledge Base main menu panel.
   For example:

   ![Administration menu options](image)

   **Figure 76. Administration menu options**

      The Installed Products List panel is displayed.
      For example:

      ![Installed Products List panel](image)

      **Figure 77. Installed Products List panel**

   3. Use the Subscriptions (Subs) List row action (S) for the appropriate product to list all of the report subscriptions that are defined to the product. Press Enter.
      The Report Subscriptions List panel is displayed.
      For example:
4. From the **Global_Actions** menu, select option 1 (**RESET all retentions to product defaults**).
   For example:

   ```plaintext
   **Global_Actions** View Help
   
   SERVER: FPQRP01  Report Subscriptions List  Row 1 to 16 of 20
   Command ===>  Scroll ===> PAGE
   
   Select a row action or press End to exit.
   
   Row actions: U Update
   
   Product Name . . : IMS HP POINTER CHECKER
   Product Release : 020200
   
   Act Report Title  ----- Retention -----  Days Versions Default Record Repository
   — ** PRODUCT DEFAULTS ** — 5 1 Y Y 0000000
   — PC- HISAM DATA SET STAT — 5 1 Y Y N/A
   — PC- RUN TIME OPTION — 5 1 Y Y N/A
   — PC-BIT MAP DISPLAY — 5 1 Y Y N/A
   — PC-DB RECORD DIST — 5 1 Y Y N/A
   — PC-DB STAT — 5 1 Y Y N/A
   
   Figure 78. Report Subscriptions List panel
   
   5. Press Enter.
      The panel is refreshed and shows the default product retention values applied to all reports.
   ```
Synchronizing the repository with displayed retention values

The retention values that are set for reports are automatically conveyed to the IMS Tools Knowledge Base Output repository where reports are stored.

About this task

Scenarios are possible in which the retention values that are displayed in the Report Subscriptions List are not synchronized with the values that are recognized by the repository. Some possible examples include:

- The repository database is deleted and reformatted
- The repository is not available on the network when retention values are conveyed

You can ensure that the displayed retention values are the same as the values that are recognized by the repository by manually performing the synchronization task.

Procedure

To manually synchronize the repository with displayed retention values, complete the following steps:

1. Access the Administration menu from the IMS Tools Knowledge Base main menu panel.
   For example:

   ![Administration menu options](image)

   **Figure 80. Administration menu options**

2. Select option 2 (**List Installed Products**). Press Enter.
   The Installed Products List panel is displayed.
   For example:

   ![Installed Products List panel](image)

   **Figure 81. Installed Products List panel**
3. Use the Subscriptions (Subs) List row action (S) for the appropriate product to list all report subscriptions that are defined to the product. Press Enter. The Report Subscriptions List panel is displayed. For example:

```
Global_Actions View Help
SERVER: FPQRDP01 Report Subscriptions List Row 1 to 16 of 20
Command ==== Scroll ==== PAGE
Select a row action or press End to exit.
Row actions: U Update
Product Name . . : IMS HP POINTER CHECKER
Product Release : 020200

<table>
<thead>
<tr>
<th>Act</th>
<th>Report Title</th>
<th>Days</th>
<th>Versions</th>
<th>Default</th>
<th>Repository</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>** PRODUCT DEFAULTS **</td>
<td>5</td>
<td>1</td>
<td>Y</td>
<td>00000000</td>
</tr>
<tr>
<td>-</td>
<td>PC- HISAM DATA SET STAT</td>
<td>5</td>
<td>1</td>
<td>Y</td>
<td>N/A</td>
</tr>
<tr>
<td>-</td>
<td>PC- RUN TIME OPTION</td>
<td>5</td>
<td>1</td>
<td>Y</td>
<td>N/A</td>
</tr>
<tr>
<td>-</td>
<td>PC-BIT MAP DISPLAY</td>
<td>5</td>
<td>1</td>
<td>Y</td>
<td>N/A</td>
</tr>
<tr>
<td>-</td>
<td>PC-DB RECORD DIST</td>
<td>5</td>
<td>1</td>
<td>Y</td>
<td>N/A</td>
</tr>
<tr>
<td>-</td>
<td>PC-DB STAT</td>
<td>5</td>
<td>1</td>
<td>Y</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Figure 82. Report Subscriptions List panel
```

4. From the Global_Actions menu, select option 2 (SYNC synchronize repository with displayed retention values). For example:

```
Global_Actions View Help
1. RESET all retentions to product defaults
2. SYNC synchronize repository with displayed retention values

Figure 83. Global_Actions menu options
```

5. Press Enter. The Report Subscriptions List panel is refreshed.
Enabling and disabling report recording

You can enable or disable the automatic recording of reports to the IMS Tools Knowledge Base repository on a report-by-report basis.

About this task

The default record value for a product's reports are provided by the product definition table when the product is registered with IMS Tools Knowledge Base. After initial registration, all reports that are associated with that product are set with these values.

This topic explains how to change the record values on a per-report basis.

Procedure

To change the retention values for individual reports, complete the following steps:

1. Access the Administration menu from the IMS Tools Knowledge Base main menu panel.
   
   For example:

   ![Administration menu options](image)

   
   The Installed Products List panel is displayed.
   
   For example:

   ![Installed Products List panel](image)

3. Use the Subscriptions (Subs) List row action (S) for the appropriate product to list all report subscriptions that are defined to the product. Press Enter.
   
   The Report Subscriptions List panel is displayed.
   
   For example:
4. Use the **Update** row action (U) on a specific report and change the value for **Record** to N to not record reports or to Y to record reports. Press Enter.

   The panel is refreshed and shows the new Record values for the report.

5. Perform the same task for all other reports that require customized Record settings.
Part 4. Utilities reference

The topics in this section provide information about the IMS Tools Knowledge Base utilities.

Topics:
- Chapter 11, “IMS Tools Discovery Utility,” on page 139
- Chapter 12, “Import and Export Utility,” on page 141
Chapter 11. IMS Tools Discovery Utility

You can use the IMS Tools Discovery Utility (HKTDDSC0) to create an inventory of IMS databases, programs, and DBRC groups in the IMS Tools Knowledge Base HKT_INPUT repository.

The data stored in this inventory can be retrieved later by any IMS Tools product to perform its functions. Along with the RECON ID records which describe the IMS system libraries, the Discovery Utility inventory simplifies the configuration and customization tasks for IMS Tools products.

**Important:** To keep the data in the inventory up to date, this utility must be run after each DBDGEN, PSBGEN, or DBRC change for databases, programs, or groups.
Using the Discovery Utility

You can run the Discovery Utility by modifying and submitting the JCL.

Procedure

1. Copy the HKTDDSC0 member from *smphlq.SHKTSAMP* and modify it.

   ```plaintext
   //HKTDISCO JOB <JOB CARD PARAMETERS>
   //STEP1 EXEC PGM=HKTDDSC0,
   //      PARM=('ITKBSRVR='yourITKBservername',
   //            'RECONID='yourRECONID',
   //            'FUNC=CREATE|DELETE')
   //STEPLIB DD DISP=SHR,DSN=smphlq.SHKTLOAD
   //      DD DISP=SHR,DSN=ims.reslib
   //SYSPRINT DD SYSOUT=*  
   //SYSABEND DD SYSOUT=H
   //
   ```

   Where

   **yourITKBservername**
   
   The IMS Tools KB server name that the utility uses to connect to and create the inventory. The *yourITKBservername* is the same as the name that is defined in the FPQCONFG member in *smphlq.SHKTSAMP* for the XCF_GROUP_NAME= parameter. The XCF group name acts as the IMS Tools KB server name.

   **yourRECONID**
   
   The RECON ID that points to DBDLIB, PSBLIB, and RECONs that the utility uses to discover IMS databases, programs, and DBRC groups.

   **CREATE | DELETE**
   
   The function to be run.

   **CREATE**
   
   Build a new inventory or refresh of an existing inventory.

   **DELETE**
   
   Delete an existing inventory.

   **smphlq**
   
   The SMP/E high level qualifier for the SHKTLOAD load library.

   **ims.reslib**
   
   The IMS RESLIB data set name.

2. Submit the job.
Chapter 12. Import and Export Utility

The Import and Export Utility imports and exports a complete set or a subset of repository members across repositories.

Topics:
- “Import and Export Utility overview” on page 142
- “Importing or exporting a repository” on page 143
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- “Keyword reference for Import and Export Utility” on page 146
- “Usage scenarios for the Import and Export Utility” on page 158
Import and Export Utility overview

The Import and Export Utility imports and exports a complete set or a subset of repository members across repositories.

The export process writes the repository content to the import and export file (IMEXFILE). The export process does not update the repository.

The import process writes or appends the members that are specified in the IMEXFILE file to a single repository. During the import process, you can delete selected repository members and trim the repository member version.

You start the Import and Export Utility by running the HKTIMEX0 program. Input commands are entered by using the JCL PARM= specification, a SYSIN file, or a combination of both. If you specify both methods, the JCL PARM= is processed first followed by the SYSIN file.

A log file is generated that provided details about the calls to the repository and any processing issues. A report file is generated that provides details about the specific import and export processes.

Important: If you are importing or exporting only Policy Services members, use the Policy Services ISPF interface rather than the Import and Export Utility. If you are importing or exporting the entire HKT_INPUT repository, use the Import and Export Utility.

This process is illustrated in the following figure.

Figure 87. The Import and Export Utility
Importing or exporting a repository

You can import or export an entire repository or a selected subset of members, based on product and type, member name, and index data.

Before you begin

- Make sure that the repositories are Tools Base V1.6 compliant.
- Back up your repositories before using the Import and Export Utility. Sample library member HKTJIE01 contains sample JCL to back up a set of repositories. Sample member HKTJIE02 contains JCL to restore a set of repositories.
- Make sure that the IMS Tools Knowledge Base server is running.

About this task

Sample JCL is provided in members HKTJIE01 through HKTJIE11 to assist you with using the Import and Export Utility.

Procedure

1. Specify options by using the input commands from the JCL PARM= specification and the SYSIN file.

   Tip: You can generate a list of all available PROJECTs and FIELDS of the Import and Export Utility by submitting the following JCL:

   ```
   //EXPORT01 EXEC PGM=HKTIMEX0,REGION=0M,
   // PARM='EXPORT GROUP=srvrname REPOS=NONE'
   //STEPLIB DD DISP=SHR,DSN=itkbhlq.SHKTLOAD
   //SYSLOG DD SYSOUT=** <=LOGGING
   //SYSPRINT DD SYSOUT=** <=REPORT
   //SYSABEND DD SYSOUT=**
   //IMEXFILE DD DUMMY
   //SYSIN DD *
   LIST=ONLY C=(List keyword descriptions ONLY)
   /*
   2. Submit the job.
Import and Export Utility sample JCL

The IMS Tools Knowledge Base sample library file (SHKTSAMP) contains a set of members with sample JCL that can perform many of the Import and Export Utility tasks.

The following Import and Export Utility members are included in the SHKTSAMP library:

Table 19. Import and Export Utility sample library members

<table>
<thead>
<tr>
<th>Member name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HKTJIE01</td>
<td>This member contains sample JCL to back up a set of repositories to a data set by using the Import and Export Utility.</td>
</tr>
<tr>
<td>HKTJIE02</td>
<td>This member contains sample JCL to restore a set of repositories to a data set by using the Import and Export Utility.</td>
</tr>
<tr>
<td>HKTJIE03</td>
<td>This member contains sample JCL to export or import an entire repository by using the Import and Export Utility.</td>
</tr>
<tr>
<td>HKTJIE04</td>
<td>This member contains sample JCL to export or import RECON data to or from the HKT_INPUT repository by using the Import and Export Utility.</td>
</tr>
<tr>
<td>HKTJIE05</td>
<td>This member contains sample JCL to export or import discovery data from a RECON ID to or from the INPUT repository by using the Import and Export Utility.</td>
</tr>
<tr>
<td>HKTJIE06</td>
<td>This member contains sample JCL to export or import the Autonomics Director monitor list data to or from the IAV_AUTODIR repository by using the Import and Export Utility.</td>
</tr>
<tr>
<td>HKTJIE07</td>
<td>This member contains sample JCL to export all of the Autonomics Director data types from the IAV_AUTODIR repository, but import only the monitor list data by using the Import and Export Utility.</td>
</tr>
<tr>
<td>HKTJIE08</td>
<td>This member contains sample JCL to export or import product registration data to or from the HKT_REGISTRY repository by using the Import and Export Utility.</td>
</tr>
<tr>
<td>HKTJIE09</td>
<td>This member contains sample JCL to export or import sensor data to or from the BSN_SENSOR repository by using the Import and Export Utility.</td>
</tr>
<tr>
<td>HKTJIE10</td>
<td>This member contains sample JCL to list the descriptions of all of the available keywords in the Import and Export Utility.</td>
</tr>
<tr>
<td>HKTJIE11</td>
<td>This member contains sample JCL to export reports from the HKT_Omnnnnnn repository by using the Import and Export Utility.</td>
</tr>
</tbody>
</table>
Import and Export Utility DD statements

DD statements are used to identify the source of input and the placement of output information.

The following DD statements are specific to the Import and Export Utility:

**SYSLOG**
Contains the log file. The SYSLOG is set to LRECL=80 RECFM=FB. This DD name can be overridden.

**Tip:** Specify this statement as DD DUMMY to suppress the Import and Export Utility output.

**SYSPRINT**
Contains the report file. The SYSPRINT is set to LRECL=133 RECFM=FBA. This DD name can be overridden.

**IMEXFILE**
Contains the import or export data set content. The IMEXFILE is set to LRECL=256 RECFM=VB. This DD name can be overridden.

**SYSIN**
Contains the optional input command file. The SYSIN is set to LRECL=80 RECFM=FB. This DD name can be overridden.

The following example shows a standard invocation of the Import and Export Utility:

```
//SAMPLE EXEC PGM=HKTIMEX0,REGION=0M,PARM='input keywords'
//STEPLIB DD DISP=SHR,DSN=hlq.SHKTLOAD
//SYSLOG DD DUMMY
//SYSPRINT DD SYSOUT=* <= The report file
//SYSABEND DD SYSOUT=*  
//IMEXFILE DD DISP=SHR,DSN=yourhlq.imex.dataset
//SYSIN DD *    <= SYSIN file input commands
   ... input keywords ...  
/*
```

where:

**input keywords**
Input commands are entered by using the JCL PARM= specification, a SYSIN file, or a combination of both.

**DSN=hlq.SHKTLOAD**
The location of your sample data set.

**DSN=yourhlq.imex.dataset**
The location of your IMEXFILE.
Keyword reference for Import and Export Utility

You can modify Import and Export Utility keywords to control how the utility is started and how the utility runs.

Keyword reference overview

You can specify commands in both the JCL PARM= input string and the SYSIN input file, unless otherwise noted.

- The command syntax is free form. That is, you do not need to code each keyword on a separate line, and each line can begin in any column from 1 to 72.
- You can use spaces, commas, and semicolons as delimiters.
- Input from the JCL PARM= specification is a single string of varying length.
- Input from the SYSIN file must adhere to this format:
  - Each record can be a maximum of 80 characters with columns 73 through 80 treated as blanks.
  - The default maximum of uncommented records is 1000.
- Commands are entered as a keyword with zero or more values. For example, `Keyword=value` or `Keyword=(value1,value2,...,valuen)`.

The date and time stamps of the create and update members are set to the date and time of the import operation, not the export operation.

Repository aliases are members that have identical repository member data (RMD), but different repository index data (RID). Repository aliases are imported and exported as separate members. However, importing as a separate member does not affect the functional usage of these members. The size of the imported member can be larger than the exported member.

Certain keywords allow wildcard characters:

- An asterisk (*) matches 0 or more characters.
- A percent sign (%) matches a single character.

Default value types

Two types of defaults exist for some keywords:

1. **Implicit** default; what happens if the keyword is not used.
   For example, if the keyword `DELETE` is not specified, then the resulting behavior is the same as `DELETE=NO`.

2. **Explicit** default; what happens if the keyword is specified without a value.
   For example, if the keyword `DELETE` is specified, but without a value, the resulting behavior is the same as `DELETE=YES`.

Required keywords

The following keywords are required:

- **EXPORT=ddname**
  This required keyword defines the process as an export function in which one or more members of a repository are written to the import and export file (IMEXFILE).
  The use of the EXPORT keyword is mutually exclusive with the IMPORT keyword.
The EXPORT keyword can be specified as EXPORT, EXPRT, or EXP.

.ddname
This optional parameter specifies the DD name for the IMEXFILE.
The default value is IMEXFILE.

IMPORT=ddname
This required keyword defines the process as an import function in which one or more members of a repository are added, updated, or deleted based on the input import and export file (IMEXFILE).
The use of the IMPORT keyword is mutually exclusive with the EXPORT keyword.
The IMPORT keyword can be specified as IMPORT, IMPRT, or IMP.

.ddname
This optional parameter specifies the DD name for the IMEXFILE.
The default value is IMEXFILE.

GROUP=group_name
This required keyword specifies the XCF group or server name that contains the repository to be imported or exported.
The GROUP keyword can be specified as either GROUP or GRP.

REPOSITORY=repository_name
This required keyword specifies the name of the repository. The REPOSITORY keyword can be specified as either REPOSITORY or REPOS.
You can specify the following values for repository_name:

HKT_INPUT
The Input repository.

IAV_AUTODIR
The Autonomics Director repository.

BSN_SENSOR
The Sensor repository.

HKT_REGISTRY
The Registry repository.

HKT_Onnnnnnn
The standard Output repository where onnnnnn is the name of the output repository.

Restriction: You cannot import or export the Catalog repository by using the Import and Export Utility.

Optional keywords

The following keywords are optional:

COMMENT=(comment_statement)
This optional keyword specifies that a comment is added as the value of the comment keyword.
The comment_statement value must adhere to the syntax rules of a keyword or value pair. The comment_statement value can have a null value.
The COMMENT keyword can be specified as either COMMENT or C.
The COMMENT keyword is an alternative to specifying comments by using an asterisk in column 1 of a SYSIN input file record.

For example:

```
EXPORT GROUP=servername HISTORY=NO MAXSIZE(16) C=(PROJECT NAME) PROJECT=DISCOVERY C=(PRINT LIST OF PROJECTs) LIST FIELD=(NAME=DISC_MTYPE,STRING=DISC) C=(ALL MEMBERS ARE 'DISC')
FIELD=(NAME=DISC_MVERS,STRING=0001) C=(ALL MEMBERS ARE '0001')
FIELD=(NAME=DISC_RECON_STRING,STR=$ADUT3)
FIELD=(NAME=DISC_DATABASE,PATTERN=REC*)

COMMIT=YES|NO|IGNORE
```

This optional keyword specifies whether updates to the repository are committed and whether changes are locked in a single unit of work or handled on a case-by-case basis.

**Important:** Back up your repository before specifying COMMIT=YES and COMMIT=IGNORE.

The COMMIT keyword can be specified as either COMMIT or COMM.

**YES** Changes are committed and the repository is locked in a single unit of work.

If an error occurs during processing, all scheduled updates are backed out.

**NO** Changes are not committed and the repository is locked in a single unit of work.

If the processing succeeds to the end, the return code is set to 4.

**IGNORE** Changes are committed independently on a case-by-case basis without setting a unit of work.

If an error occurs during the processing, only some members are updated.

Both implicit and explicit default value is COMMIT=YES.

**Tip:** You can perform validity checking of the Import and Export Utility process by specifying COMMIT=NO. Validity checking is useful with the SYSPRINT output report or the SYSLOG file.

**DELETE=YES|NO|COND**

This optional keyword specifies whether to delete members for all versions before importing.

The DELETE keyword can be specified as either DELETE or DEL.

**Important:** Back up your repository before specifying DELETE=YES or DELETE=COND.

**YES** Deletes the member before writing. The member must exist in the repository.

**NO** Retains any existing version of the member. The member that is written becomes the newest version.

**COND** Deletes the member before writing. The member does not need to exist.
The implicit value default is \texttt{DELETE=NO}.

The explicit default value is \texttt{DELETE=YES}.

\texttt{FIELD=(keyword1=value1, keyword2=value2, ... keywordN=valueN)}

This optional keyword specifies the FIELD name, where \texttt{field\_name} is a maximum 64-character name.

A named entity that can contain the following keyword values:

\textbf{AND|OR}

This value specifies the Boolean AND or OR operation.

The OR operation takes precedence over the AND operation.

\textbf{NAME=field\_name}

This required keyword specifies a field name that is either defined in the current or global project.

The \texttt{field\_name} value contains the RID location and the data type to be validated or compared.

The NAME keyword can be specified as either NAME or NAM.

\textbf{OPERATOR=operator\_name}

This keyword specifies which comparison test is used between the field entry in the RID and the specified field value.

Valid \texttt{operator\_name} values are:

\textbf{EQUAL}

Test that operators are equal. The EQUAL keyword can be specified as either \texttt{EQUAL} or \texttt{EQ}.

\textbf{NOT\_EQUAL}

Test that operators are not equal. The NOT\_EQUAL keyword can be specified as either \texttt{NOT\_EQUAL} or \texttt{NE}.

\textbf{LESS\_THAN\_OR\_EQUAL}

Test that operators are less than or equal to each other. The LESS\_THAN\_OR\_EQUAL keyword can be specified as either \texttt{LESS\_THAN\_OR\_EQUAL} or \texttt{LTE}.

\textbf{LESS\_THAN}

Test that operators are less than each other. The LESS\_THAN keyword can be specified as either \texttt{LESS\_THAN} or \texttt{LT}.

\textbf{GREATER\_THAN\_OR\_EQUAL}

Test that operators are greater than or equal to each other. The GREATER\_THAN\_OR\_EQUAL keyword can be specified as either \texttt{GREATER\_THAN\_OR\_EQUAL} or \texttt{GTE}.

\textbf{GREATER\_THAN}

Test that operators are greater than each other. The GREATER\_THAN keyword can be specified as either \texttt{GREATER\_THAN} or \texttt{GT}.

\textbf{PACKED\_UNSIGNED=numeric\_value}

This keyword specifies the entire field must contain an unsigned packed number.

Each byte must contain two packed digits. The maximum length is 256 bytes.
The PACKED_UNSIGNED keyword can be specified as either PACKED_UNSIGNED or PKU.

**PACKED_SIGNED=numeric_value**
This keyword specifies the entire field must contain a signed packed number.

Each byte except the last must contain two packed digits. The last byte must contain a packed digit and a sign field. The maximum length is 16 bytes.

The PACKED_SIGNED keyword can be specified as either PACKED_SIGNED or PKS.

**PADZERO**
This keyword specifies that the comparison of RECON data set names are padded with any combination of hex zeros or blanks.

This keyword does not apply to any other field type.

The PADZERO keyword can be specified as PADZERO, PZERO, or PZ.

**RECON_DSNAME=recon_dataset_name**
This keyword specifies the name of a RECON data set name that is compared to any RECON type, including a RECON data set name, an external 8-byte character RECON identifier, or an internal 4-byte binary RECON identifier.

The recon_dataset_name value must be defined as an entry in the RECON registry.

The RECON_DSNAME keyword can be specified as RECON_DSNAME, RECON_DSN, or RDS.

**RECON_INTERNAL=recon_internal_value**
This keyword specifies a 4-byte binary RECON value that is compared to any RECON type, including a RECON data set name, an external 8-byte character RECON identifier, or an internal 4-byte binary RECON identifier.

The recon_internal_value value must be defined as an entry in the RECON registry.

The RECON_INTERNAL keyword can be specified as RECON_INTERNAL, RECON_INT, or RII.

**RECON_EXTERNAL=recon_external_value**
This keyword specifies an 8-byte character RECON string that is compared to any RECON type, including a RECON data set name, an external 8-byte character RECON identifier, or an internal 4-byte binary RECON identifier.

The recon_external_value value must be defined as an entry in the RECON registry.

The RECON_EXTERNAL keyword can be specified as RECON_EXTERNAL, RECON_EXT, or RXI.

**STRING**
This keyword specifies a value for a string type value. A string is defined as a series of valid print type characters, including:

• Alphabetic (A to Z)
The STRING keyword can be specified as either STRING or STR. If necessary, the string is considered to be padded with blanks. If you want the string to contain any other characters, then consider using the MIXED or HEXADECIMAL field keywords.

**HEXADECIMAL=hexadecimal_string**
This keyword specifies a value for string type value as a series of hexadecimal digits. The number of hexadecimal digits must be an even number.

Each hexadecimal digit occupies a half-byte. If the number of bytes filled is less than the field length, the remaining bytes are set to zero (x'00').

The HEXADECIMAL keyword can be specified as either HEXADECIMAL or HEX.

**LENGTH=length**
This keyword specifies an overriding length value for string type fields.

The length is expressed as a numeric value. The length value must be a positive integer whose value is within the current field definition.

The field definition value is calculated by adding the values of the POSITION and LENGTH keywords.

The LENGTH keyword can be specified as either LENGTH or LEN.

**MIXED=mixed_string**
This keyword specifies a value for a mixed string.

A mixed string provides a way to express values as hex, but without using the HEX keyword. A mixed string can contain both characters and hexadecimal representations for a comparison value.

The MIXED keyword is useful for characters that can interfere with parsing or that are white space (for example, C++ terminology).

The MIXED keyword can be specified as MIXED, MIXD, or MXD.

A mixed_string value is composed of a forward slash (/), an escape type indicator, and zero, one, or two characters with the escape value setting. Available characters are:

- Alphabetic (A to Z)
- Numeric (0 - 9)
- '!','@','#','$','%','&','*','_','-','+','=','{','}','|','<','>','.','?','/'

For example, consider a field called PERSON that is 36 characters long, left-aligned, and blank-filled:

- To have the name of a person with the first and family name separated by a blank, include the following FIELD keyword:
FIELD=(NAME=PERSON,MIXED=JOHN/BDOE/B)

The /B is substituted with a blank space, so it would be JOHN DOE. The first /B is the name separator, and the final /B acts as both the character at the end of the name and the fill character to make the entry padded with enough blanks to make it 40 characters long.

- To have the name enclosed in quotation marks, include the following FIELD keyword:
  FIELD=(NAME=PERSON,MIXED=/QJOHN/BDOE/Q/B)

- To use tab characters, which are x'05', to surround the name, include the following FIELD keyword:
  FIELD=(NAME=PERSON,MIXED=/X05JOHN/BDOE/X05/B)

POSITION=position
This keyword specifies an overriding position value for string type fields.

The position is expressed as a numeric value for the zero origin start within the current field.

If the POSITION value is greater than zero, you must specify the LENGTH keyword. The position value must be a positive integer whose value is within the current field definition. The field definition value is calculated by adding the values of the POSITION and LENGTH keywords.

The POSITION keyword can be specified as either POSITION or POS.

STRINGZ=string
This keyword specifies a value for a string type value. A string is defined as a series of valid print type characters, including:

- Alphabetic (A to Z)
- Numeric (0 - 9)
- '!','@','#','$','%','&','*','_','-','+','=','{','}','|','<','>','?','/

The STRINGZ keyword can be specified as either STRINGZ or STRZ.

If necessary, the string is considered to be padded with X'00'. If you want the string to contain any other characters, consider using the MIXED or HEXADECIMAL field keywords.

PATTERN=pattern_string
This keyword specifies the string type value as pattern string.

A pattern string is similar to the STRING keyword, except that it allows for the use of wildcard characters.

The PATTERN keyword can be specified as either PATTERN or PAT.

SIGNED_BINARY=numeric_value
This keyword specifies a value for comparison with binary type fields.
This keyword can be used for either a signed or unsigned binary field type.

The SIGNED_BINARY keyword can be specified as SIGNED_BINARY, SBIN, or SBI.

**SIGNED_PACKED=numeric_value**

This keyword specifies a value for comparison with signed packed type fields.

This keyword can be used only for a signed packed field type.

The SIGNED_PACKED keyword can be specified as SIGNED_PACKED, SPACK, or SPN.

**UNSIGNED_BINARY=numeric_value**

This keyword specifies a value for comparison with binary type fields. The UNSIGNED_BINARY keyword can be specified as UNSIGNED_BINARY, UBIN, or UBI.

**UNSIGNED_PACKED=unsigned_packed_string**

This keyword specifies a value for comparison with unsigned packed type fields.

The unsigned_packed_string value must contain only decimal digits.

The UNSIGNED_PACKED keyword can be specified as UNSIGNED_PACKED, UPACK, or UPN.

**HISTORY=YES|NO**

This optional keyword specifies whether to include all versions or only the latest version of the specified member.

The HISTORY keyword can be specified as either HISTORY or HIST.

Imported versions are appended to existing members and are considered new members. Imported versions are applied in the same sequence as exported versions.

**YES** Include all versions.

**NO** Only the latest version of the selected members is included.

Both implicit and explicit default value is HISTORY=YES.

**Tip:** You can trim multiple member versions to the latest member version by specifying HISTORY=NO.

**ISEMPTY=YES|NO**

This optional keyword specifies whether to check that a repository is empty, before an import operation.

This option is ignored for export operations.

The ISEMPTY keyword can be specified as either ISEMPTY or ISEMP.

**YES** Verify that the repository is empty before the import operation.

**NO** Do not verify whether the repository is empty before the import operation.

For import operations, the implicit default value is ISEMPTY=NO.
For import operations, the explicit default value is ISEMPTY=YES.
LIST=YES | NO | ONLY
This optional keyword specifies whether to print the available PROJECTs and FIELDs on the output report file.

The LIST keyword can be specified as either LIST or LST.

YES | NO
Print the available PROJECTs and FIELDs and continue processing.

NO
Do not print the available PROJECTs and FIELDs.

ONLY
Print the available PROJECTs and FIELDs and terminate processing. If processing is successful, the return code is 4.

Requirement: If you specify LIST=ONLY, you must also specify the REPOSITORY=NONE.

The implicit default value is LIST=NO.
The explicit default value is LIST=YES.

MAXDATASIZE=data_size_numeric_value
This optional keyword specifies the maximum character size of the Import and Export Utility member RMD (data component) that is printed on the output report file.

The MAXDATASIZE keyword can be specified as either MAXDATASIZE or MAXDSIZE.

Choose an appropriate data_size_numeric_value value so that the output report is not too large.
The default value is 0, which means that RMD (data component) is not printed.

Important: A MEMBER_PRINT=NO specification overrides any MAXDATASIZE setting.

MEMBER_PRINT=YES | NO | COND
This optional keyword specifies whether the Import and Export Utility member index component (RID) and data component (RMD) are included in the output report.

The RID contains the member identification, system, and optional high-impact data for a member.

The MEMBER_PRINT keyword can be specified as MEMBER_PRINT, MEMPRINT, or MEMPRT.

The values for the MEMBER_PRINT keyword are:

YES
Print the RID and RMD data. The RMD is printed only if MAXDATASIZE is greater than 0.

NO
Do not print the RID and RMD data.

Important: A MEMBER_PRINT=NO specification overrides any MAXDATASIZE setting.

COND
Print the RID and RMD only if DELETE=YES is specified.

Both implicit and explicit default value is MEMBER_PRINT=YES.
NOEXIST=YES\NO
This optional keyword specifies whether to validate that the target repository does not already contain the members to be imported.

The NOEXIST keyword can be specified as either NOEXIST or NOEX.

**Restriction:** The NOEXIST keyword is valid only for import operations in which DELETE=NO is also specified; otherwise it is ignored.

The values for the NOEXIST keyword are:

- **YES**  Validate whether the target repository already contains members to be imported.
- **NO**  Do not validate whether the target repository already contains members to be imported.
  
  If the member exists, the imported member becomes a newer member version.

Both implicit and explicit default value is NOEXIST=NO.

**PRODUCT=member_product_identification**
This optional keyword specifies the product that is being processed, identified by a product identifier.

The PRODUCT keyword can be specified as PRODUCT, PROD, or PRD.

You can use a wildcard character.

The default value is all products.

**PROJECT=project_name**
This optional keyword specifies the name of the PROJECT.

A PROJECT is a set of predefined input values that can include REPOSITORY, PRODUCT, TYPE, and FIELD.

The keywords that are contained in the PROJECT take effect as if they were individually specified. Their values are immediately available for use, overriding the global PROJECT fields.

The PROJECT keyword can be specified as either PROJECT or PROJ.

Valid values for `project_name` are:

**AUTONOMICS_DIRECTOR**
Defines the Autonomics Director repository members for all types.
The types are MON for monitored database member, GRP for group, PER for period, and CAC for cached items. The specific types can be overridden by the TYPE keyword specification.

**AUTONOMICS_DIRECTOR_CAC**
Defines the Autonomics Director repository members for the CAC type.

**AUTONOMICS_DIRECTOR_GRP**
Defines the Autonomics Director repository members for the GRP type.

**AUTONOMICS_DIRECTOR_MON**
Defines the Autonomics Director repository members for the MON type.
AUTONOMICS_DIRECTOR_PER
Defines the Autonomics Director repository members for the PER type.

DISCOVERY
Defines stored discovery data for databases and groups. This project_name is the generic version for all types.

DISCOVERY_DATABASE
Defines stored discovery data for the DATABASE type.

DISCOVERY_GROUP
Defines stored discovery data for GROUP type.

OUTPUT_REPORT
Defines the output report repository.

The OUTPUT_REPORT project is designed to access the first output repository, for example HKT_O0000000. To override this output repository value, add a REPOSITORY statement.

PRODUCT_REGISTRY
Defines the product registry definitions.

RECON_REGISTRY
Defines the RECON registry.

REPORT_REGISTRY
Defines the product report registry.

SENSOR_DATA
Defines the sensor data repository members.

Tip: Specify LIST=YES to print the available PROJECTs and FIELDS.

SCAN=YES|NO
This optional keyword specifies whether to scan the keywords for correct syntax before running the import or export process.

The SCAN keyword can be specified as either SCAN or SCN.

YES Verify the syntax and keywords of the command, but do not run the import or export process.

A return code of 4 indicates the syntax and keywords of the command are valid.

Tip: Specifying SCAN=YES is similar to specifying TYPRUN=SCAN on JCL.

NO Run the import or export process without verifying the syntax and keywords of the command.

The implicit default value is SCAN=NO.

The explicit default value is SCAN=YES.

TYPE=member_type_identification
This optional keyword specifies the type identifiers for all Import and Export Utility members.

The TYPE keyword can be specified as either TYPE or TYP.
Tip: The TYPE keyword is different from the FIELD=(NAME=TYPE, ...) specification.

You can use a wildcard character.

The default value is all types.
Usage scenarios for the Import and Export Utility

The following usage scenarios address some of the more common ways to import and export data from repositories by using the Import and Export Utility.

Topics:
- “Scenario: Exporting discovery data and RECON data from Autonomics Director”
- “Scenario: Exporting sensor data from the BSN_SENSOR repository” on page 160
- “Scenario: Exporting all Autonomics Director data from the Autonomics Director repository” on page 161
- “Scenario: Exporting RECON data from the HKT_INPUT repository” on page 162
- “Scenario: Exporting product registration data from the HKT_REGISTRY repository” on page 163
- “Scenario: Trimming a version by using the Import and Export Utility” on page 164

Scenario: Exporting discovery data and RECON data from Autonomics Director

This scenario demonstrates how to export data discovery members from the Autonomics Director repository by using the Import and Export Utility.

About this task

Exporting data discovery members from Autonomics Director is useful in the following situations:
- To import the data into another repository running on a different server
- To take a checkpoint of the repository
- To recover the repository to a specific point in time
- To trim the number of versions of members by using an import with delete capabilities

Tip: Sample JCL is provided in member HKTJIE05 to export or import discovery data from a RECON ID to or from the HKT_INPUT repository by using the Import and Export Utility.

Procedure

1. Specify options by using the input commands from the JCL PARM= specification and the SYSIN file.
   a. Customize the SYSPRINT DD statement for the report file, which shows the results of the processing. For example:
      
      //SYSPRINT DD DSN=EXDDSCN.IMEX.PRINT,DISP=SHR,  
      // UNIT=3390, VOL=SER=IMSTL7
   b. Customize the IMEXFILE DD statement. This statement is the target file for an export operation. It contains the selected data from the repository based on control statements. For example:
      
      //IMEXFILE DD DSN=EXDDSCN.IMEX.EXPORT.DSC.DATA,DISP=(,CATLG),  
      // UNIT=SYSDB, SPACE=(CYL,(10)),  
      // DCB=(LRECL=256,RECFM=VB,DSORG=P5)
c. Customize the SYSIN DD statement, which contains the control statements. For example:

```plaintext
EXPORT GROUP=FPQSRVT3 REPOS=IAV_AUTODIR
HISTORY=NO MAXDSIZE(100)
PROJECT=DISCOVERY C=(DISCOVERY)
FIELD=(NAME=DISC_MTYPE,STRING=DISC) C=('DISC' members)
```

where:

- **EXPORT** Indicates that the operation is to export data from the repository into the Import and Export Utility file (IMEXFILE).
- **GROUP=FPQSRVT3** Indicates that FPQSRVT3 is the group or server that is associated with the repository shown in the data export operation.
- **REPOS=IAV_AUTODIR** Indicates IAV_AUTODIR as the name of the repository that contains the data for export.

**Remember:** The IAV_AUTODIR repository is contained on the FPQSRVT3 group or server.

- **MAXDSIZE(100)** Indicates that members that are printed to the SYSPRINT output are limited to 100 GB of RMD data.
- **FIELD=(NAME=DISC_MTYPE,STRING=DISC)** Indicates that you want to include only discovery members with names that match the string DISC.
- **FIELD=(NAME=DISC_RECON_STRING,STR=$ADUT3)** Indicates that you want to include only discovery members associate with RECON ID $ADUT3.

2. Submit the job and ensure that it completes with a return code=0.

**Example**

In the following example, the JCL to export discovery members from Autonomics Director is shown:

```plaintext
//*********************************************************************
//* EXPORT AUTONOMICS DIRECTOR DISCOVERY MEMBERS
//*********************************************************************
//EXPDISC EXEC PGM=HKTIMEX0,REGION=0M,
//STEPLIB DD DISP=SHR,DSN=DBGTOOL.IMSADM.SIAVLOAD
//STEPLIB DD DISP=SHR,DSN=EXDDSCN.HKT2.LOAD
//DD DISP=SHR,DSN=EXDDSCN.IAV3.LOAD
//****** DD DISP=SHR,DSN=IMSBLD.HAHN210.ABSNLOAD
//****** DD DISP=SHR,DSN=IMSBLD.HAHN210.SBSNLOAD
//DD DISP=SHR,DSN=IMSTOOL.HKT120CP.SHKTLOAD
//DD DISP=SHR,DSN=SYS1.CSSLIB
//DD DISP=SHR,DSN=IMSTOOL.FPQ120M.D100819.SFPQLMD0
//DD DISP=SHR,DSN=IMSTOOL.FPQ12007.SFPQLMD0
//DD DISP=SHR,DSN=IMSTOOL.FPQ1203E.SPPELMDO
//SYSPRINT DD DSN=EXDDSCN.IMEX.PRINT,DISP=SHR,
//UNIT=3390,Vol=SER=IMSTL7
//IMEXFILE DD DSN=EXDDSCN.IMEX.EXPORT.DSC.DATA,DISP=(,CATLG),
//UNIT=SYSDA,SPACE=(CYL,(10)),
//DCB=(LRECL=256,RECFM=VB,DSORG=PS)
//SYSCBEND DD SYSSUT=*'
//SYSIN DD *
EXPORT GROUP=FPQSRVT3 REPOS=IAV_AUTODIR
HISTORY=NO MAXDSIZE(100)
```
PROJECT=DISCOVERY  C=(DISCOVERY)
FIELD=(NAME=DISC_MTYPE,STRING=DISC)  C=('DISC' members)
FIELD=(NAME=DISC_RECON_STRING,STR=$ADUT3)  C=(your RECONID)
/*

Scenario: Exporting sensor data from the BSN_SENSOR repository

This scenario demonstrates how to export sensor data from the BSN_SENSOR repository by using the Import and Export Utility.

About this task

Sample JCL provided in member HKTJIE09 to export or import sensor data to or from the BSN_SENSOR repository by using the Import and Export Utility.

Procedure

1. Specify options by using the input commands from the JCL PARM= specification and the SYSIN file.
   a. Customize the SYSPRINT DD statement for the report file, which shows the results of the processing. For example:
      //SYSPRINT DD DSN=EXDDSCN.IMEX.PRINT,DISP=(,CATLG),
      // UNIT=3390,Vol=SER=IMSTL7
   b. Customize the IMEXFILE DD statement. This statement is the target file for an export operation. It contains the selected data from the repository based on control statements. For example:
      //IMEXFILE DD DSN=EXDDSCN.IMEX.DATA,DISP=(,CATLG),
      // UNIT=SYSDA,SPACE=(CYL,(10)),
      // DCB=(LRECL=256,RECFM=VB,DSORG=P5)
   c. Customize the SYSABEND DD statement, which contains the abend information. For example:
      SYSABEND DD SYSOUT=*  
   d. Customize the SYSIN DD statement, which contains the control statements. For example:
      EXPORT GROUP=FPQSRVT3 REPOS=BSN_SENSOR
      HISTORY=NO MAXDSIZE(1G)
      PROJECT=SENSOR_DATA  C=(SENSOR data)
      FIELD=(NAME=DATABASE STRING=DISC)

where:

**EX**
Indicates that the operation is to export data from the repository into the Import and Export Utility file (IMEXFILE).

**GROUP=FPQSRVT3**
Indicates that FPQSRVT3 is the group or server that is associated with the repository shown in the data export operation.

**MAXDSIZE(1G)**
Indicates that members that are printed printed to the SYSPRINT output are limited to 1 GB of RMD data.

**REPOS=BSN_SENSOR**
Indicates BSN_SENSOR as the name of the repository that contains the data for export.
FIELD=(NAME=DATABASE STRING=DISC)
Indicates that you want to include only databases with names whose bytes match the string DISC.

2. Submit the job and ensure that it completes with a return code=0.

Scenario: Exporting all Autonomics Director data from the Autonomics Director repository

This scenario demonstrates how to export all Autonomics Director data from the Autonomics Director repository by using the Import and Export Utility.

About this task

Sample JCL is provided in member HKTJIE07 to import or export all of the Autonomics Director data types from the IAV_AUTODIR repository by using the Import and Export Utility.

Procedure

1. Specify options by using the input commands from the JCL PARM= specification and the SYSIN file.
   a. Customize the SYSPRINT DD statement for the report file, which shows the results of the processing. For example:
   //SYSPRINT DD DSN=EXODSCN.IMEX.PRINT,DISP=SHR,
   // UNIT=3390,VOL=SER=IMSTL7
   b. Customize the IMEXFILE DD statement. This statement is the target file for an export operation. It contains the selected data from the repository based on control statements. For example:
   //IMEXFILE DD DSN=EXODSCN.IMEX.AUTODIR.DATA,DISP=(,CATLG),
   // UNIT=SYSDA,SPACE=(CYL,(10,10)), USER'S CHOICE
   // DCB=(LRECL=256,RECFM=VB,DSORG=PS)
   c. Customize the SYSIN DD statement, which contains the control statements. For example:

   EXPORT GROUP=FPQSRVT3 REPOS=IAV_AUTODIR
   HISTORY=NO MAXDSIZE(100)
   PROJECT=AUTODIR C=(Autonomics Director all types)
   FIELD=(NAME=TYPE,STRING=MON) C=(Monitor List)
   FIELD=(OR NAME=TYPE,STRING=GRP) C=(Group definition)
   FIELD=(OR NAME=TYPE,STRING=PER) C=(Period Data)
   FIELD=(OR NAME=TYPE,STRING=CAC) C=(Cached Data)

   where:

   EXPORT Indicates that the operation is to export data from the repository into the Import and Export Utility file (IMEXFILE).

   GROUP=FPQSRVT3 Indicates that FPQSRVT3 is the group or server that is associated with the repository shown in the data export operation.

   REPOS=IAV_AUTODIR Indicates IAV_AUTODIR as the name of the repository that contains the data for export.

   Remember: The IAV_AUTODIR repository is contained on the FPQSRVT3 group or server.
MAXDSIZE(100)
Indicates that members that are printed to the SYSPRINT output are limited to 100 GB of RMD data.

PROJECT=AUTODIR
Indicates that the PROJECT selected is AUTODIR, a PROJECT that selects all Autonics Director data.

2. Submit the job and ensure that it completes with a return code=0.

Scenario: Exporting RECON data from the HKT_INPUT repository
This scenario demonstrates how to export RECON data from the HKT_INPUT repository by using the Import and Export Utility.

About this task
Sample JCL provided in member HKTJIE04 to export or import RECON data to or from the HKT_INPUT repository by using the Import and Export Utility.

Procedure
Specify options by using the input commands from the JCL PARM= specification and the SYSIN file.

1. Customize the SYSPRINT DD statement for the report file, which shows the results of the processing. For example:
   //SYSPRINT DD DSN=EXDDSCN.IMEX.PRINT,DISP=SHR,
   // UNIT=3390,VOL=SER=IMSTL7

2. Customize the IMEXFILE DD statement. This statement is the target file for an export. It contains the selected data from the repository based on control statements. For example:
   //IMEXFILE DD DSN=EXDDSCN.IMEX.EXPORT.RCNREG.DATA,
   // DISP=(,CATLG),
   // UNIT=SYSDA,SPACE=(CYL,(10)),
   // DCB=(LRECL=256,RECFM=VB,DSORG=PS)

3. Customize the SYSIN DD statement, which contains the control statements. For example:
   EXPORT GROUP=FPQSRVT3 REPOS=HKT_INPUT
   HISTORY=NO MAXDSIZE(100)
   PROJECT=RCNREG

where:

EXPORT Indicates that the operation is to export data from the repository into the Import and Export Utility file (IMEXFILE).

GROUP=FPQSRVT3
Indicates that FPQSRVT3 is the group or server that is associated with the repository shown in the data export operation.

REPOS=HKT_INPUT
Indicates HKT_INPUT as the name of the repository that contains the data for export.

Remember: The HKT_INPUT repository is contained on the FPQSRVT3 group or server.
**Scenario: Exporting product registration data from the HKT_REGISTRY repository**

This scenario demonstrates how to export product registration data from the HKT_REGISTRY repository by using the Import and Export Utility.

**About this task**

Sample JCL provided in member HKTJIE08 to export or import product registration data to or from the HKT_REGISTRY repository by using the Import and Export Utility.

**Procedure**

1. Specify options by using the input commands from the JCL PARM= specification and the SYSIN file.
   a. Customize the SYSPRINT DD statement for the report file, which shows the results of the processing. For example:
      ```
      //SYSPRINT DD DSN=EXDDSCN.IMEX.PRINT,DISP=(,CATLG),
      //UNIT=3390,VOL=SER=IMSTL7
      ```
   b. Customize the IMEXFILE DD statement. This statement is the target file for an export operation. It contains the selected data from the repository based on control statements. For example:
      ```
      //IMEXFILE DD DSN=EXDDSCN.IMEX.EXPORT.PRODREG.DATA,
      //DISP=(,CATLG),
      //UNIT=SYSDA,SPACE=(CYL,(10)),
      //DCB=(LRECL=256,RECFM=VB,DSORG=PS)
      ```
   c. Customize the SYSABEND DD statement, which contains the abend information. For example:
      ```
      SYSABEND DD SYSOUT=* 
      ```
   d. Customize the SYSIN DD statement, which contains the control statements. For example:
      ```
      EXPORT GROUP=FPQSRVT3 REPOS=HKT_REGISTRY
      HISTORY=NO MAXDSIZE(1G)
      PROJECT=PRODREG
      ```
      where:

      **EXPORT**
      Indicates that the operation is to export data from the repository into the Import and Export Utility file (IMEXFILE).

      **GROUP=FPQSRVT3**
      Indicates that FPQSRVT3 is the group or server that is associated with the repository shown in the data export operation.

      **MAXDSIZE(1G)**
      Indicates that members printed to the SYSPRINT output are limited to 1 GB of RMD data.
REPOS=PRODREG

Indicates PRODREG as the name of the repository that contains the data for export.

2. Submit the job and ensure that it completes with a return code=0.

Scenario: Trimming a version by using the Import and Export Utility

This scenario demonstrates how to trim a version by using the Import and Export Utility.

Procedure

1. Customize the properties for the report by modifying your copy of member HKTIMEX0.

2. Start an IMPORT operation by specifying HISTORY=NO and DELETE=YES.

   For example:

   ```
   //********************************************************************
   //** Export with HISTORY=NO
   //********************************************************************
   //EXPORT EXEC PGM=HKTIMEX0,REGION=0M,
   // PARM='EXPORT GROUP=FPQSRVB1 HISTORY(N0) REPOSITORY(HKT_O0000000)'
   //STEPLIB DD DISP=SHR,DSN=IMSTESTL.TNUC0
   // DD DISP=SHR,DSN=IMSBLD.HAHN130.SHKTLOAD
   //SYSPRINT DD SYSOUT=*  
   //SYSAENV DD SYSOUT=*  
   //IMEXFILE DD DSN=&TRIM,  
   //   DISP=(NEW,CATLG),  
   //   UNIT=SYSDA,SPACE=(CYL,(2,1)),  
   // DCB=(DSORG=PS,LRECL=256,RECFM=VB)  
   /*
   //********************************************************************
   //** Import with DELETE=YES
   //********************************************************************
   //IMPORT EXEC PGM=HKTIMEX0,REGION=0M
   //STEPLIB DD DISP=SHR,DSN=IMSTESTL.TNUC0
   // DD DISP=SHR,DSN=IMSBLD.HAHN130.SHKTLOAD
   //SYSPRINT DD SYSOUT=*  
   //SYSAENV DD SYSOUT=*  
   //IMEXFILE DD DISP=(OLD,DELETE),DSN=&TRIM  
   //SYSIN DD *
   IMPORT GROUP=FPQSRVB1,  
   PROJECT=OUTPUT_REPORT,  
   FIELD=(NAME=DBD_NAME,OPER=EQ,STRING=CUST02),  
   FIELD=(OR NAME=IMS,OPER=EQ,STRING=IMB1),  
   DELETE=YES  
   */
   ``

3. Submit the job.

4. Verify on the IMS Tools Knowledge Base panels that only the current version is listed.

What to do next

Continue to import reports, to verify that the output repository is not broken after trimming.
Part 5. Troubleshooting

The topics in this section provide you with supplemental technical references that can help you diagnose, troubleshoot, and solve IMS Tools Knowledge Base problems.

Topics:

- Chapter 13, “FPQ reason codes (repository server),” on page 167
- Chapter 14, “FPQ error messages (repository server),” on page 169
- Chapter 15, “HKT return and reason codes (repositories),” on page 191
- Chapter 17, “HKT error messages,” on page 205
- Chapter 16, “HKT error messages (import and export utility),” on page 193
- Chapter 18, “HKTD error messages (discovery utility),” on page 231
- Chapter 19, “HKTM and HKTX error messages (internal data access APIs),” on page 235
- Chapter 20, “BPE diagnostic trace,” on page 247
- Chapter 21, “IBM Service Repository abend codes,” on page 249
- Chapter 22, “Gathering diagnostic documentation,” on page 251
Chapter 13. FPQ reason codes (repository server)

This reference section provides detailed information about the reason codes issued by the IMS Tools Knowledge Base repository server.

Any reason code not included in the following table is an internal error that requires assistance from IBM Software Support.

Table 20. FPQ reason codes

<table>
<thead>
<tr>
<th>Reason code</th>
<th>Explanation</th>
<th>User Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>FPQ subsystem not found</td>
<td>Make sure the FPQ subsystem is initialized on the system that you are running on. For more information, see the Configuring SAF Security topic in the IBM Tools Base for z/OS Configuration for IMS documentation.</td>
</tr>
<tr>
<td>002</td>
<td>Server not found</td>
<td>The server specified in ITKBSRVR was not found. Start the server.</td>
</tr>
<tr>
<td>003</td>
<td>No FPQ server for server name</td>
<td>The server specified in ITKBSRVR was not found. Start the server.</td>
</tr>
<tr>
<td>004</td>
<td>FPQ server in shutdown</td>
<td>The server is not accepting connections. Wait until the server is available.</td>
</tr>
<tr>
<td>005</td>
<td>FPQ server has shutdown or failed</td>
<td>The server is not accepting connections. Wait until the server is available.</td>
</tr>
<tr>
<td>006</td>
<td>FPQ server is busy (retry valid)</td>
<td>The server allows a limited number of concurrent connections. Increase the value of XCF_THREADS and recycle the server. It is possible that the server is getting insufficient processing resources to keep up with the workload. You might need to increase its service class or move it to a system with less workload.</td>
</tr>
<tr>
<td>008</td>
<td>Repository not found</td>
<td>The repository is not known to the server. This should not occur and might be a result of disconnecting repositories using the Administration menu of the ISPF user interface. Restore access to any required repositories.</td>
</tr>
<tr>
<td>009</td>
<td>Repository is unavailable</td>
<td>The repository is currently STOPPED. Start the repository.</td>
</tr>
<tr>
<td>00A</td>
<td>User has insufficient access</td>
<td>The security subsystem has denied access to a repository. See your system administrator for information.</td>
</tr>
<tr>
<td>014</td>
<td>Search field not defined</td>
<td>This code is an error that occurs when the repository gets out of synch with the definition requirements. Restore the definitions to the repository by using the List Installed Products selection from the Administration menu. Select the product in error from the Report Subscriptions List and then use the Global_Actions &gt; SYNC function.</td>
</tr>
<tr>
<td>Reason code</td>
<td>Explanation</td>
<td>User Response</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------</td>
<td>---------------</td>
</tr>
<tr>
<td>015</td>
<td>Search field definition mismatch</td>
<td>This code is an error that occurs when the repository gets out of synch with the definition requirements. Restore the definitions to the repository by using the List Installed Products selection from the Administration menu. Select the product in error from the Report Subscriptions List and then use the Global_Actions &gt; SYNC function.</td>
</tr>
<tr>
<td>017</td>
<td>No search-field-table match</td>
<td>This code is an error that occurs when the repository gets out of synch with the definition requirements. Restore the definitions to the repository by using the List Installed Products selection from the Administration menu. Select the product in error from the Report Subscriptions List and then use the Global_Actions &gt; SYNC function.</td>
</tr>
<tr>
<td>102</td>
<td>API level not supported</td>
<td>The Knowledge Base release level of the program is incompatible with the server.</td>
</tr>
<tr>
<td>110</td>
<td>Stacking PC (CSSP) error</td>
<td>This code is most likely caused by the FPQ subsystem not being properly initialized. Verify that the message FPQ3001I STACKING PC – FPQ SUBSYSTEM INSTALLED was issued. Other causes include insufficient private storage and internal errors regarding the use of IXCJOIN and IXCQUERY services.</td>
</tr>
<tr>
<td>111</td>
<td>Server error</td>
<td>This code reflects an error processing this request in the server. Refer to the server JOBLOG for more information.</td>
</tr>
<tr>
<td>113</td>
<td>Max XCF server connections</td>
<td>The number of concurrent sessions with the Tools Base IMS Tools Knowledge Base server exceeds the allowed limit for your release of z/OS. It is possible that a higher release of z/OS allows a greater number of connections. Consider dividing the workload for the server into one or more additional servers.</td>
</tr>
</tbody>
</table>
Chapter 14. FPQ error messages (repository server)

This reference section provides detailed information about the error messages issued by the IMS Tools Knowledge Base repository server.

Message format

IMS Tools Knowledge Base repository server messages adhere to the following format:

FPQnnnnx

where:

FPQ Indicates that the message was issued by IMS Tools Knowledge Base repository server

nnnn Indicates the message identification number

x Indicates the severity of the message:

A Indicates that operator intervention is required before processing can continue.

E Indicates that an error occurred, which might or might not require operator intervention.

I Indicates that the message is informational only.

W Indicates that the message is a warning to alert you to a possible error condition.

Each message also includes the following information:

Explanation:
The Explanation section explains what the message text means, why it occurred, and what its variables represent.

System action:
The System action section explains what the system will do in response to the event that triggered this message.

User response:
The User response section describes whether a response is necessary, what the appropriate response is, and how the response will affect the system or program.

Module
The Module section indicates which module or modules are affected.

<table>
<thead>
<tr>
<th>FPQ0001E</th>
<th>Server terminating due to an error condition.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feedback:</td>
<td>feedback_word1 feedback_word2 feedback_word3</td>
</tr>
</tbody>
</table>

Explanation: An unsupported error condition has occurred. The server must terminate because its integrity is unknown.

<p>| System action: | Processing ends unconditionally and the server terminates. |
| User response: | Contact IBM Software Support. |
| Feedback words: | IBM diagnostic and debugging information. |</p>
<table>
<thead>
<tr>
<th>Error Code</th>
<th>Description</th>
</tr>
</thead>
</table>
| **FPQ0002E** | The server experienced an error condition.  
**Feedback:** feedback_word1 feedback_word2 feedback_word3  
**Explanation:** An unsupported error has occurred in the server. The server can continue processing.  
**System action:** Processing ends for the affected thread but the server attempts to continue processing.  
**User response:** Contact IBM Software Support.  
**Feedback words:** IBM diagnostic and debugging information. |
| **FPQ0006E** | Unable to load Catalog Search Interface routine IGGCSI00.  
**Info:** LOAD_abend_code  
**LOAD_reason_code**  
**Explanation:** The server attempted to load the MVS Catalog Search Interface routine and this operation failed.  
**LOAD_abend_code**  
The abend code returned by the failing LOAD macro.  
**LOAD_reason_code**  
The reason code returned by the failing LOAD macro.  
**System action:** Processing ends unconditionally and the server terminates.  
**User response:** See the response and reason codes for the IGGCSI00 subroutine, which are listed in the IBM manual Catalog Search Interface User's Guide in the section "Managing Catalogs". |
| **FPQ0007E** | Repository data set not found.  
**DSN:** data_set_name  
**Explanation:** Data set was not found. The server identifies and raises this error only when trying to open the repository.  
**System action:** The repository is placed in the stopped state and cannot be accessed. If the repository is the catalog, Service Repository will terminate.  
**User response:** Ensure that the data set name is correct and that the data set is cataloged on the z/OS system. |
| **FPQ0008E** | Invalid repository data set name.  
**DSN:** data_set_name  
**Explanation:** Repository data set name is not a valid VSAM KSDS name. The server identifies and raises this error only when trying to open the repository.  
**System action:** The repository is placed in the stopped state and cannot be accessed. If the repository is the catalog, Service Repository will terminate.  
**User response:** Define the data set. |
| **FPQ0009E** | Repository data set is not a VSAM KSDS.  
**DSN:** data_set_name  
**Explanation:** The repository data set is not a VSAM key-sequenced data set (KSDS). Service repository only supports VSAM KSDS. The server identifies and raises this error only when trying to open the repository.  
**System action:** The repository is placed in the stopped state and cannot be accessed. If the repository is the catalog, Service Repository will terminate.  
**User response:** Enter a valid VSAM KSDS name or correct the data set definition. |
| **FPQ0010E** | Repository data set DYNALLOC error  
**RC:** DYNALLOC_return_code  
**RSN:** DYNALLOC_reason_code  
**DSN:** data_set_name  
**Explanation:** During repository open processing, an attempt to dynamically allocate (DYNALLOC) a repository data set failed.  
**DYNALLOC_reason_code**  
The reason code returned by the DYNALLOC (SVC99).  
**DYNALLOC_return_code**  
The return code returned by DYNALLOC (SVC99).  
**data_set_name**  
The repository data set name.  
**System action:** The repository is placed in the stopped state and cannot be accessed. If the repository is the catalog, Service Repository will terminate.  
**User response:** Information messages accompany this error; search for FPQ0011I. The return and reason codes are produced by DYNALLOC (SVC99). For a complete description of these return codes, see the IBM documents MVS/XA System Programming Library: System Macros and Facilities Vol 1. or MVS/ESA Application Development Guide: Authorized Assembler Language Programs.  
**FPQ0011I** | Variable information from DYNALLOC  
**Explanation:** Information messages accompanying error FPQ0010E. This information was returned by DYNALLOC when the request failed, and is reformatted as a service repository information message.  
**System action:** See FPQ0010E.  
**User response:** Use this message to help diagnose and correct the error. |
FPQ0012E  Insufficient access authority to repository data set.  
    DSN=data_set_name  

Explanation: An attempt to access a repository data set failed because the server has insufficient RACF® (or similar) privileges. The server identifies and raises this error only when trying to open the repository.  

System action: The repository is placed in the stopped state and cannot be accessed. If the repository is the catalog, Service Repository will terminate.  

User response: Change the data set access privileges.  

---  

FPQ0013E  Reset failed as repository data set is non-reusable.  
    DSN=data_set_name  

Explanation: An attempt to reset a repository data set during data set recovery failed because the data set does not have the REUSE attribute. The server identifies and raises this error only when trying to open the repository.  

System action: The repository is placed in the stopped state and cannot be accessed. If the repository is the catalog, Service Repository will terminate.  

User response: Use IDCAMS to delete or define the data set. Optionally, add the REUSE attribute. However this is not required because the DELETE and DEFINE keywords reset the data set for this operation.  

---  

FPQ0014E  Repository data set call error  
    RC=VSAM_return_code  
    ACBERFGL=access_ctrl_blk_err_flag  
    DSN=data_set_name  

Explanation: An unsupported error condition occurred on a VSAM data set OPEN or CLOSE call.  

*call*  The type of VSAM function that was attempted (OPEN or CLOSE).  

*VSAM_return_code*  The VSAM return code.  

*ACBERFGL*  The reason code in the ACBERFGL field of the ACB.  

*data_set_name*  The repository data set name.  

System action: The repository is placed in the stopped state and cannot be accessed. If the repository is the catalog, Service Repository will terminate.  

User response: Refer to z/OS DFSMS Macro Instructions for Data Sets for additional information on this VSAM error.  

---  

FPQ0015E  Invalid RID data set. Use KEYS (128 0).  
    Repository:repository_name  
    Data set name: data_set_name  

Explanation: A data set used for the repository index data (RID) has invalid KEYS values specified. The server identifies and raises this error only when trying to open the repository.  

System action: The repository is placed in the stopped state and cannot be accessed. If the repository is the catalog, Service Repository will terminate.  

User response: Change the data set *data_set_name* option to have KEYS (128 0).  

---  

FPQ0016E  Invalid RMD data set. Use KEYS (12 0).  
    Repository:repository_name  
    Data set name: data_set_name  

Explanation: A data set used for the repository member data (RMD) has invalid KEYS values specified. The server identifies and raises this error only when trying to open the repository.  

System action: The repository is placed in the stopped state and cannot be accessed. If the repository is the catalog, Service Repository will terminate.  

User response: Change the data set *data_set_name* option to have KEYS (12 0).  

---  

FPQ0017E  Invalid RID data set. Use RECORDSIZE(256 256).  
    Repository:repository_name  
    Data set name: data_set_name  

Explanation: A data set used for the repository index data (RID) has invalid RECORDSIZE values specified. The server identifies and raises this error only when trying to open the repository.  

System action: The repository is placed in the stopped state and cannot be accessed. If the repository is the catalog, Service Repository will terminate.  

User response: Change the data set *data_set_name* option to have RECORDSIZE (256 256).  

Note: RID records have a fixed length. Therefore, equal average and maximum RECORDSIZE are recommended.  

---  

FPQ0018E  Invalid RMD data set. Use max RECORDSIZE >= 52 bytes.  
    Repository:repository_name  
    Data set name: data_set_name  

Explanation: A data set used for the repository member data (RMD) has a RECORDSIZE size defined that is too small. The server identifies and raises this error only when trying to open the repository.  

System action: The repository is placed in the stopped state and cannot be accessed. If the repository is the catalog, Service Repository will terminate.  

User response: Use IDCAMS to delete or redefine the data set used for the repository index member data (RMD). Then add the RECORDSIZE option to set the required size. For example, for data sets used as RIDs, use RECORDSIZE(256 256). For data sets used as RMDs, use RECORDSIZE(52 52).  

Note: Use the RECORDSIZE option only when the data set is used as an index. If the data set is used as a member data set, it does not have to have a RECORDSIZE value that is at least 52 bytes. When the data set is used as a member data set, the server sets RECORDSIZE to the smallest value required to store the data set.  

Library: z/OS DFSMS  
Location: z/OS DFSMS Data Facility Programming Guide  
Edition: 1.8
state and cannot be accessed. If the repository is the catalog, Service Repository will terminate.

**User response:** Change the data set `data_set_name` option to have a RECORDSIZE greater than 52 bytes.

**Note:** 52 bytes is the minimum value, not the recommended value.

---

**FPQ0019E**

**Invalid repository data set**

**SHAREOPTIONS. Use (2 3) or (1 3).**

**Repository:** `repository_name`

**Data set name:** `data_set_name`

**Explanation:** A data set used for the repository has invalid SHAREOPTIONS defined. The server identifies and raises this error only when trying to open the repository.

**System action:** The repository is placed in the stopped state and cannot be accessed. If the repository is the catalog, Service Repository will terminate.

**User response:** Redefine the repository data set `data_set_name` with SHAREOPTIONS (2 3) or (1 3).

---

**FPQ0020E**

**Inconsistent repository data set**

**SHAREOPTIONS.**

**Share options:** DATA (data_op1 data_op2), INDEX (idx_op1 idx_op2)

**Repository:** `repository_name`

**Data set name:** `data_set_name`

**Explanation:** The share options for the repository data set INDEX and DATA are not the same and are not the same making them invalid. Use options (2 3) for both or options (1 3) for both. The server identifies and raises this error only when trying to open the repository.

**System action:** The repository is placed in the stopped state and cannot be accessed. If the repository is the catalog, Service Repository will terminate.

**User response:** Change the data set options for the DATA and INDEX component to make them consistent.

---

**FPQ0021E**

**Invalid repository data set control record.**

**Repository:** `repository_name`

**Data set name:** `data_set_name`

**Explanation:** Data set validation identified a repository data set with a missing, or invalid control record. The server identifies and raises this error only when trying to open the repository.

**System action:** The repository is placed in the stopped state and cannot be accessed. If the repository is the catalog, the Service Repository server will terminate.

**User response:** The given repository data set is invalid. The likely causes are that an incorrect data set was specified, or that the data set needs a DELETE/DEFINE in order to empty it.

---

**FPQ0022E**

**Inconsistent type data set maximum RECORDSIZE.**

**Record size:** `PRI=primary_type_recordsize`, `SEC=secondary_type_recordsize`

**Repository:** `repository_name`

**Explanation:** The primary and secondary RID or RMD data sets do not have the same RECORDSIZE option. The primary RID must have the same RECORDSIZE option as the secondary RID. The primary RMD must have the same RECORDSIZE option as the secondary RMD. The server identifies and raises this error only when trying to open the repository.

**System action:** The repository is placed in the stopped state and cannot be accessed. If the repository is the catalog, Service Repository will terminate.

**User response:** Define primary and secondary RMD data sets with the same maximum RECORDSIZE values.

---

**FPQ0023I**

**Recoverable data set combination identified.**

**Repository:** `repository_name`

**Primary RID:** `primary_rid_data_set_state`

**Primary RMD:** `primary_rmd_data_set_state`

**Secondary RID:** `secondary_rid_data_set_state`

**Secondary RMD:** `secondary_rmd_data_set_state`

**Explanation:** During repository open processing, Service Repository found that one or more data sets needs to be recovered and can be recovered.

**System action:** The repository server proceeds with repository data set recovery processing.

**User response:** None.

---

**FPQ0024E**

**Non-recoverable data set combination identified.**

**Repository:** `repository_name`

**Primary RID:** `primary_rid_data_set_state`

**Primary RMD:** `primary_rmd_data_set_state`

**Secondary RID:** `secondary_rid_data_set_state`

**Secondary RMD:** `secondary_rmd_data_set_state`

**Explanation:** When trying to open a repository the
server determined that recovery is required but cannot be performed. The state can be one of the following:

**Empty data set detected**
One or more data sets are empty.

**Update-in-progress state**
One or more of the data sets appear to have had an incomplete write operation.

**Data set consistency token**
The data sets do not have the same consistency tokens suggesting that one or more of the data sets belongs to another repository. A recovery will not be attempted.

**Last-update timestamp**
The last-update timestamp of the repositories is inconsistent, suggesting an incomplete write operation. The time stamp format is: YYYY/MM/DD HH:MM:SS.

**System action:**
The repository is placed in the stopped state and cannot be accessed. If the repository is the catalog, Service Repository will terminate.

**User response:**
Correct the repository data sets, restart them (with total loss of data), or recover them from backups if available. Search for message FPQ0024I for additional information.

---

### FPQ0025I
**Repository data set initialization successful.**

**Repository:** repository_name

**Explanation:** During repository open processing, all repository data sets were found to be empty and have subsequently been successfully initialized.

**System action:** Repository open processing continues.

**User response:** None.

---

### FPQ0026I
**Recovery of the data_set_type data set successful.**

**Repository:** repository_name

**Explanation:** The repository repository_name was successfully recovered. The data set which was recovered can be found by identifying which data set is used for the data_set_type of that repository.

**System action:** None.

**User response:** None.

---

### FPQ0027I
**Error during phase n update process.**

**Repository:** repository_name

**Explanation:** An error has occurred during the 2-phase update process for the given repository data set.

**System action:** The given repository is stopped, and needs recovery. If the failure was in phase 1, then the primary RID and RMD data sets are in-error, and the unit-of-work being committed at the time of error is rolled back. If the failure was in phase 2, then the secondary RID and RMD data sets are in-error, and the unit-of-work being committed at the time of error was successful.

**User response:** Address the reason for the failure and restart the repository.

---

### FPQ0028E
**VSAM function error:**

<table>
<thead>
<tr>
<th>Function</th>
<th>Return Code</th>
<th>RPL Error Code</th>
<th>DSN</th>
</tr>
</thead>
<tbody>
<tr>
<td>VERIFY</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POINT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GET</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PUT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ERASE</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Explanation:** An unsupported error condition occurred on a VSAM function call.

**System action:** The repository is placed in the stopped state and cannot be accessed. If the repository is the catalog, the repository server will terminate.

**User response:** Refer to Z/OS DFSMS Macro Instructions for Data Sets for a complete description of the VSAM error.

---

### FPQ0029E
**Unable to load module:**

**Module:** module

**Description:**

One of the following:

- Module not found
- BLDL for module failed
- LOAD for module failed
- BPELOAD RC=BPE_return_code

**System action:** The repository server will terminate.

**User response:** If possible, resolve the condition and restart the server. Otherwise, contact IBM.
FPQ0030E  Data decompression error: description
Explanation: A compressed RMD member as been detected, however decompression is not supported on the current platform.

description
One of the following:
• Unsupported on current MVS level
• Up-level data compression detected
• Invalid data compression detected
• CSRCESR RC=macro_return_code

System action: The calling function fails and processing continues.
User response: Start the repository server on a platform that is compatible with the one the repository member data was written on.

FPQ0031E  VSAM resource pool build failure: description
Explanation: An error occurred on build VSAM resource pool (BLDVRP) during server initialization.

description
One of the following:
• Insufficient virtual storage
• BLDVRP macro_return_code

System action: The repository server will terminate.
User response: Refer to Z/OS DFSMS Macro Instructions for Data Sets for a complete description of the BLDVRP error. Correct the issue and restart the server.

FPQ0032E  Repository data set control interval exceeds VSAM_BUFSIZE.
DSN=data_set_name
Explanation: During repository open processing, a repository data set was found to have a control interval size that exceeded the VSAM shared pool buffer size.

System action: The repository is placed in the stopped state and cannot be accessed. If the repository is the catalog, the repository server will terminate.
User response: Ensure that the data set name is correct, or modify the VSAM_BUFSIZE configuration parameter so that the buffer size is equal to or larger than the CI size of the given repository data set.

Note: Consideration must be given to both the DATA and INDEX components of the data set.

FPQ0033I  Error during CONTROL SET function processing.
Repository: repository

Explanation: An error has occurred during CONTROL SET processing for the given repository data set, leaving the repository CONTROL data (for example, history retention table and search fields tables) potentially inconsistent.

System action: The given repository is stopped.
User response: Contact IBM Software Support.

Note: A restart of the repository will reestablish CONTROL data integrity.

FPQ0034E  Repository data set in use by another job or user.
DSN=data_set_name

Explanation: During repository open processing, a repository data set was found to be unavailable.

System action: The repository is placed in the stopped state and cannot be accessed. If the repository is the catalog, the repository server will terminate.
User response: Retry after ensuring that the data set is available.

FPQ0035E  VSAM unable to extend data set:
RC=return_code
RPLERRCD=RPL_error_code.
DSN=data_set_name

Explanation: A repository data set was unable to be extended, causing the repository update process to fail.

System action: The repository is placed in the stopped state and cannot be accessed. If the repository is the catalog, the repository server will terminate.
User response: Refer to Z/OS DFSMS Macro Instructions for Data Sets for a more complete description of the VSAM error. Resolve the cause of the data set extension failure, then restart the repository.

FPQ0036E  Invalid SPARE RDS data sets. RDSn is now discarded.
Repository: repository_name
Description: description

Explanation: Data set validation has failed for an RDS that was designated as a SPARE, where:

RDSn  RDS number 1, 2, or 3.

description
One of the following:
• Data set open-time error
• Data sets not empty
• RECORDSIZE inconsistent with other RDS
The RDS is discarded.

Correct the data set issues that caused the RDS to be discarded. DSCHANGE can then be used to alter the RDS status from DISCARD to SPARE.

FPQ0037I  RDSn status has been changed to status. Repository...: repository_name

Explanation: The status of a repository data set pair has been changed. This can occur when an ADMIN command is used to change the type of a repository data set pair to SPARE or DISCARD; or dynamically in a repository error scenario, for example, a physical I/O error during a two-phase update.

Where:

RDSn The repository data set number 1, 2, or 3.
status The repository data set type SPARE or DISCARD.

System action: The server continues.

User response: None.

FPQ0038I  VSAM physical error message text

Explanation: This message contains the supporting information that is printed when an FPQ0028E message is issued that represents a VSAM physical error (RC=12).

System action: Refer to message FPQ0028E.

User response: For a complete description of the VSAM error, see the z/OS DFSMS Macro Instructions for Data Sets, SC26-7408.

FPQ0039I  Spare RDSn has been assigned status. Repository...: repository_name

Explanation: A SPARE repository data set pair has been assigned COPY1 or COPY2 status. This occurs as part of repository recovery when COPY1 or COPY2 has been discarded.

Where:

RDSn The repository data set number 1, 2, or 3.
status The repository data set type COPY1 or COPY2.

System action: The server continues.

User response: None.

FPQ0040E  Repository cannot be started: reason. Repository...: repository_name RDS1 status.: status RDS2 status.: status RDS3 status.: status

Explanation: The repository cannot be started due to reason.

SPARE RDS required
During repository start or open processing, it was determined that the repository cannot be started because a COPY1 or COPY2 repository data set needs to be recovered but there is no SPARE recovery data set to facilitate this recovery.

No COPY1 or COPY2 RDS
During repository start or open processing, it was determined that the repository cannot be started because there are no repository data sets with COPY1 or COPY2 status. This is a Service Repository error.

No COPY1 or COPY2 RDS required

Important: Make a backup copy before performing the following steps. Reinitializing the repository data sets results in complete loss of data.

1. Reinitialize or recover the data sets from backups if available.
2. Redefine the user repository to establish RDS1 as COPY1 and RDS2 as COPY2.

FPQ1001E  Configuration error: xxxxxx

Explanation: An error in the JCL initialization script prevented the Service Repository server from initializing. Depending on the message description, this could have been because of a missing keyword, parameter, or a reference to an invalid PDS member. For example, a member that does not exist.

System action: Job terminated.

User response: Review the startup JCL, ensure all parameters are valid, and rerun the job.
FPQ1002E  Error processing PROCLIB member
xxxxxxxx  xxx
Return Code:  xxx
Description:  xxxxx

Explanation:
Error reading PROCLIB member
OPEN failed for PROCLIB PDS
PROCLIB PDS not in fixed format
PROCLIB member not found

System action:  Job terminated.
User response:  Review the startup JCL, ensure all parameters are valid, rerun the job.

FPQ1003I  xxxxx

Explanation:  These are informational messages indicating the processing stage.

System action:  None.
User response:  None.

FPQ1004E  Error in parameter parser: BPECBGET
RC=  xxx

Explanation:

System action:  
User response:  Correct the invalid parameter.

FPQ1005E  Parameter parser has identified an error.
Member:  xxxxx
Line:  xxx
Position:  xxx
Description:  xxxxx
Reason code:  xxx

Explanation:
Invalid keyword detected
Unknown positional parameter
Sublists must use parentheses
Input ended before end of parsing
Keyword encountered when value expected
Number is out of range
Invalid digits found in decimal field
Invalid digits found in hex field
Key value invalid
Duplicate keyword found
A required parameter was not found
Value is longer than field length

System action:  Job terminated.
User response:  Correct the invalid parameter.

FPQ1006E  Parameter parser has identified an error.
Member:  xxxxx
Line:  xxx
Position:  xxx
Description:  Value must be in the range 4 through 32 and divisible by 4

Explanation:

System action:  
User response:  Correct the invalid parameter.

FPQ1007E  Invalid XCF group name specified:
xxxxxxxx

Explanation:

System action:  
User response:  Provide a valid XCF group name.

FPQ1008E  Invalid number of XCF threads specified:  xxx
Valid range is 4 through 99.

Explanation:

System action:  
User response:  Provide a valid range.

FPQ1009E  Invalid core size specified:  xxx
Valid range is 32 through 4096 (K).

Explanation:

System action:  
User response:  Provide a valid range.

FPQ1010E  Invalid SAF class name specified:  xxxxx

Explanation:

System action:  
User response:  Provide a valid SAF class name.

FPQ1011E  Invalid number of VSAM buffers specified:  xxxxx
Valid range is 3 through 65535.

Explanation:

System action:  
User response:  Provide a valid range.

FPQ1012E  Invalid maximum retry count specified:
xxx
Valid range is 1 through 255.

Explanation:

System action:  

User response: Provide a valid range.

FPQ1013E Invalid TCP/IP port number specified: 

xxxxx

Valid range is 0 through 65535.

Explanation:
System action:
User response: Provide a valid range.

FPQ1014E Invalid TCP/IP thread number specified: 

xxx

Valid range is 0 through 999.

Explanation:
System action:
User response: Provide a valid range.

FPQ1015E SAF class not defined: xxxxx

Explanation: The SAF class could not be identified. Possible reasons:
Security (RACF) not installed.
The class was not defined.
System action: The server will terminate.
User response: Correct the FPQ configuration parameter member if the SAF class is not as expected, or make sure the SAF class is defined.

FPQ1016E Invalid DSN specified: description

Explanation: A server configuration parameter that specifies one of the Catalog repository data set names is invalid. Where:

description

The Catalog repository data set that contains the invalid name.
System action: The server terminates.
User response: Correct the parameter value and rerun the job.

FPQ1018E Invalid AUDIT_LOG specified: 

<logname>

Explanation: The value specified in the AUDIT_LOG server configuration parameter is not a valid MVS log stream name. Where:

logname

The value of the AUDIT_LOG parameter specified in the FPQ configuration member.
System action: The server terminates.
User response: Correct the parameter value and rerun the job.

FPQ1019E Invalid AUDIT_ID number specified: 

<nnn>.

Valid range is 160 through 255.

Explanation: The value specified by the AUDIT_ID server configuration parameter is invalid. The value must be in the range 160 - 255.

Where:

nnn

The value of the AUDIT_ID parameter specified in the FPQ configuration member.
System action: The server terminates.
User response: Correct the parameter value and rerun the job.

FPQ2000I Subordinate repository server status obtained.

Explanation: Information message only.
System action: None.
User response: None.

FPQ2002I Master repository server status obtained.

Explanation: Information message only.
System action: None.
User response: None.

FPQ2003I Attempting to become master repository server.

Explanation: Information message only.
System action: None.
User response: None.

FPQ2004I FPQPRINT DD not defined. Trace facility not available.

Explanation: Information message only.
System action: None.
User response: None.

FPQ2005I Shutdown command received, server terminating.

Explanation: Information message only.
System action: None.
User response: None.

FPQ2007I Shutdown command received, notifying all repository servers to shut down.

Explanation: Information message only.
System action: None.
User response: None.

FPQ2009E  TCP/IP port port_number in use
Explanation: The TCP/IP port specified by port_number is currently in use. Where:

port_number
The value of the TCPIP_PORT parameter specified in the FPQ configuration member.

System action: The server continues without TCP/IP support.
User response: Do either of the following:
• Retry the operation. The TCP/IP can take up to 2 minutes to free a port.
• Change the TCPIP_PORT parameter specified in the FPQ configuration member.

FPQ2010I  TCP/IP using port port_number
Explanation: The server is using TCP/IP port port_number. Where:

port_number
The value of the TCPIP_PORT parameter specified in the FPQ configuration member.

System action: None.
User response: None.

FPQ2011E  Shutdown command rejected, shutdown in progress.
Explanation: The shutdown command entered was rejected because the system is already processing a shutdown command.

System action: None.
User response: None.

FPQ2012I  Opening repository: xxxxxxx
Explanation: Information message only.

System action: None.
User response: None.

FPQ2013I  Closing repository: xxxxxxx
Explanation: Information message only.

System action: None.
User response: None.

FPQ2014I  Repository start request initiated: xxxxxxx
Explanation: Information message only.

System action: None.
User response: None.

User response: None.

FPQ2015I  Repository stopped: xxxxxxx
Explanation: Information message only.

System action: None.
User response: None.

FPQ2016I  Repository opened: xxxxxxx
Explanation: Information message only.

System action: None.
User response: None.

FPQ2017I  Repository closed: xxxxxxx
Explanation: Information message only.

System action: None.
User response: None.

FPQ2018E  Unable to open repository.
Repository: xxxxxxx
Description: Catalog definition member is in use

Explanation: 

System action: 
User response: Retry at a later time.

FPQ2020I  Repository stop request initiated: repository
Explanation: The repository server received a request to stop the repository repository. The asynchronous process to perform this action has been initiated.

System action: The originator of the STOP request is notified that the request was accepted. The asynchronous process to perform the STOP action continues.

User response: None.

FPQ2021I  Repository started: repository
Explanation: The repository repository is started. An ADMIN START request for repository repository was driven from the console.

System action: None.
User response: None.
FPQ2022E  Repository unavailable: repository
Explanation: This message indicates that the repository repository is unavailable for processing. The message is issued if:
- The Catalog repository is unavailable during server initialization. The server terminates.
- An ADMIN command for repository repository is suppressed. This occurs when a repository is temporarily unavailable due to an in-progress state change, for example, the repository is in the process of being stopped.
System action: None.
User response: Review the status of repository repository and reissue the command if applicable.

FPQ2023E  Repository not found: repository
Explanation: An ADMIN command for repository repository was received, but the request could not be performed because the specified repository is unknown.
System action: None.
User response: Correct the repository name and reissue the command.

FPQ2024E  Request ignored, repository already started | stopped: repository
Explanation: An ADMIN=START or ADMIN=STOP command for repository repository was received, but the request was ignored because the repository is already in the requested state.
System action: None.
User response: None.

FPQ2025I  Server start completed
Explanation: The server is now ready to accept client connections.
System action: None.
User response: None.

FPQ2026I  XCF group group joined successfully
Explanation: The XCF group was successfully joined. The IMS Tools KB server can now accept XCF registrations and connections for XCF group group. Where:
- group The XCF group name in the FPQ configuration member.

System action: None.
User response: None.

FPQ2027E  Unable to connect to audit log stream, server terminating
Explanation: The log stream is unavailable and AUDIT_FAIL=ABORT was specified in the server configuration parameters.
System action: The IMS Tools KB server terminates.
User response: Ensure that the AUDIT_LOG parameter specifies a valid log stream name and that the log stream is set up correctly. Optionally, bypass the audit log by setting AUDIT_FAIL=CONTINUE or AUDIT=NO.

FPQ2028E  DUMPTRACE | DUMPSTATS command ignored because FPQPRINT DD not allocated
Explanation: A MODIFY DUMPTRACE or DUMPSTATS command was issued but the DD name FPQPRINT was not found or was not open.
System action: The command is ignored and the IMS Tools KB server continues.
User response: Ensure that the DD FPQPRINT is available on the next restart of the server.

FPQ2029E  Log stream connection failed RC=rc RSN=rsn
Explanation: The log stream connection (IXGCONN) failed. Where:
- rc The IXGCONN return code.
- rsn The IXGCONN reason code.
System action: If AUDIT_FAIL=ABORT, the server terminates, otherwise, no system action.
User response: Check the return and reason codes to determine the cause of the error. Optionally, bypass the audit log by setting AUDIT_FAIL=CONTINUE or AUDIT=NO.

FPQ2030E  ENF listener activation failed RC=rc
Explanation: The ENF listener activation (ENFREQ) failed. Where:
- rc Indicates the ENFREQ return code.
System action: If AUDIT_FAIL=ABORT is specified, the server terminates.
User response: Check the return code to determine the cause of the error. For a complete description of ENFREQ return codes, see the z/OS MVS Programming Authorized Assembler Services Reference Vol 2 (EDT-IXG). You can optionally bypass the audit log by setting
AUDIT_FAIL=CONTINUE or AUDIT=NO.

FPQ2031I Audit logging suspended due to CONNECT | WRITE RC=rc RSN=rsn

Explanation: Audit logging is suspended due to an outstanding error while connecting to or writing to the log stream (IXGCONN REQUEST=CONNECT or IXGWRITE).

Important: If AUDIT_FAIL=CONTINUE is specified, it is possible that records might be missing from the audit log because logging is suspended.

System action: • If AUDIT_FAIL=CONTINUE is specified, the server continues.
• If AUDIT_FAIL=ABORT is specified and the error occurred on CONNECT during server startup, the server shuts down.
• If AUDIT_FAIL=ABORT is specified and the error occurred on WRITE, the server waits until either the problem is resolved automatically, the server is shut down, or the problem is resolved manually and a MODIFY AUDIT RESTART command is successfully issued. No logging is performed until the problem is resolved. This message is reissued every 60 seconds until audit logging resumes.

User response: Repair the logging problem and issue a MODIFY AUDIT RESTART command to restart the logging service.

FPQ2032I Audit logging resumed

Explanation: The audit logging error has been corrected. Auditing will continue.

Important: If AUDIT_FAIL=CONTINUE is specified, it is possible that records might be missing from the audit log because logging is suspended.

System action: None.

User response: None.

FPQ2033E Unexpected TCPIP response. IP operation was operation, ERRNO was errno

Explanation: The Service Repository received an unexpected IP network response while attempting to perform a function by using the IP network.

System action: The Service Repository server attempts to continue processing without the IP network connection.

User response: To determine the recommended action, see the sockets return codes (ERRNOs) in z/OS Communications Server IP Sockets Application Programming Interface Guide and Reference.

FPQ2034I Lost XCF client Sysname=MVS_system Jobname=client_job_name, response discarded

Explanation: This is a response to a z/OS cross-system coupling facility (XCF) client request that could not be sent by the Repository Server and has been discarded. This error occurs if the client fails (for example, the client is canceled) while the repository server is processing the request on behalf of the client.

In the message text:
MVS_system Indicates the MVS system name of the XCF client.
client_job_name Indicates the job name of the XCF client.

System action: None.

User response: For more information, look up RC=8, RSN=IXCMSGORSNOTIVALID for the IXCMSGO macro in z/OS MVS Programming: Sysplex Services Reference.

FPQ2100I ADMIN DISPLAY repository repository - Last updated date/time : date_time userID
- Status . . . . . . : status
- Auto-open . . . . . : autoopen_flag
- Security Class . . . : class

Explanation: This message shows the result of the following console z/OS MODIFY ADMIN command: F server,ADMIN DISPLAY(repository)

In the message text:
repository Indicates the name of the IMSRSC repository.
date_time Indicates the date and time the repository was last updated.
(userID Indicates the user ID of the user who last updated the repository.
status Indicates the status of the repository.
autoopen_flag Indicates whether the repository data set is allocated when the repository is started.
class Indicates the name of the security class.

System action: Processing continues.

User response: None.
### FPQ2101I  
**Explanation:** This message shows the result of the following console z/OS MODIFY ADMIN command: 
\[ F\ \text{server},\text{ADMIN}\ \text{DISPLAY}\left(\text{repository}\right) \]

This is a supplement to FPQ2100I and is displayed once for each defined repository data set pair.

In the message text:
- **RDSn** indicates the repository data set number: 1, 2, or 3.
- **RID\_data\_set\_name** indicates the name of the repository index data set (RID).
- **RMD\_data\_set\_name** indicates the name of the repository member data set (RMD).
- **status** indicates the status of the named repository.

**System action:** Processing continues.

**User response:** None.

### FPQ2102I  
**Explanation:** This message shows the result of the following console z/OS MODIFY ADMIN command: 
\[ F\ \text{server},\text{ADMIN}\ \text{DISPLAY}\left(\text{repository}\right) \]

This message is repeated for each repository.

In the message text:
- **repository** indicates the name of the repository.
- **repository\_status** indicates the current status of the repository.
- **update\_date** indicates the last updated date of the repository.
- **update\_userID** indicates the user ID by which the repository was last updated.
- **RDS1\_status** indicates the status of RDS1.
- **RDS2\_status** indicates the status of RDS2.
- **RDS3\_status** indicates the status of RDS3.

**System action:** Processing continues.

**User response:** None.

### FPQ2103I  
**Explanation:** This message shows the result of the following console z/OS MODIFY AUDIT command: 
\[ F\ \text{server},\text{AUDIT}\ \text{LEVEL}\left(new\_level\right) \]

In the message text:
- **old\_level** indicates the old audit level of the repository.
- **new\_level** indicates the new audit level of the repository.

**System action:** Processing continues.

**User response:** None.

### FPQ2104I  
**Explanation:** This message shows the result of the following console z/OS MODIFY AUDIT command: 
\[ F\ \text{server},\text{AUDIT}\ \text{LEVEL}\left(new\_level\right) \]

In the message text:
- **old\_level** indicates the old audit level of the repository.

**System action:** Processing continues.

**User response:** None.

### FPQ2105I  
**Explanation:** This message shows the result of the following console z/OS MODIFY SECURITY command: 
\[ F\ \text{server},\text{SECURITY}\ \text{REFRESH} \]

**System action:** Processing continues.

**User response:** None.

### FPQ2106E  
**Explanation:** This message shows the result of the following console z/OS MODIFY SECURITY command: 
\[ F\ \text{server},\text{SECURITY}\ \text{REFRESH} \]

Security settings cannot be refreshed because security is not active for this repository.

**System action:** Processing continues, but the security settings are not refreshed.

**User response:** Specify a security class in the SAF\_CLASS parameter in the FPQ configuration file, then restart the server.
FPQ2107E  DSCHANGE request rejected, reason

Explanation: This message shows the result of the following console z/OS MODIFY ADMIN DSCHANGE command:
F server,ADMIN DSCHANGE(repname,S|D,1|2|3)

In the message text:
reason  Indicates the reason of this error. The reason can be one of the following:
• Repository data set status is unchanged
• RDS status not available for this request
• DISCARD rejected; no SPARE repository data set
• DISCARD rejected; last COPY repository data set
• Invalid repository data set data sets
• Repository data set status changes detected
• Repository not STOPPED

System action: The command is not processed.
User response: View the repository details by using the ADMIN DISPLAY command, and examine the status of the repository data set before reissuing the command.

FPQ3003E  STACKING PC - FPQ SUBSYSTEM ALREADY INSTALLED

Explanation: The Service Repository subsystem should only be installed once. The FPQCRFSH utility can be used to refresh the FPQCXCF2 module.

System action: The second installation of the stacking PC is rejected.
User response: None.

FPQ3005E  STACKING PC - MODULE FPQCXCF2 NOT LOCATED

Explanation: The Service Repository subsystem has successfully installed and established the stacking PC, but the client XCF module FPQCXCF2 can not be located in LPA.

System action: All API calls will fail with a reason code RSN_NO_CLIENT_XCF (x'1151')
User response: Module FPQCXCF2 must be made available in LPA. Use the refresh utility FPQCRFSH in conjunction with the SETPROG LPA,ADD command to add FPQCXCF2 to LPA and allow the stacking PC code to locate it.

FPQ3006E  STACKING PC - FPQ SUBSYSTEM NOT INITIALIZED

Explanation: This error message is issued by the refresh utility FPQCRFSH. It is issued if the FPQ subsystem is located but has not been initialized. This can happen if the initialization routine FPQCSSI2 was not available in LPA at the time the subsystem was installed.

System action: All API calls will fail with a reason code RSN_CSSPC_ERR (x'1101')
User response: The FPQ subsystem and stacking PC must be installed correctly. The system must be IPLed, FPQCSSI2 and FPQCXCF2 made available in LPA, and the FPQ subsystem reinstalled.

FPQ3007W  MODULE FPQCXCF2 EYECATCHER INFORMATION HAS NOT CHANGED

Explanation: This error message is issued by the refresh utility FPQCRFSH. It is a warning to say that the version of module FPQCXCF2 just installed contains the same eyecatcher date and time as the one being replaced. The load module eyecatcher date and time are set at compile time, so this indicates that the same version of FPQCXCF2 has been reinstalled.

This may indicate that the system commands SETPROG LPA,DELETE and SETPROG LPA,ADD were either not issued, or issued incorrectly.

System action: None.
User response: Check system commands issued, and
rerun the FPQCRFSH utility if necessary.

**FPQ3008I**  STACKING PC - DYNAMICALLY ADDING FPQ2 SUBSYSTEM

**Explanation:** The refresh utility (FPQCRFSH) determined that the FPQ subsystem is not present. The FPQCRFSH utility will attempt to add the subsystem dynamically.

**System action:** Processing continues.

**User response:** Look for later message FPQ3001I which will indicate the success of the dynamic subsystem add request, otherwise an error message is displayed.

**FPQ3010I**  ENTER SETPROG DELETE AND ADD COMMANDS, REPLY 'C' WHEN COMPLETED

**Explanation:** This is the WT OR issued by the refresh utility FPQCRFSH.

**System action:** None.

**User response:** None.

**FPQ3101E**  XCF SRB FAILURE: FPQCMSRB - TXXXX REASON=xxxxxxxx

**Explanation:** XCF message exit (FPQCMSRB) hardcoded WTO message. The SRB's FRR routine has trapped an abend in order to report the event through this WTO message.

**System action:** Analyze the abend dump.

**User response:** None.

**FPQ3102E**  XCF SRB FAILURE: FPQCGSRB - TXXXX REASON=xxxxxxxx

**Explanation:** XCF group exit (FPQCGSRB) hardcoded WTO message. The SRB's FRR routine has trapped an abend in order to report the event through this WTO message.

**System action:** Analyze the abend dump.

**User response:** None.

**FPQ3103E**  XCF SRB FAILURE: FPQSMSRB - TXXXX REASON=xxxxxxxx

**Explanation:** XCF message exit (FPQSMSRB) hardcoded WTO message. The SRB's FRR routine has trapped an abend in order to report the event through this WTO message.

**System action:** Analyze the abend dump.

**User response:** None.

**FPQ3104E**  XCF SRB FAILURE: FPQSGSRB - TXXXX REASON=xxxxxxxx

**Explanation:** XCF group exit (FPQSGSRB) hardcoded WTO message. The SRB's FRR routine has trapped an abend in order to report the event through this WTO message.

**System action:** Analyze the abend dump.

**User response:** None.

**FPQ3105E**  XCF SRB FAILURE: FPQSSSRB - TXXXX REASON=xxxxxxxx

**Explanation:** XCF subordinate-server group exit (FPQSSSRB) hardcoded WTO message. The SRB's FRR routine has trapped an abend in order to report the event through this WTO message.

**System action:** Analyze the abend dump.

**User response:** None.

**FPQ3106E**  XCF ERROR: FPQSMSRB - MSGX RC=xx REASON=xxxxxxxx

**Explanation:** XCF group exit (FPQSMSRB) hardcoded WTO message. Either an IXCMSGI (XCF input message) or IXCMSGO (XCF output message) macro has failed. This is not expected to occur, so this SRB event is recorded through this WTO.

**System action:** Check with Systems Programming, Increase XCF control blocks.

**User response:** None.

**FPQ3107E**  XCF SRB FAILURE: <module> - CB=xxxx ARCLEV=xx

**Explanation:** A failure occurred in a cross-system coupling facility (XCF) member exit. The service request block (SRB) has encountered an unsupported architecture level or control block.

In the message text:

- `module` indicates the module in which the failure occurred. The `module` can be either FRPCMSRB (client-side exit) or FRPSMSRB (server-side exit).
- `xxxx` indicates the data that was found in the control block where a control block eye-catcher was expected.
- `xx` indicates the extracted architecture level that is not supported. The architecture level (ARCLEV) value is displayed if the eye-catcher represents a valid block.

**System action:** Indicates the extracted architecture level that is not supported. The architecture level (ARCLEV) value is displayed if the eye-catcher represents a valid block.
FPQ3108E • FPQ4000E

User response: Check that the client and the server are both running at the same maintenance level. Contact IBM Software Support.

FPQ3108E ENF ERROR: FPQSENF - MSG=xx RC=xx REASON=xxxxxxxx

Explanation: A failure occurred in the server-side ENF listener exit (FPQSENF). The functional recovery routine (FRR) of the service request block (SRB) has trapped the abend in order to report the event by using this message.

System action: Processing ends for the affected SRB.

User response: Contact IBM Software Support.

FPQ3109E XCF SRB FAILURE: FPQCMSRB - SLOT MISMATCH

Explanation: A failure occurred in the client-side XCF member exit (FPQCMSRB). The service request block (SRB) identified a consistency token mismatch between a server response and the associated client slot.

System action: Processing ends for the affected SRB. The client might be placed in wait state.

User response: Contact IBM Software Support.

FPQ3110E XCF SRB FAILURE: FPQCMSRB - BAD SLOT STATE FLAG1=xx

Explanation: A failure occurred in the client-side XCF member exit (FPQCMSRB). The service request block (SRB) identified an issue while processing a server response. The state of the associated client slot was not as expected.

In the message text:

xx Indicates the slot state flag byte. This value is returned for diagnostic purposes.

System action: Processing ends for the affected SRB. The client might be placed in wait state.

User response: Contact IBM Software Support.

FPQ3111E RESMGR FPQSRV RC=rc/rsn FC=fc

Explanation: While attempting client FPQ object cleanup, the FPQ client-side RESMGR exit (FPQCRMGR) issued an FPQSRV request, but the request failed or ended in error. This message is issued to capture the feedback for diagnostic purposes and might not represent any error.

In the message text:

rc Indicates the return code for this error.
rsn Indicates the reason code for this error.

System action: RESMGR processing attempts to continue.

User response: Contact IBM Software Support.

FPQ4000E Function xxxxxx failed with reason code xxx

Explanation: Service repository API function xxxxxx received an error with reason code RSN.
System action: Processing is stopped at the point of error.

User response: Refer to the FPQ reason codes section of this user's guide for a description of the error.

---

**FPQ4001E**  
**FPQ subsystem not found**

**Explanation:** The FPQ subsystem is not installed.

**System action:** No processing is performed.

**User response:** Ensure the installation of the FPQ subsystem was performed successfully.

---

**FPQ4002E**  
**XCF group xxxxx not found**

**Explanation:** The XCF group as supplied in the PARM parameter on the job EXEC statement cannot be found.

**System action:** No processing is performed.

**User response:** Check the XCF group name set up in the Service Repository server configuration matches that supplied in the job parameters.

Check the Service Repository server has started successfully.

---

**FPQ4003E**  
**No FPQ server is active in the XCF group xxxxx**

**Explanation:** The Service Repository server is not found in XCF group as supplied in the PARM parameter on the job EXEC statement.

**System action:** No processing is performed.

**User response:** Check the XCF group name set up in the Service Repository server configuration matches that supplied in the job parameters.

Check the Service Repository server has started successfully.

---

**FPQ4004E**  
**The FPQ server is in shutdown mode**

**Explanation:** Either an error has occurred and the server is in the processes of shutting down, or a shutdown command has been issued for the server and the server is in the process of shutting down.

**System action:** Processing is stopped at the point of error.

**User response:** Check the server's message log for error messages or shutdown request messages.

---

**FPQ4005E**  
**The FPQ server has shutdown or has failed**

**Explanation:** Either an error has occurred in the server, or a shutdown command has been issued for the server and the server is no longer active.

---

**FPQ4006E**  
**The FPQ server is busy, try again later**

**Explanation:**

**System action:** Processing is stopped at the point of error.

**User response:** Try resubmitting the JCL.

---

**FPQ4008E**  
**xxxxxx repository not found**

**Explanation:** The server could not find the named repository.

**System action:** Processing is stopped at the point of error.

**User response:** Ensure that the supplied repository name is correct, or check the server message log for error messages.

---

**FPQ4009E**  
**xxxxxx repository not available**

**Explanation:** The repository might be stopped, in the process of stopping, or in error.

**System action:** Processing is stopped at the point of error.

**User response:** Check the server message log to establish the cause. If the repository is in stopped status, it can be started again with a START command. If the cause is due to an error, contact IBM Software Support.

---

**FPQ4010E**  
**User has insufficient access**

**Explanation:** Function call rejected by SAF due to lack of authority.

**System action:** No processing is performed.

**User response:** Ensure that you have defined the SAF security as required.

---

**FPQ4014E**  
**xxxxxx is in use**

**Explanation:** An update or delete of a repository definition has been requested, but the repository definition is locked for use by another job or user.

**System action:** Processing is stopped at the point of error.

**User response:** Try resubmitting batch commands from the one in error.
FPQ4022E  Repository repository_name already defined in the catalog

Explanation:  An attempt was made to add a repository to the Catalog repository, but a repository of the same name already exists.

System action:  Processing is stopped.

User response:  Specify a unique repository name and retry.

---

FPQ4031E  Catalog busy, repository definition entry repository_name is not available

Explanation:  The entry in the Catalog repository for the repository repository_name is currently unavailable. The Catalog repository was in the process of making another, conflicting update.

System action:  The command was rejected.

User response:  Retry later.

---

FPQ4032E  Repository repository_name is not in stopped status

Explanation:  A repository must be stopped before you can attempt to update or delete it.

System action:  Processing is stopped.

User response:  Issue a stop request against the repository. Check the server message log for the stop completed message.

---

FPQ4040W  Repository repository_name RDS status is unchanged

Explanation:  The repository data set status is unchanged. The repository data set is already in the required state.

System action:  Processing continues.

User response:  None.

---

FPQ4041E  Repository repository_name RDS status not applicable

Explanation:  The status of the repository data set is not applicable to this request. This message is issued when, for example, you attempt to use a repository data set that has a status of COPY1 or COPY2 as a SPARE data set.

System action:  Processing is stopped.

User response:  Display the repository information and check its current state. Check the server message log for error messages.

---

FPQ4042E  Repository repository_name DISCARD rejected, need SPARE RDS

Explanation:  A discard request was rejected because a SPARE repository data set is not available. This message is issued when, for example, you attempt to discard a COPY1 or COPY2 IMSRSC repository data set when there is no SPARE repository data set available.

System action:  Processing is stopped.

User response:  Display the repository information and check its current state. Check the server message log for error messages.

---

FPQ4043E  Repository repository_name DISCARD rejected, last COPY RDS

Explanation:  A discard request was rejected because this is the last available COPY repository data set. This message is issued when, for example, you attempt to discard a COPY1 repository data set when there is no COPY2 repository data set.

System action:  Processing is stopped.

User response:  Display the repository information and check its current state. Check the server message log for error messages.

---

FPQ4044E  Repository repository_name RDS data sets invalid

Explanation:  The repository data sets are invalid. This message is issued when, for example, you attempt to copy a discarded repository data set to the SPARE repository data set but the basic validation for the data sets fails.

System action:  Processing is stopped.

User response:  Display the repository information and check its current state. Check the server message log for error messages.

---

FPQ4045E  Repository repository_name RDS data sets not empty

Explanation:  The repository data sets are not empty. This message is issued when, for example, you attempted to change the status of a repository data set pair from DISCARD to SPARE but the data sets are not empty. In this case, the status of the repository data set is not changed and remains in a discarded state.

System action:  Processing is stopped.

User response:  Display the repository information and check its current state. Check the server message log for error messages.
FPQ4046E  Resultant repository definition is invalid. Request rejected.

Explanation: An ADD or UPDATE batch request for the repository definition was rejected because an error was detected during validation of the repository definition.

System action: Processing is stopped.

User response: Review the parameter values that are specified in the request, correct any errors, and try the request again. If this is an UPDATE request, then the specified parameter values must be considered in the context of the current repository definition.

FPQ4273E  Server error. Feedback: xxxxxx xxxxxx

Explanation: An unexpected error occurred on the server.

System action: Processing is stopped at the point of error.

User response: Contact IBM Software Support.

FPQ4700E  SYSPRINT DD is missing

Explanation: The SYSPRINT DD was not specified in the JCL.

System action: Processing is stopped immediately.

User response: Specify the SYSPRINT DD in the JCL and retry.

FPQ4701E  Error opening SYSPRINT file, RC=xxx

Explanation: Error opening SYSPRINT file.

System action: Processing is stopped immediately.

User response: Refer to the z/OS DFSMS Macro Instructions for Data Sets for OPEN macro return codes.

FPQ4702E  SYSIN file missing

Explanation: The SYSIN DD was not specified in the JCL.

System action: Processing is stopped immediately.

User response: Specify the SYSIN DD in the JCL and retry.

FPQ4703E  Error opening SYSIN file. RC= xxx

Explanation: Error opening SYSIN file.

System action: Processing is stopped immediately.

User response: Refer to z/OS DFSMS Macro Instructions for Data Sets for OPEN macro return codes.

FPQ4704E  Virtual storage obtain request failed. Length= xxx

Explanation: The specified amount of storage could not be obtained.

System action: Processing is stopped immediately.

User response: Increase the REGION size of your job. If this does not correct the problem, contact IBM Software Support.

FPQ4705E  XCFGROUP must be supplied in the PARM parameter on the job EXEC statement

Explanation: Parameters are required that must be supplied using the PARM parameter of the job EXEC statement.

System action: Processing is stopped immediately.

User response: Supply the required parameters in the job EXEC statement and retry.

FPQ4706E  The xxxxxx parameter is invalid.

Explanation: The parameter value supplied in the job PARM parameter is invalid.

System action: Processing is stopped immediately.

User response: Correct the required parameters in the job EXEC statement and retry.

FPQ4710E  The command xxxxx is unknown

Explanation: Unrecognized command in SYSIN data.

System action: Input checking continues, but no processing is performed.

User response: Correct the input statement in the SYSIN data.

FPQ4711E  The parameter xxxxx is unknown

Explanation: The named parameter is not valid for the current command.

System action: Input checking continues, but no processing is performed.

User response: Correct the input statement in the SYSIN data.

FPQ4712E  xxxxxx parameter parentheses error

Explanation: Parameter values must be enclosed in parentheses.

System action: Input checking continues, but no processing is performed.

User response: Correct the input statement in the SYSIN data.
FPQ4713E  xxxxxxx parameter value length error
Explanation: Error in parameter value specification.
System action: Input checking continues, but no processing is performed.
User response: Correct the input statement in the SYSIN data.

FPQ4714E  xxxxxxx parameter value is invalid
Explanation: Error in parameter value specification.
System action: Input checking continues, but no processing is performed.
User response: Correct the input statement in the SYSIN data.

FPQ4715E  Too many values specified for parameter xxxxxx
Explanation: Parameter specification error.
System action: Input checking continues, but no processing is performed.
User response: Correct the input statement in the SYSIN data.

FPQ4716E  xxxxxxx parameter requires a value
Explanation: Parameter requires a value.
System action: Input checking continues, but no processing is performed.
User response: Correct the input statement in the SYSIN data.

FPQ4717E  The parameter xxxxxxx is required
Explanation: The named parameter is required for the current command.
System action: Input checking continues, but no processing is performed.
User response: Correct the input statement in the SYSIN data.

FPQ4718E  The repository name CATALOG is reserved and cannot be used
Explanation: The name CATALOG is used internally and cannot be used as a repository name.
System action: Input checking continues, but no processing is performed.
User response: Choose another repository name and retry.

FPQ4719E  Specify either STATUS or a repository name
Explanation: Cannot specify both STATUS and a repository name.
System action: Input checking continues, but no processing is performed.
User response: If you require a list of the status of all repositories specify STATUS only. If you require the details of a single repository, specify the repository name only.

FPQ4720E  Parameter xxxxx already specified
Explanation: Only one occurrence of the named parameter is allowed for the command.
System action: Input checking continues, but no processing is performed.
User response: Correct the input statement in the SYSIN data.

FPQ4721E  The CATALOG uses one or more of the VSAM data sets specified
Explanation: Specifying the catalog VSAM data sets for a user repository is not allowed.
System action: Input checking continues, but no processing is performed.
User response: Correct the input statement in the SYSIN data and resubmit job.

FPQ4730E  Cannot connect to the CATALOG
Explanation: An attempt to connect to the CATALOG failed. The reason why is described in the message following FPQ4730.
System action: No processing is performed.
User response: Check the message following FPQ4730, correct problem, and retry.

FPQ4731E  Repository xxxxxxx already defined in the catalog
Explanation: An attempt was made to ADD a repository to the catalog, but a repository of the same name already exists.
System action: Processing stopped.
User response: Choose a unique repository name and retry.
Repository xxxxxxx does not exist in the catalog

Explanation: An attempt was made to DELETE a repository from the catalog, but it does not exist in the catalog.

System action: Warning only. Processing continues.

User response: None.

Repository xxxxxxx is already started

Explanation: An attempt was made to change the repository state to started, but the repository is already in the started state.

System action: Warning only. Processing continues.

User response: None.

Repository xxxxxxx is already stopped

Explanation: An attempt was made to change the repository state to stopped, but the repository is already in a stopped state.

System action: Warning only. Processing continues.

User response: None.

Repository xxxxxxx is not in stopped status

Explanation: A repository must be in stopped status before you can update or delete it.

System action: Processing stopped.

User response: Issue a stop request against the repository. Check the server message log for the stop completed message.

The catalog is empty

Explanation: There are no repositories defined in the catalog.

System action: None.

User response: None.

The repository START/STOP request has been scheduled successfully

Explanation: The repository request (START or STOP) was scheduled successfully.

System action: Processing continues.

User response: None.

Repository repository-name is not state, processing continues

Explanation: A repository START or STOP request has not completed successfully within the MAXWAIT time, and the CONTINUE processing option has been specified.

State values are STARTED or OPEN, CLOSED or STOPPED.

The OPEN state is checked on START if AUTOOPEN=YES.

The CLOSED state occurs after the STOPPED state, and must be reached to release the repository resources.

System action: Processing continues.

User response: Use the List Repositories administration panel to display the repository information and check its current state. Check the server message log for error messages. If necessary, increase the MAXWAIT time.

Repository repository-name is not state, processing aborted

Explanation: A repository START or STOP request has not completed successfully within the MAXWAIT time, and the ABORT processing option has been specified.

State values are STARTED or OPEN, CLOSED or STOPPED.

The OPEN state is checked on START if AUTOOPEN=YES.

The CLOSED state occurs after the STOPPED state, and must be reached to release the repository resources.

System action: Processing stops.

User response: Use the List Repositories administration panel to display the repository information and check its current state. Check the server message log for error messages. If necessary, increase the MAXWAIT time, or change the processing option from ABORT to CONTINUE.

Repository repository-name repository not found

Explanation: The server could not find the repository repository-name.

System action: Processing continues.

User response: Make sure that the repository name that you provided is correct. Check the server message log for error messages.
**FPQ4753I**  
**command_name** command processing completed with warnings

**Explanation:** The command processing completed with warnings.

In the message text:

```
command_name
```

Indicates the name of the command.

**System action:** Processing continues.

**User response:** Locate the command with warnings by checking previous messages. If warnings are significant, correct the errors and resubmit JCL statements from this point onwards.

---

**FPQ4750I**  
xxxxxxx command processed successfully

**Explanation:** Statement processed successfully.

**System action:** None.

**User response:** None.

---

**FPQ4751E**  
xxxxxx command not processed due to previous errors

**Explanation:** A previous command has received an error. No more processing is performed.

**System action:** Processing stopped at the point of error.

**User response:** Locate the command in error by checking previous messages. Correct the errors and resubmit the JCL statements from this point forward.

---

**FPQ4752E**  
No processing performed due to previous errors

**Explanation:** Syntax checking of the SYSIN input found errors. No processing of any command took place.

**System action:** No processing is performed.

**User response:** Check previous errors and correct the SYSIN data.

---

**FPQ4999E**  
Message xxxxxx cannot be formatted, reason code xxx

**Explanation:** There is an error with the batch message formatter.

**System action:**

**User response:** Contact IBM Software Support.

---

**FPQ8001E**  
DUMPTRACE command ignored because FPQPRINT DD not allocated

**Explanation:**

**System action:**

**User response:** Provide the FPQPRINT DD statement when using the DUMPTRACE command.
Chapter 15. HKT return and reason codes (repositories)

This reference section provides detailed information about the return and reason codes issued by the IMS Tools Knowledge Base repositories.

Errors not listed in this table are internal errors and should be reported to IBM Software Support.

Table 21. Return and reason codes reported by IMS Tools

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Chapter 16. HKT error messages (import and export utility)

This reference section provides detailed information about the error messages issued by the IMS Tools Knowledge Base import and export utility.

Message format

IMS Tools Knowledge Base import and export utility messages adhere to the following format:

\[ \text{HKT}nnnnx \]

where:

- **HKT** Indicates that the message was issued by IMS Tools Knowledge Base import and export utility
- \( nnnn \) Indicates the message identification number
- \( x \) Indicates the severity of the message:
  - A Indicates that operator intervention is required before processing can continue.
  - E Indicates that an error occurred, which might or might not require operator intervention.
  - I Indicates that the message is informational only.
  - W Indicates that the message is a warning to alert you to a possible error condition.

Each message also includes the following information:

Explanation:
The Explanation section explains what the message text means, why it occurred, and what its variables represent.

System action:
The System action section explains what the system will do in response to the event that triggered this message.

User response:
The User response section describes whether a response is necessary, what the appropriate response is, and how the response will affect the system or program.

Explanation of message text components

Example message output:

\[ \text{LOCID} = \text{DDD} \quad \text{RC} = \text{12} \quad \text{RSN} = \text{001} \quad \text{R0} = \text{F0C9XX01} : \text{INVALID KEYWORD} \]

\[ \text{LOCID} = \text{DDD} \]

LOCID indicates the internal location, in decimal format, where the message originated.

This information is useful for debugging the source code and might not be useful to the end-user.

\[ \text{RC} \]

The return code value in hexadecimal format.
This information is appropriate for an end-user submitting a JCL job.

**RSN**  
The reason code value in hexadecimal format.

This information is appropriate for an end-user submitting a JCL job.

**R0=MMMMXXRR**  
R0 displays the value that is in the 32-bit register zero when the process returns.

This information is appropriate for a programmer who is internally invoking the import export utility.

**MMMM**  
The internal identification of the module, in hexadecimal format, that issues the error (either x’F0C9’ or x’F1C9’).

**XX**  
The hexadecimal value of the location identifier.

This value is the hexadecimal equivalent to **DDD** (which is in decimal format).

**RR**  
The hexadecimal value of the reason code.

---

**HKT0001E**  
**LOCID=DDD RC=0C RSN=01**  
**R0=F0C9XX01 : INVALID OR UNDEFINED KEYWORD ENTERED**

**Explanation:** The user specified an invalid keyword in the input stream. This includes AUDIT types.

**System action:** The program terminates processing and returns the error code.

**User response:** Most likely a keyword was misspelled. Check how far the output report has proceeded. It may provide a clue as to which keyword was misspelled.

---

**HKT0002E**  
**LOCID=DDD RC=0C RSN=02**  
**R0=F0C9XX02 : INPUT SPECIFICATION ONLY ALLOWED IN PRIMARY INPUT**

**Explanation:** A keyword was specified in the SYSIN type file (secondary input) that is only allowed in the primary input (that is, the input parameter list). The list of keywords are: INPUT, LOGFILE, MAXRECORDS and SUPRESS_COMMENT.

**System action:** The program terminates processing and returns the error code.

**User response:** Check to make sure that none of the above keywords are specified in the secondary input. If you wish to use any of them, they must be specified in the primary input parameter list.

---

**HKT0003E**  
**LOCID=DDD RC=0C RSN=03**  
**R0=F0C9XX03 : PRINT SPECIFICATION ONLY ALLOWED IN PRIMARY INPUT**

**Explanation:** This similar to HKT0002E, except that it refers to the specific keyword: PRINT.

---

**HKT0004E**  
**LOCID=DDD RC=10 RSN=04**  
**R0=F0C9XX04 : THE PRINT DDNAME IS MISSING**

**Explanation:** The print file could not be opened.

**System action:** The program terminates processing and returns the error code.

Prior to setting the PRINT file output, the output is queued up in a dynamically allocated SYSOUT=* file. Each record or message is printed in a dump format style. The file will have a DDNAME of SYSnmm, where mmm is an integer.

**User response:** Verify that the DDNAME for the output print file is in the JCL. If the default file is being used, then it is SYSPRINT; otherwise, it will be what is specified by the PRINT keyword.

---

**HKT0005E**  
**LOCID=DDD RC=10 RSN=05**  
**R0=F0C9XX05 : ITKB REPORT OPEN FAILED**

**Explanation:** The print file could not be opened.

**System action:** The program terminates processing and returns the error code.

**User response:** Verify that the attributes for the print file are compatible. The print file must be defined as a sequential dataset with RECFM=FBA, LRECL=133.
Once the scanning of the commands is completed, the System action: The program terminates processing and returns the error code.

User response: Be sure that the GROUP name is specified in the input stream.

---

User response: The user can govern the scanning option using the SCAN keyword.

---

User response: Be sure that value for the HISTORY keyword is either YES, NO or implied. This error may be detected in phase #1 with a reason code of 47 (decimal).

---

User response: Be sure that value for the COMMIT keyword is either YES, NO, IGNORE or implied. This error may be detected in phase #1 with a reason code of 47 (decimal).

---

User response: Be sure that value for the DELETE keyword is either YES, NO, CONDITIONAL or implied. This error may be detected in phase #1 with a reason code of 47 (decimal).

---

User response: Be sure that value for the SKIP keyword is either YES, NO, or implied. This error may be detected in phase #1 with a reason code of 47 (decimal).
HKT0020E  LOCID=DDD RC=08 RSN=14
R0=F0C9XX14 : THE SCAN VALUE SPECIFIED IS INVALID

Explanation: During phase #2 of processing the value for the SCAN keyword was found to be invalid.
System action: The program terminates processing and returns the error code.
User response: Be sure that value for the SCAN keyword is either YES, NO, or implied.

This error may be detected in phase #1 with a reason code of 47 (decimal).

Note: The value specified does not check for storage range. It may be larger than the available storage.

HKT0021E  LOCID=DDD RC=08 RSN=15
R0=F0C9XX15 : THE GROUP VALUE SPECIFIED IS INVALID

Explanation: During phase #2 of processing the value for the GROUP name was found to begin with a non-printable character.
System action: The program terminates processing and returns the error code.
User response: This can occur if a GROUP is specified without a value. Make sure the GROUP=group name is specified. This is only syntax checking. It does not guarantee that it is an actual (nor correct) GROUP name value.

Note: By default, the maximum number of records is 1000 - which should be easily enough for all conditions. If this number is not large enough, then the user should reevaluate the commands inputted.

HKT0022E  LOCID=DDD RC=08 RSN=16
R0=F0C9XX16 : THE REPOSITORY VALUE SPECIFIED IS INVALID

Explanation: During phase #2 of processing the value for the REPOSITORY name was found to begin with a non-printable character.
System action: The program terminates processing and returns the error code.
User response: This can occur if a REPOSITORY is specified without a value. Make sure the REPOSITORY=repository name is specified. This is only syntax checking. It does not guarantee that it is an actual (nor correct) repository name value.

HKT0023E  LOCID=DDD RC=08 RSN=17
R0=F0C9XX17 : AN INVALID MAXIMUM RECORD SIZE SPECIFIED

Explanation: The value supplied by MAXRECORDS is invalid. The value may contain invalid numeric syntax or a negative value.
System action: The program terminates processing and returns the error code.
User response: Check the value specified by MAXRECORDS for correctness.

HKT0024E  LOCID=DDD RC=0C RSN=18
R0=F0C9XX18 : AN INPUT RECORD STORAGE OVERFLOW

Explanation: Input from the file (SYSIN-type) overflowed the input buffer.
System action: The program terminates processing and returns the error code.
User response: Increase the size of the input buffer by using the MAXRECORDS keyword and rerun.

Note: The PROJECT name specified was not registered to the import/export facility.

HKT0025E  LOCID=DDD RC=08 RSN=19
R0=F0C9XX19 : THE PROJECT SPECIFIED WAS NOT FOUND

Explanation: The PROJECT name accessed by the PROJECT name is corrupt.
System action: The program terminates processing and returns the error code.
User response: Check the spelling of the PROJECT name supplied. Use the LIST option to list all projects defined to validate.

HKT0026E  LOCID=DDD RC=10 RSN=1A
R0=F0C9XX1A : THE PROJECT ENVIRONMENT IS CORRUPT

Explanation: The PROJECT value accessed by the PROJECT name is corrupt.
System action: The program terminates processing and returns the error code.
User response: If you are using the EXTENTS_MODULE option, make sure you are accessing a valid module with PROJECT definitions. If you are using the default, then this is an administration problem.

HKT0027E  LOCID=DDD RC=0C RSN=1B
R0=F0C9XX1B : THE FIELD SPECIFIED IS NOT FOUND

Explanation: The name of a FIELD in a FIELD statement was not found.
System action: The program terminates processing and returns the error code.
User response: Check the spelling. If you are using the PROJECT keyword, make sure that the name corresponds to either a project FIELD name or one of
the built-in FIELD names (for example, MEMBER). If a PROJECT has not been specified, then make sure that is a built-in FIELD name.

The LIST option can be used to verify FIELD names.

**Explanation:**

The value supplied by a FIELD statement is invalid to the type.

**System action:**
The program terminates processing and returns the error code.

**User response:**
Check to make sure that the value supplied is correct for the syntax of the FIELD. For example, if a numeric value is the value of FIELD, a non-numeric value will trigger this error.

**Explanation:**

The specification for MAXDATASIZE has an invalid numeric syntax.

**System action:**
The program terminates processing and returns the error code.

**User response:**
Check the MAXDATASIZE specified value for a correct binary value.

**Explanation:**

The input type of a value is incompatible with the FIELD type definition. The name of the FIELD governs what type of input value is allowed. For example, a RECON type might be an internal, external or a RECON dataset; however, it cannot be a string, pattern, and so on.

**System action:**
The program terminates processing and returns the error code.

**User response:**
Check the FIELD name to see what type is allowed. Either change to another FIELD name that is compatible or change the value and value type to be compatible with the current FIELD name.

**Explanation:**

The length specified for an input value is invalid. This can be a negative length.

**System action:**
The program terminates processing and returns the error code.

**User response:**
Check the LENGTH of the FIELD specification to see that the result is in the valid range of the FIELD.
value is in range of the FIELD data.
This is similar to the HKT0031E message.

HKT0036E  LOCID=DDD RC=0C RSN=24
R0=F0C9XX24 : AN INVALID MIXED STRING SPECIFIED

Explanation: An input FIELD value of type string has an invalid specified MIXED string value. This likely due to an invalid escape value being specified. This is similar to a conversion condition.

System action: The program terminates processing and returns the error code.

User response: Check MIXED strings for valid values, especially with escape sequences. This include MIXED strings where the escape sequence is fully defined. For example, a hex specification has both hex digits specified.

HKT0040E  LOCID=DDD RC=0C RSN=28
R0=F0C9XX28 : AN INVALID LIST OPTION SPECIFIED

Explanation: An invalid LIST option has been specified. The valid values are YES, NO, ONLY or implied.

System action: The program terminates processing and returns the error code.

User response: Check the LIST to see that the LIST option specified is valid.

HKT0041E  LOCID=DDD RC=0C RSN=29
R0=F0C9XX29 : AN INVALID FIELD CHARACTER SPECIFIED

Explanation: A character in a STRING value has an invalid non-printable whitespace character. This can happen if the input was supplied by an editable file.

System action: The program terminates processing and returns the error code.

User response: If a non-printable character is required, consider entering the STRING as either a HEX or a MIXED type.

HKT0042E  LOCID=DDD RC=0C RSN=2A
R0=F0C9XX2A : AN INVALID AUDIT OPTION SPECIFIED

Explanation: The AUDIT specification for a dataset name of a FIELD is undefined. Valid dataset AUDIT types are: SEQUENTIAL, PARTITIONED, and/or GENERATION.

System action: The program terminates processing and returns the error code.

User response: Make sure all AUDIT types in a FIELD for a dataset are valid.

HKT0043I  LOCID=DDD RC=04 RSN=2B
R0=F0C9XX2B : LIST ONLY REQUESTED

Explanation: This is an informational message to indicate the LIST=ONLY processing is being invoked.

System action: The program continues processing.

User response: None.

HKT0044E  LOCID=DDD RC=0C RSN=2C
R0=F0C9XX2C : UNABLE TO LOAD MODULE WITH EXTENDED DEFINITIONS

Explanation: The module containing extended FIELD definitions cannot be loaded. This can be the default module (HKTIMEX2) or an overriding module specified by the EXTENTS_MODULE option.

System action: The program terminates processing and returns the error code.

User response: Make sure that the required extents module is defined and loadable in the JCL STEPLIB.

HKT0045E  LOCID=DDD RC=0C RSN=2D
R0=F0C9XX2D : INVALID SUPPRESS COMMENT

Explanation: The SUPPRESS_COMMENT option has an invalid integer mask definition. The valid values are:
• 0 = no suppression
• 1 = first character asterisk
• 2 = double slashes
• 3 = both (1) and (2)

System action: The program terminates processing and returns the error code.

User response: Check the SUPPRESS_COMMENT keyword for a valid integer SUPPRESS_COMMENT mask.

HKT0046I  LOCID=DDD RC=04 RSN=2E
R0=F0C9XX2E : INPUT FILE HAS BEEN BLOCKED

Explanation: This is an informational message to indicate the input (SYSIN-type) file will be blocked from processing. This would be similar to treating the secondary input as a // DD DUMMY type file.

The input file can be blocked by used of the prefixed _BLKI=YES option.

System action: The program continues processing.

User response: None.
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<th>System action</th>
<th>User response</th>
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<td><strong>LOCID=DDD RC=08 RSN=2F</strong>&lt;br&gt;R0=F0C9XX2F : INVALID VALUE SPECIFIED**</td>
<td>An invalid option has been specified for COMMIT, DELETE, HISTORY, ISEMPTY, MEMPRINT, NOEXIST, SCAN, SKIP, or TRY options during phase #1 of parsing.</td>
<td>The program terminates processing and returns the error code.</td>
<td>This error message may supersede the error message for each of the specific option’s error messages.</td>
<td></td>
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<td>HKT1201E</td>
<td><strong>LOCID=DDD RC=10 RSN=01</strong>&lt;br&gt;R0=F1C9XX01 : UNABLE TO OPEN THE REPORT FILE**</td>
<td>Access to the REPORT file during stage #2 failed. This error may be preempted for another error issued during stage #1.</td>
<td>The program terminates processing and returns the error code.</td>
<td>Make sure that the REPORT file (SYSPRINT-type) is well defined in JCL.</td>
<td></td>
</tr>
<tr>
<td>HKT1202E</td>
<td><strong>LOCID=DDD RC=0C RSN=02</strong>&lt;br&gt;R0=F1C9XX02 : THE GROUP NAME IS MISSING**</td>
<td>The chosen XCF GROUP name is missing during stage #2. This error may be preempted for another error issued during stage #1.</td>
<td>The program terminates processing and returns the error code.</td>
<td>Be sure the valid GROUP name is supplied for the accessed repository.</td>
<td></td>
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<tr>
<td>HKT1203E</td>
<td><strong>LOCID=DDD RC=0C RSN=03</strong>&lt;br&gt;R0=F1C9XX03 : THE REPOSITORY IS MISSING**</td>
<td>The repository name is missing in stage #2. This error may be preempted for another error issued during stage #1.</td>
<td>The program terminates processing and returns the error code.</td>
<td>Be sure the repository to be accessed is defined in the input stream, either through the REPOSITORY or PROJECT specification.</td>
<td></td>
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<tr>
<td>HKT1204E</td>
<td><strong>LOCID=DDD RC=0C RSN=04</strong>&lt;br&gt;R0=F1C9XX04 : THE REPOSITORY CONNECTION FAILED**</td>
<td>The connection to the specified repository on the specified server failed.</td>
<td>The program terminates processing and returns the error code.</td>
<td>This is most likely a repository system error. Retry and be sure to run with a LOGFILE. If the problem persists, contact the administrator.</td>
<td></td>
</tr>
<tr>
<td>HKT1205E</td>
<td><strong>LOCID=DDD RC=0C RSN=05</strong>&lt;br&gt;R0=F1C9XX05 : AN INVALID FUNCTION IS SPECIFIED**</td>
<td>The lower level stage #2 function to be processed is invalid.</td>
<td>The program terminates processing and returns the error code.</td>
<td>Make sure that either IMPORT or EXPORT has been specified. This may be an internal issue. Contact the administrator.</td>
<td></td>
</tr>
<tr>
<td>HKT1206E</td>
<td><strong>LOCID=DDD RC=0C RSN=06</strong>&lt;br&gt;R0=F1C9XX06 : AN INVALID HISTORY SETTING IS SPECIFIED**</td>
<td>The HISTORY setting is invalid for stage #2. This error may be preempted for another error issued during stage #1.</td>
<td>The program terminates processing and returns the error code.</td>
<td>Be sure the HISTORY in the input stream is valid.</td>
<td></td>
</tr>
<tr>
<td>HKT1207E</td>
<td><strong>LOCID=DDD RC=0C RSN=07</strong>&lt;br&gt;R0=F1C9XX07 : THE UOW WAS NOT CREATED**</td>
<td>The import/export facility failed to create a unit-of-work (UOW) for processing the repository.</td>
<td>The program terminates processing and returns the error code.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
HKT1208E  LOCID=DDD RC=0C RSN=0B
R0=F1C9XX08 : THE GENERIC LOCK FAILED

Explanation: The import/export facility failed to create a GENERIC LOCK for processing the repository.

System action: The program terminates processing and returns the error code.

User response: This is most likely a repository system error. Retry and be sure to run with a LOGFILE. If the problem persists, contact the administrator.

HKT1209E  LOCID=DDD RC=0C RSN=09
R0=F1C9XX09 : THE EXPORT LIST FAILED

Explanation: The import/export facility failed to access the list of all members to export.

System action: The program terminates processing and returns the error code.

User response: This is most likely a repository system error. Retry and be sure to run with a LOGFILE. If the problem persists, contact the administrator.

HKT1210I  LOCID=DDD RC=04 RSN=0A
R0=F1C9XX0A : NO MEMBERS WERE FOUND TO EXPORT

Explanation: This is an informational/warning that the initial list of members to export is empty.

System action: The program terminates processing and returns the error code.

User response: It may be valid that there are no members. Otherwise, check the member specifications, including PRODUCT and TYPE, to see if they are correctly specified.

HKT1211E  LOCID=DDD RC=0C RSN=0B
R0=F1C9XX0B : UNABLE TO OPEN THE IMPORT/EXPORT FILE

Explanation: The import/export file for input (import) could not be opened.

System action: The program terminates processing and returns the error code.

User response: Make sure the file is correctly defined, especially the attributes as sequential (RECFM=VB and LRECL=256). Rerun the original job that populated the import/export file (IMEXFILE-type) and then run the import. If the problem persists, contact administration.

HKT1212E  LOCID=DDD RC=10 RSN=0C
R0=F1C9XX0C : AN INVALID RECORD READ

Explanation: The import/export file has read a corrupted record.

System action: The program terminates processing and returns the error code.

User response: Be sure that the file was correctly built by a successful export of the import/export facility of a compatible version. Rerun the original job that populated the import/export file (IMEXFILE-type) and then run the import. If the problem persists, contact administration.

HKT1213E  LOCID=DDD RC=0C RSN=0D
R0=F1C9XX0D : AN UNKNOWN RECORD TYPE SPECIFIED

Explanation: The import/export file has read a record with an invalid record type. This is similar to HKT1212E.

System action: The program terminates processing and returns the error code.

User response: Be sure that the file was correctly built by a successful export of the import/export facility of a compatible version. Rerun the original job that populated the import/export file (IMEXFILE-type) and then run the import. If the problem persists, contact administration.

HKT1214E  LOCID=DDD RC=0C RSN=0E
R0=F1C9XX0E : AN INVALID RECORD STATE SPECIFIED

Explanation: The import/export file (IMEXFILE-type) has an invalid sequence or a missing COUNTS record.

System action: The program terminates processing and returns the error code.

User response: The most likely cause is that the import/export file was empty. There were no records produced by the original export for the current import. In this case, the best solution is to suppress the import step by using the JCL COND specification (for example, COND=(0,LT,export)).

Also be sure that the file was correctly built by a successful export of the import/export facility of a compatible version. Rerun the original job that populated the import/export file (IMEXFILE-type) and then run the import. If the problem persists, contact administration.
### HKT1215E

**LOCID=DDD RC=0C RSN=0F**  
**R0=F1C9XX0F : THE REPOSITORY WRITE PROCESS FAILED**

**Explanation:** Attempting to write a repository member (import) failed.

**System action:** The program terminates processing and returns the error code.

**User response:** This is likely an environmental problem. This includes, but is not limited to, no available space in the repository to write. If possible obtain a LOGFILE of the problem and contact the administrator.

---

### HKT1216E

**LOCID=DDD RC=04 RSN=10**  
**R0=F1C9XX10 : THERE ARE NO ENTRIES FOUND TO PROCESS**

**Explanation:** This is an informational message. The import/export file (IMEXFILE-type) for import had no members to process. That is, the record count on the COUNTS record was zero.

**System action:** The program continues processing.

**User response:** Check the record criteria on the original export process.

---

### HKT1217E

**LOCID=DDD RC=0C RSN=11**  
**R0=F1C9XX11 : AN INVALID VERIFY ONLY SPECIFIED**

**Explanation:** The value for the COMMIT keyword during stage #2 is invalid. This error may be preempted for another error issued during stage #1.

**System action:** The program terminates processing and returns the error code.

**User response:** Check the COMMIT specification.

---

### HKT1218W

**LOCID=DDD RC=04 RSN=12**  
**R0=F1C9XX12 : THERE ARE NO MEMBERS TO ACCESS**

**Explanation:** This is an informational message. There are no members to access for the export.

**System action:** The program continues processing.

**User response:** Check the record criteria on the original export process.

---

### HKT1219E

**LOCID=DDD RC=08 RSN=13**  
**R0=F1C9XX13 : THE ACCESS TO MEMBER FAILED**

**Explanation:** Access to a repository member for export failed.

**System action:** The program terminates processing and returns the error code.

---

### HKT1220I

**LOCID=DDD RC=04 RSN=14**  
**R0=F1C9XX14 : THE MEMBER WAS REJECTED BECAUSE OF THE HISTORY**

**Explanation:** This is an informational message. A specific member version of writing a member of the repository was rejected because HISTORY=NO was specified on the IMPORT.

**System action:** The program continues processing.

**User response:** None.

---

### HKT1221I

**LOCID=DDD RC=04 RSN=15**  
**R0=F1C9XX15 : THE MEMBER WAS REJECTED BECAUSE OF THE PRODUCT**

**Explanation:** This is an informational message. A specific member version of writing a member of the repository was rejected because the primary PRODUCT specified did not match what was requested.

**System action:** The program continues processing.

**User response:** None.

---

### HKT1222I

**LOCID=DDD RC=04 RSN=16**  
**R0=F1C9XX16 : THE MEMBER WAS REJECTED BECAUSE OF THE TYPE**

**Explanation:** This is an informational message. A specific member version of writing a member of the repository was rejected because the primary TYPE specified did not match what was requested.

**System action:** The program continues processing.

**User response:** None.

---

### HKT1223I

**LOCID=DDD RC=04 RSN=17**  
**R0=F1C9XX17 : THE COMMIT WAS SUPPRESSED BY USER SPECIFICATION**

**Explanation:** This is an informational message. User indicated via the COMMIT=NO for a normal execution, except that the target repository will not be updated. The user could test out processing commands without updating the repository.

**System action:** The program continues processing.

**User response:** When the user is satisfied that the input stream will produce the desired results, then COMMIT=NO can be changed to COMMIT=YES.
HKT1224E  LOCID=DDD RC=0C RSN=18
R0=F1C9XX18 : AN INVALID DELETE OPTION SPECIFIED

Explanation: A DELETE option specified in the input stream was neither YES, NO, CONDITIONAL nor implied.

System action: The program terminates processing and returns the error code.

User response: The user should check to be sure that any DELETE specification is using a valid DELETE option.

HKT1225E  LOCID=DDD RC=0C RSN=19
R0=F1C9XX19 : THE MEMBER DELETE FAILED

Explanation: Access to a repository member for export failed.

An attempt was made to delete a member and the delete failed.

System action: The program terminates processing and returns the error code.

User response: This is likely an environmental problem. Rerun the job with a LOGFILE. If the problem persists, contact the administrator.

HKT1226E  LOCID=DDD RC=0C RSN=1A
R0=F1C9XX1A : AN INVALID SKIP OPTION SPECIFIED

Explanation: The SKIP option had an illegal value. The only values allowed are YES, NO or implied.

System action: The program terminates processing and returns the error code.

User response: Make sure that any SKIP specification has a correct value.

HKT1227E  LOCID=DDD RC=0C RSN=1B
R0=F1C9XX1B : AN INVALID MEMBER PATTERN SPECIFIED

Explanation: This error message has been deprecated.

System action: None.

User response: None.

HKT1228E  LOCID=DDD RC=0C RSN=1C
R0=F1C9XX1C : AN INVALID COMPARE VECTOR SPECIFIED

Explanation: The internal compare vector table had zero entries in stage #2.

System action: The program terminates processing and returns the error code.

User response: This is an environmental problem. Try rerunning with a LOGFILE. If the problem persists, contact an administrator.

HKT1230E  LOCID=DDD RC=0C RSN=1F
R0=F1C9XX1F : AN INVALID UNSIGNED BINARY SPECIFIED

Explanation: An unsigned binary number was larger than the allowed maximum size.

System action: The program terminates processing and returns the error code.

User response: Check any FIELDS referencing unsigned binary numbers for values beyond 64-bits.

HKT1231E  LOCID=DDD RC=0C RSN=20
R0=F1C9XX20 : AN INVALID SIGNED BINARY SPECIFIED

Explanation: A signed binary number was larger than the allowed maximum size.

System action: The program terminates processing and returns the error code.

User response: Check any FIELDS referencing signed binary numbers for values beyond 63-bits.

HKT1232E  LOCID=DDD RC=0C RSN=21
R0=F1C9XX21 : AN INVALID SIGNED PACKED SPECIFIED

Explanation: An unsigned packed number was larger than the allowed maximum size.

System action: The program terminates processing and returns the error code.

User response: Check any FIELDS referencing unsigned packed numbers for values beyond 16-bits/32-digits or for invalid decimal digits.

HKT1233E  LOCID=DDD RC=0C RSN=22
R0=F1C9XX22 : AN INVALID OPERATOR SPECIFIED

Explanation: A comparison operator was specified in a FIELD.

System action: The program terminates processing and returns the error code.

User response: Check the FIELDS to see that all specified explicit operations are correct.

HKT1240E  LOCID=DDD RC=0C RSN=28
R0=F1C9XX28 : AN INVALID ISEMPTY OPTION SPECIFIED

Explanation: Access to the repository member list failed for a reason other than a no members found condition.
System action: The program terminates processing and returns the error code.

User response: This is likely an environmental problem. Rerun the job with a LOGFILE. If the problem persists, contact the administrator.

HKT1241E  LOCID=DDD RC=08 RSN=29
 R0=F1C9XX29 : AN ISEMPTY VIOLATION OCCURRED

Explanation: At least one member was returned while issuing an ISEMPTY test.

System action: The program terminates processing and returns the error code.

User response: This result is legitimate. Processing should continue.

HKT1242E  LOCID=DDD RC=0C RSN=2A
 R0=F1C9XX2A : AN INVALID NOEXIST OPTION SPECIFIED

Explanation: Access to a particular repository member failed for a reason other than the member was not found.

System action: The program terminates processing and returns the error code.

User response: This is likely an environmental problem. Rerun the job with a LOGFILE. If the problem persists, contact the administrator.

HKT1243E  LOCID=DDD RC=08 RSN=2B
 R0=F1C9XX2B : A NOEXIST VIOLATION OCCURRED

Explanation: An imported member was already found in the target repository.

System action: The program terminates processing and returns the error code.

User response: This result is legitimate. Processing should continue.

HKT1244E  LOCID=DDD RC=0C RSN=2C
 R0=F1C9XX2C : INVALID MEMBER PRINT OPTION

Explanation: The MEMPRINT Option supplied in the input stream was invalid.

System action: The program terminates processing and returns the error code.

User response: Make sure that the supplied MEMPRINT option is either YES, NO, CONDITIONAL or implied.

HKT1245E  LOCID=DDD RC=0C RSN=2D
 R0=F1C9XX2D : INVALID TRY OPTION

Explanation: The TRY Option supplied in the input stream was invalid.

System action: The program terminates processing and returns the error code.

User response: Make sure that the supplied TRY option is either YES, NO or implied.

HKT1246E  LOCID=DDD RC=0C RSN=2E
 R0=F1C9XX2E : BAD DEFINED UPDATE FIELD

Explanation: The target of a substitution value is smaller than the substitution value.

System action: The program terminates processing and returns the error code.

User response: Make sure that a substitution value does not overflow its target.
Chapter 17. HKT error messages

This reference section provides detailed information about the error messages issued by the IMS Tools Knowledge Base repositories.

Message format

IMS Tools Knowledge Base repository messages adhere to the following format:

HKTnnnx

where:

HKT Indicates that the message was issued by IMS Tools Knowledge Base repositories
nnnx Indicates the message identification number
x Indicates the severity of the message:

A Indicates that operator intervention is required before processing can continue.
E Indicates that an error occurred, which might or might not require operator intervention.
I Indicates that the message is informational only.
W Indicates that the message is a warning to alert you to a possible error condition.

Each message also includes the following information:

Explanation:
The Explanation section explains what the message text means, why it occurred, and what its variables represent.

System action:
The System action section explains what the system will do in response to the event that triggered this message.

User response:
The User response section describes whether a response is necessary, what the appropriate response is, and how the response will affect the system or program.

Module
The Module section indicates which module or modules are affected.

HKT2001I  HKTJIMPT ended with RC=xxxxxx

Explanation: If a single or multiple reports were being processed, the processing of each report could return a different return code value. This message will display the highest numeric value return code that was encountered during the execution.

User response: None. Information message only.

HKT2002I  The LOG DD failed to open; LOG=NO will be assumed.

Explanation: A HKTLOG DD statement might have been omitted from the HKTJIMPT job stream.

User response: Ensure that a HKTLOG DD statement is in the HKTJIMPT job stream.

HKT2003E  No EXEC parameters found. ITKBSRVR parameter is required.
HKT2004I • HKT2017E

Explanation: The execution parameter has been omitted from the HKTJIMPT job stream.
User response: Add the execution parameter that specifies the ITKBSRVR parameter.

HKT2005E RECFM of REPORT DD is invalid for the ITKB repository.
Explanation: The file that was allocated to the REPORT DD does not have a RECFM of F or V.
User response: Ensure that the file that was allocated to the REPORT DD has a RECFM of F (fixed) or V (variable).

HKT2006E Unsuccessful parse of EXEC PARMS. Internal error.
Explanation: An internal error occurred in the parser.
User response: Contact IBM Software Support.

HKT2007E Errors found in EXEC parameters.
Explanation: Errors were found in the EXEC parameters.
User response: This message is followed by message HKT2004I, which shows the EXEC parameters that were specified. A message that indicates the error will follow.

HKT2008W The PRINT DD failed to open, PRINT=NO will be assumed.
Explanation: A PRINT DD statement might have been omitted from the HKTJIMPT job stream.
User response: Ensure that a PRINT DD statement is in the HKTJIMPT job stream.

HKT2009E Server name is required.
Explanation: An IMS Tools KB server name was not specified.
User response: Ensure that the name of an active IMS Tools KB server is specified.

HKT2010E Unsuccessful parse of SYSIN data. Internal error.
Explanation: An internal error occurred in the parser.
User response: Contact IBM Software Support.

HKT2011E Storage overflow for SYSIN data.
Explanation: An internal error occurred in the parser.
User response: Contact IBM Software Support.

HKT2012E Unable to connect to ITKB repository server.
Explanation: The specified IMS Tools KB server is not active.
User response: Ensure that the name of an active IMS Tools KB server is specified. Check the job log for any additional messages.

HKT2013E Required parameter IMPORT not found. xxxxxx was found.
Explanation: The required control statement verb IMPORT was not found. The character string that was found is displayed in the message.
User response: Ensure that IMPORT is specified on the first control statement.

HKT2014W Report xxxxxx specified as RECORD=N. Report will not be written.
Explanation: The report that was specified was registered in IMS Tools KB as RECORD=N and therefore will not be written into the IMS Tools KB repository.
User response: None.

HKT2015E Invalid RECON type or value. Valid types are DSN, DDN, RCN, or NONE.
Explanation: The value that was specified for the RECON parameter is not one of the allowed values.
User response: Change the RECON parameter to one of the allowed values.

HKT2016E INDEX parameter specified without any sub-parameters. INDEX(mm).
Explanation: An INDEX parameter was found without any sub-parameters.
User response: Ensure that all INDEX parameters are specified with at least one subparameter. The INDEX(mm) value in the message lists the count of the index parameters in the input.

HKT2017E Group type/name must be specified together. INDEX(mm).
Explanation: A GRPTYPE or GRPNAME parameter was found without the other. Both parameters must be present.
User response: Ensure that both the GRPTYPE and
GRNAME parameters are specified. The INDEX(nn) value in the message lists the count of the index parameters in the input.

**HKT2018E** Invalid group type given. Types are CA or DBDS. INDEX(nn).

**Explanation:** The value that was specified for the GRPTYPE parameter was not one of the allowed values.

**User response:** Change the GRPTYPE value to one of the allowed values. The INDEX(nn) value in the message lists the count of the index parameters in the input.

**HKT2019E** Both PART and AREA are given. Only one can be specified. INDEX(nn).

**Explanation:** Both the PART and AREA parameter were specified. Only one can be specified.

**User response:** Ensure that only the PART or AREA parameter is specified. The INDEX(nn) value in the message lists the count of the index parameters in the input.

**HKT2020E** JOBNUMBER specifies too many digits, 7 maximum.

**Explanation:** The JOBNUMBER value is limited to 7 digits maximum.

**User response:** Ensure that the JOBNUMBER value is 7 digits or less.

**HKT2021E** USERID, JOBNAME, JOBNUM, JOBSTART must all be specified.

**Explanation:** One of the following parameters was specified without the others: USERID, JOBNAME, JOBNUM, or JOBSTART.

**User response:** Ensure that USERID, JOBNAME, JOBNUM, and JOBSTART are all specified.

**HKT2022E** JOB start date is greater than today's date or has an invalid format.

**Explanation:** The specified JOBSTART value is incorrect.

**User response:** Ensure that the JOBSTART value uses the correct syntax, yyyy/mm/dd, and that the date is not greater than today's date or before 2004/01/01.

**HKT2023E** STEP name and valid start date must both be specified.

**Explanation:** A STEPNAME or STEPSTART parameter was found without the other. Both parameters must be specified.

**User response:** Ensure that both the STEPNAME and

**HKT2024E** STEP start date is greater than today's date or has an invalid format.

**Explanation:** The specified STEPSTART value is incorrect.

**User response:** Ensure that the STEPSTART value uses the correct syntax, yyyy/mm/dd, and that the date is not greater than today's date or before 2004/01/01.

**HKT2025E** REPORT start date is greater than today's date or has an invalid format.

**Explanation:** The specified RPTSTART value is incorrect.

**User response:** Ensure that the RPTSTART value uses the correct syntax, yyyy/mm/dd, and that the date is not greater than today's date or before 2004/01/01.

**HKT2026E** Report open failed. Verify that all parameters are valid.

**Explanation:** The parameters specified to select a report do not correctly identify a report and have caused a failure when IMPORT attempts to open the nonexistent report.

**User response:** Ensure that the specified parameters correctly identify a report.

**HKT2027E** Invalid OLRSET specified. Values are P, S, or U. INDEX(nn)

**Explanation:** The value that was specified for the OLRSET parameter was not one of the allowed values.

**User response:** Change the OLRSET value to one of the allowed values. The INDEX(nn) value in the message lists the count of the index parameters in the input.

**HKT2028E** Product xx not defined.

**Explanation:** The value that was specified for the PRODUCTID parameter was not defined.

**User response:** Ensure that the product has been registered with the IMS Tools KB server.

**HKT2029E** Report xx not defined.

**Explanation:** The value that was specified for the REPORTID parameter was not defined.

**User response:** Ensure that the report has been registered with the IMS Tools KB server.
**HKT2030W**  Second RECON parameter not required with RCN or NONE.

**Explanation:** A second parameter was found that is not required.

**User response:** The second parameter will be ignored.

---

**HKT2031E**  Verify that the RECON data set name is defined as a RECON1 dsn.

**Explanation:** A data set name that was specified with a dsn parameter was not found in the IMS Tools KB repository.

**User response:** Ensure that the data set name that was specified is defined as a RECON1 in the IMS Tools KB repository.

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**HKT2032E**  Verify that the RECON DD name allocates a data set defined as a RECON1 dsn.

**Explanation:** The data set that was allocated to the ddname that was specified with the DDN parameter was not found in the IMS Tools KB repository.

**User response:** Ensure that the data set name that was specified is defined as a RECON1 in the IMS Tools KB repository.

---

**HKT2033E**  Verify that RECON1, RECON2, and RECON3 DDs allocate a RECON1 dsn.

**Explanation:** The data set names that were allocated to the RECON1, RECON2, and RECON3 DDs did not define a data set name that can be found in the IMS Tools KB repository.

**User response:** Ensure that one of the data set names is defined as a RECON1 in the IMS Tools KB repository.

---

**HKT2034E**  Repository write error

**Explanation:** An error occurred while writing to the IMS Tools KB server.

**User response:** Contact IBM Software Support.

---

**HKT2035W**  Some report records were truncated while being written to the PRINT DD.

**Explanation:** Some of the records in the REPORT DD were longer than allowed for SYSOUT.

**User response:** Ensure that the record length of the REPORT DD file is 133 bytes or shorter.

---

**HKT2036W**  The number of INDEXs exceeded 100. INDEXs after will be ignored

**Explanation:** More than 100 INDEX parameters were found.

**User response:** Ensure that no more than 100 index parameters are specified.

---

**HKT2037E**  There are no RECON entries in the registry.

**Explanation:** HKTJIMPT determined that no RECON entries are present in the IMS Tools KB repository.

**User response:** Notify the IMS Tools KB administrator.

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**HKT2038E**  An INDEX parameter contains an invalid character.

**Explanation:** An INDEX parameter contains an invalid character (* or %).

**User response:** Ensure that the INDEX parameters do not contain the * or % character.

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**HKT2039E**  The xxxx parameter contains an invalid character.

**Explanation:** The parameter contains an invalid character (* or %).

**User response:** Ensure that the parameter does not contain the * or % character.

---

**HKT2050I**  SYSIN records read nnnnnnn REPORT records written nnnnn

**Explanation:** The number of SYSIN records read and the number of REPORT records written to the IMS Tools KB server are displayed.

**User response:** Informational message.

---

**HKT2061E**  Unknown keyword - xxxxx

**Explanation:** An unknown keyword was encountered in the input. The message contains the unknown keyword.

**User response:** Change the unknown keyword to one of the keywords that are defined for HKTJIMPT.

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**HKT2062E**  Unknown positional parameter - xxxxx

**Explanation:** An unknown positional parameter was encountered in the input. The message contains the unknown parameter.

**User response:** Change the unknown parameter to one of the parameters that are defined for HKTJIMPT.
HKT2063E  Keyword missing sub-parameters - 

Explanation: A keyword was encountered without its required sub-parameters. The message contains the keyword parameter.
User response: Ensure that the keyword is specified with all required parameters.

HKT2064E  Input ended before all keywords processed.

Explanation: HKTJIMPT found end-of-file before all of the specified keywords were processed.
User response: Ensure that all keywords are correct.

HKT2065E  Keyword found instead of value - 

Explanation: A keyword was encountered when a value was expected. The keyword is contained in the message.
User response: Ensure that the correct parameter syntax is specified.

HKT2066E  Number out of range - 

Explanation: A number was encountered that was out of the range allowed. The message contains the incorrect number.
User response: Ensure that the number that was specified is within the allowable range.

HKT2067E  Invalid number - 

Explanation: A number was encountered that contained non-decimal digits. The message contains the incorrect number.
User response: Ensure that the number is correctly specified.

HKT2068E  Unknown keyword value - 

Explanation: The value that was specified for the keyword is not one of the allowed values. The message contains the incorrect value.
User response: Ensure that the value that was specified is one of the allowed values.

HKT2069E  Keyword parameter specified more than once - 

Explanation: A keyword was encountered more that once in the input. The message contains the incorrect keyword.
User response: Ensure that the keyword is specified the correct number of times.

HKT2070E  Required parameter was not found.

Explanation: One of the required parameters was not found.
User response: Ensure that all required parameters are specified. This message will be accompanied by HKT2072I.

HKT2071E  Keyword value too long - 

Explanation: The value that was specified for the keyword exceeds the maximum allowable length. The message contains the incorrect value.
User response: Ensure that the value that was specified for the keyword is correct.

HKT2072I  Required parameters are IMPORT, PRODUCTID, REPORTID, RECON, INDEX.

Explanation: This message lists the required parameters for HKTJIMPT.
User response: Informational message.

HKT2100E  Required short name not specified; PRODUCTID= 

Explanation: A short name must be specified for a user product. User products must start with U, V, or W.
User response: Add a unique SNAME parameter value and resubmit this request.

HKT2101E  Invalid RECORD specified; REPORTID=; PRODUCTID= 

Explanation: The RECORD= parameter was specified on the ADDPROD command. The RECORD= parameter is not supported by the ADDPROD command.
User response: Remove the RECORD= parameter from the ADDPROD command and resubmit the request.

HKT2102E  External table load requested failed; TABLENAME= 

Explanation: The name that was specified with the TABLE= parameter could not be located in the library concatenation.
User response: Verify that the name that was specified is the correct name and that the requested table is in the library concatenation. After correcting the error, resubmit the request.
HKT2103E  Invalid command specified; COMMAND=xxxxxx
Explanation: The first non-comment, non-blank string in a request set must be one of the recognized keyword commands. Recognized commands are LIST, ADDPROD, and ADDRPT.
User response: Correct the input and resubmit the request.

HKT2104E  Parsing error. Please verify your input.
Explanation: This generic error identifies an unidentified parsing error. Most errors produce a more specific error message. Generally, additional information is included at the end of this message that can help identify the problem.
User response: Inspect the input in SYSPRINT to attempt to identify the error. If the parser returns information, the message text will include this additional information.

HKT2105E  Short name invalid; PRODUCTID=xx
Explanation: The SNAME parameter was specified for a PRODUCTID that is not recognized as a user product. SNAME is applicable only for user products.
User response: If this is a user product, the PRODUCTID must start with U, V, or W. If this is not a user product, remove the SNAME parameter.

HKT2106E  Long name invalid; PRODUCTID=xx
Explanation: The LNAME parameter was specified for a PRODUCTID that is not recognized as a user product. LNAME is applicable only for user products.
User response: If this is a user product, the PRODUCTID must start with U, V, or W. If this is not a user product, remove the LNAME parameter.

HKT2107E  Error encountered during end processing
Explanation: This is an internal error.
User response: Contact IBM Software Support.

HKT2108E  Run terminated due to missing required execution parameter specifying server ID; ITKBSRVR=
Explanation: The execution parameter that specifies the IMS Tools KB server is missing.
User response: Ensure that the execution parameter that specifies the IMS Tools KB server is included.

HKT2109E  Reserved for future use.
Explanation:
User response:

HKT2110E  Run terminated due to internal error; bad BPE startup
Explanation: A bad return code was received from BPE during startup.
User response: Contact IBM Software Support.

HKT2111E  Run terminated due to internal error; GETMAIN for work area failed
Explanation: A GETMAIN for a required work area failed. Processing terminates.
User response: Increase the region size.

HKT2112E  Run terminated due to SYSIN open failure
Explanation: The SYSIN DD named data set failed to open properly. The requests for service are contained in the SYSIN data set. Processing terminates.
User response: Determine why the data set failed to open, correct the problem, and resubmit the job.

HKT2113E  Required RELEASE parameter is invalid; RELEASE=xxxxxx
Explanation: For products that are loaded from the internal table, a non-blank numeric 6-character RELEASE must be specified. The first two characters of the parameter must not be 00.
User response: Correct the RELEASE parameter and resubmit this request.

HKT2114E  REPOSITORY cannot be specified with REPLACE=YES.
Explanation: REPOSITORY and REPLACE=YES are mutually exclusive parameters.
User response: Remove the REPOSITORY parameter to update a product. If you want to change the repository a product is stored in, the product must be deleted and redefined with the new repository.

HKT2115E  Reserved for future use.
Explanation:
User response:
HKT2116E  Reserved for future use.
Explanation:
User response:

HKT2117E  LIST function for all products with specific REPORTID invalid; REPORTID = xxxxxx
Explanation: A specific REPORTID was requested but no PRODUCTID was specified. This request type is not supported.
User response: Specify either a specific PRODUCTID or LIST PRODUCTID=*.

HKT2118E  REPORTID invalid with ADDPROD function
Explanation: The REPORTID parameter was specified for an ADDPROD command. REPORTID is not a valid parameter with the ADDPROD command.
User response: Remove the REPORTID parameter from the command statement.

HKT2119E  HLQ specified is not valid HLQ; HLQ = xxxxxx
Explanation: The high-level qualifier that was specified does not conform the rules of a data set name qualifier.
User response: Adjust the value to conform to data set naming rules.

HKT2120E  Invalid PRODUCTID for this request; PRODUCTID=xx
Explanation: An invalid PRODUCTID parameter value was detected for this request. The PRODUCTID parameter must use the character set A-Z,0-9,@#$.
If this is an ADDRPT request, it must be for a PRODUCTID for a user product that starts with U, V, or W.
User response: Correct the specified PRODUCTID parameter value and resubmit the request.

HKT2121E  Long name already in use - must be unique; xxxxxx
Explanation: This long name (LNAME) is defined as the long name in another PRODUCTID.
User response: Change the long name and resubmit the request.

HKT2122E  Long title duplicate for product; xxxxxx
Explanation: The long title (LTITLE) must be unique for a product.
User response: Change the long title so that it is unique for the product.

HKT2123E  Short name already in use - must be unique; xxxxxx
Explanation: This short name (SNAME) is defined as the short name for another PRODUCTID.
User response: Change the short name and resubmit the request.

HKT2124E  Short title duplicate for product; xxxxxx
Explanation: This short title (STITLE) is already defined as the short title for this product.
User response: Change the short title and resubmit the request.

HKT2125E  Internal error GET RECORD R15 = xxxxxx; RSN=xxxxxx
Explanation: An error occurred while processing a GET RECORD request.
User response: Contact IBM Software Support.

HKT2126E  Internal error GETMAIN for container list; OUTSIZE=xxxxxx
Explanation: The utility was unable to obtain sufficient storage for a container list. The size requested is shown.
User response: If the size of the request seems reasonable, increase your region size and resubmit your request.
If the size of the request seems unreasonable, contact IBM Software Support.

HKT2127E  Internal error, bad return - container list sizing; R15=xxxxxx; RSN=xxxxxx
Explanation: This is an internal error.
User response: Contact IBM Software Support.

HKT2128E  Internal error, bad return - container list; R15=xxxxxx; RSN=xxxxxx
Explanation: This is an internal error.
User response: Contact IBM Software Support.
HKT2129E  Run terminated due to bad initialization call; R15 = xxxxxx; RSN = xxxxxx
Explanation:  This is an internal error.
User response:  Contact IBM Software Support.

HKT2130E  Open failed for LIST output data set
Explanation:  Open failed for the OUTRPT DD statement. All LIST commands will fail.
User response:  Verify that a valid OUTRPT DD statement is included in the step. Resubmit the request.

HKT2131E  Bad return from point report container; R15 = xxxxxx; RSN = xxxxxx
Explanation:  This is an internal error.
User response:  Contact IBM Software Support.

HKT2132E  Bad return from get next report; R15 = xxxxxx; RSN = xxxxxx
Explanation:  This is an internal error.
User response:  Contact IBM Software Support.

HKT2133E  Internal error, bad get next record; R15 = xxxxxx; R0 = xxxxxx
Explanation:  This is an internal error.
User response:  Contact IBM Software Support.

HKT2134E  Requested report in LIST not found; PRODUCTID=xx; REPORTID=xx
Explanation:  The requested REPORTID to be LISTed from the given PRODUCTID was not found.
User response:  Correct either the PRODUCTID or the REPORTID and resubmit the request.

HKT2135E  Unknown type from table load; xxxxxx type encountered
Explanation:  This is an internal error.
User response:  Contact IBM Software Support.

HKT2136E  Bad return code from add product; R15 = xxxxxx; RSN = xxxxxx
Explanation:  This is an internal error.
User response:  Contact IBM Software Support.

HKT2137E  Internal table load request failed; TABLENAME = xxxxxx
Explanation:  An attempt was made to load the displayed table.
User response:  Verify that you have the correct STEPLIB. If the library is correct, contact IBM Software Support.

HKT2138E  Bad return code from add report; R15=xxxxxx; RSN=xxxxxx
Explanation:  This is an internal error.
User response:  Contact IBM Software Support.

HKT2139E  Incorrect message requested message xxxx not found
Explanation:  This is an internal error.
User response:  Contact IBM Software Support.

HKT2140E  Specified PRODUCTID was not found in the internal table; PRODUCTID=xx
Explanation:  The PRODUCTID that was requested could not be found.
User response:  Correct the value for PRODUCTID parameter and resubmit the request.

HKT2141E  Reserved for future use.
Explanation:
User response:

HKT2142E  External table xxxxxx did not begin with a product record
Explanation:  The requested TABLE= parameter value is not in the proper format.
User response:  Contact the supplier of this table for a correct table name.

HKT2143E  External table xxxxxx had multiple products; only 1 used
Explanation:  The TABLE= parameter name was loaded. The first product was added. Additional product records were on this table. Only the first product was added.
User response:  Inform the supplier of this table.

HKT2144E  Invalid execution parameter
Explanation:  The parser detected a problem with the execution parameter that was specified.
User response: Correct the error and resubmit the request.

HKT2145E Duplicate PRODUCTID; PRODUCTID=xx already exists
Explanation: The ADDPROD request detected that the PRODUCTID to be added already exists within the repository. Some of the data that is associated with this request might not be processed.
User response: Warning message.

HKT2146E Server specified unavailable; ITKBSRVR=xxxxxx
Explanation: The server ID that was specified on the execution parameter cannot be accessed.
User response: Verify that the correct server ID was specified. Inspect the job log for any indication of the problem. Correct and resubmit the request.

HKT2147E PRODUCTID already exists in the repository
Explanation: The request for the ADDPROD failed because the PRODUCTID already exists in the repository.
User response: This is an informational message.

HKT2148E PRODUCTID not found while attempting to add report; PRODUCTID=xx; REPORTID=xxxxxxx
Explanation: The ADDRPT failed because the PRODUCTID requested does not exist. Products must be present before reports can be added to them.
User response: Change the ADDRPT request so that it is associated with an existing PRODUCTID.

HKT2149E Invalid short name. Only 0-9, A-Z, a-z, #, @, $, -_, or blank are valid. SNAME=xxxxxx
Explanation: An invalid value was specified on the SNAME parameter. The value that you specify for the SNAME parameter must either be blank or must consist of the characters 0-9, A-Z, a-z, #, @, $, -_, or blank.
User response: Correct the SNAME parameter value and resubmit the request.

HKT2150E Invalid long name. Only 0-9, A-Z, a-z, #, @, $, -_, or blank are valid. LNAME=xxxxxx
Explanation: An invalid value was specified on the LNAME parameter. The value that you specify for the LNAME parameter must either be blank or must consist of the characters 0-9, A-Z, a-z, #, @, $, -_, or blank.
User response: Correct the LNAME parameter value and resubmit the request.

HKT2151E Invalid short title. Only 0-9, A-Z, a-z, #, @, $, -_, or blank are valid. STITLE=xxxxxx
Explanation: An invalid value was specified on the STITLE parameter. The value that you specify for the STITLE parameter must either be blank or must consist of the characters 0-9, A-Z, a-z, #, @, $, -_, or blank.
User response: Correct the STITLE parameter value and resubmit the request.

HKT2152E Invalid long title. Only 0-9, A-Z, a-z, #, @, $, -_, or blank are valid. LTITLE=xxxxxx
Explanation: An invalid value was specified on the LTITLE parameter. The value that you specify for the LTITLE parameter must either be blank or must consist of the characters 0-9, A-Z, a-z, #, @, $, -_, or blank.
User response: Correct the LTITLE parameter value and resubmit the request.

HKT2153E Invalid RETENTION. Must be between 0 and 32767
Explanation: An invalid value was specified for the RETENTION parameter. The RETENTION parameter must be set to a numeric value between 0 and 32767.
User response: Specify a valid value for the RETENTION parameter and resubmit the request.

HKT2154E SYSIN data set contains no valid data
Explanation: Nothing could be processed because no valid requests were found.
User response: Correct the problem and resubmit the request.

HKT2155E PRODUCTID specified is invalid; PRODUCTID=xx
Explanation: An invalid value was specified for the PRODUCTID parameter. The value that you specify for the PRODUCTID parameter must consist of the characters 0-9, A-Z, a-z, #, @, $, and -.
User response: Correct the PRODUCTID parameter value and resubmit the request.
HKT2156E • HKT2169E

HKT2156E  REPORTID specified is invalid; REPORTID=xxxxxx
Explanation: The REPORTID parameter must use A-Z,0-9,@,#,$ as valid characters.
User response: Specify a valid value for the REPORTID parameter and resubmit the request.

HKT2157E  Invalid RETENTION specified
Explanation: An invalid value was specified for the RETENTION parameter. The value that you specify for the RETENTION parameter must be a numeric value between 0 and 32676.
User response: Specify a valid value for the RETENTION parameter and resubmit the request.

HKT2158I  Request completed successfully
Explanation: Request completed successfully.
User response: This is an informational message that indicates the successful completion of the request.

HKT2159E  Internal error, bad point container;
R15=xxxxxx; R0=xxxxxx
Explanation: This is an internal error.
User response: Contact IBM Software Support.

HKT2160E  Unknown Keyword - xxxxxx
Explanation: An unknown keyword was encountered in the input. The message contains the unknown keyword.
User response: Change the unknown keyword to one of the keywords that are defined for the product administration utility (HKTAPRA0).

HKT2161E  Unknown Positional Parameter - xxxxxx
Explanation: An unknown positional parameter was encountered in the input. The message contains the unknown parameter.
User response: Change the unknown parameter to one of the parameters that are defined for the product administration utility (HKTAPRA0).

HKT2162E  Keyword missing sub-parameters - xxxxxx
Explanation: A keyword was encountered without its required sub-parameters. The message contains the keyword parameter.
User response: Ensure that the keyword is specified with all required parameters.

HKT2163E  Input ended before all keywords processed
Explanation: The product administration utility (HKTAPRA0) found end-of-file before all of the specified parameters were processed.
User response: Ensure that all parameters are correct.

HKT2164E  Keyword found instead of value - xxxxxx
Explanation: A keyword was encountered when a value was expected. The keyword is contained in the message.
User response: Ensure that the correct parameter syntax is specified.

HKT2165E  Number out of range - xxxxxx
Explanation: A number was encountered that was out of the range allowed. The message contains the incorrect number.
User response: Ensure that the number specified is within the allowable range.

HKT2166E  Invalid number - xxxxxx
Explanation: A number was encountered that contained non-decimal digits. The message contains the incorrect number.
User response: Ensure that the number is specified correctly.

HKT2167E  Unknown keyword value - xxxxxx
Explanation: The value that was specified for the keyword is not one of the allowed values. The message contains the incorrect value.
User response: Ensure that you use valid values when specifying this keyword.

HKT2168E  Keyword parameter specified more than once - xxxxxx
Explanation: A keyword was encountered more that once in the input. The message contains the incorrect keyword.
User response: Ensure that the keyword is specified the correct number of times.

HKT2169E  Required parameter was not found
Explanation: One of the required parameters was not found.
User response: Ensure that all required parameters are specified.
## HKT2170E  Keyword value too long - xxxxxx

**Explanation**: The value specified for the keyword is longer than allowed. The message contains the incorrect value.

**User response**: Ensure that the value specified for the keyword is correct.

## HKT2171E  Invalid REPOSITORY name specified; REPOSITORY=xxxxxx

**Explanation**: The REPOSITORY= parameter specified an invalid value. The value must be a numeric value and must not exceed seven characters.

The value is the repository name without the initial O. For example, use 1234567 for a repository name of O1234567.

**User response**: Specify a valid REPOSITORY parameter name and resubmit the request.

## HKT2172E  REPOSITORY is unavailable

**Explanation**: The attempt to connect to the specified REPOSITORY was unsuccessful.

**User response**: Verify that the REPOSITORY value specified was correct and resubmit the request.

## HKT2173E  REPLACE option = NO. RELEASE information exists.

**Explanation**: Information was not replaced because REPLACE=YES was not specified.

**User response**: This is an informational message.

## HKT2174E  Invalid external table specified; TABLE=xxxxxx

**Explanation**: The module that is specified in the TABLE= parameter does not conform to the required format.

**User response**: Notify the creator of the module to correct this problem.

## HKT2175E  External table specified not found in STEPLIB; TABLE=xxxxxx

**Explanation**: The TABLE= parameter value could not be found. External table modules must reside in the standard load concatenation sequence.

**User response**: Place the requested module where it can be located.

## HKT2176E  HKTAPRS0 not found in STEPLIB.

**Explanation**: Verify that the correct STEPLIB is included.

**User response**: Add this module to the execution library.

## HKT2177E  Connect failed for requested REPOSITORY

**Explanation**: A connection to a requested repository failed.

Possible reasons for the failed connection include:
- The IMS Tools Knowledge Base server is not running or incorrectly specified.
- The required IMS Tools Knowledge Base repository name is incorrectly specified.
- The ADDPROD command used the REPLACE=YES parameter, which requires the use of the default definition table and the repository name referenced in the product registry.

**User response**: Troubleshoot the connection failure from the suggestions above, and resubmit the request.

## HKT2178I  Attempting to add xxxxxx

**Explanation**: This is an informational message intended to be used in conjunction with other messages in the event of an error.

**User response**: Informational only.

## HKT2179E  Run terminated due to bad enqueue return; R15=xxxxxx

**Explanation**: An enqueue request was issued and failed.

**User response**: Contact the IBM Software Support.

## HKT2180E  Run terminated due to load failure for HKTRIAAX

**Explanation**: HKTAPRA0 failed to find the required module. The run is terminated.

**User response**: Correct the problem and resubmit the request.

## HKT2181E  Run terminated due to load failure for HKTXRRF

**Explanation**: The product administration utility (HKTAPRA0) failed to find the required module. The run terminates.

**User response**: Correct the problem and resubmit the request.
HKT2182E  Run terminated due to load failure for HKTXPRR
Explanation: The product administration utility (HKTAPRA0) failed to find the required module. The run terminates.
User response: Correct the problem and resubmit the request.

HKT2183E  Attempted to add a report. Failed to find PRODUCTID=
Explanation: The ADDRPT command could not find the PRODUCTID that was specified during the add report request.
User response: Verify that a valid PRODUCTID was used. Register the product or specify a product that is registered with IMS Tools KB.

HKT2184I  Reports were not added to previous definitions because REPLACE=NO
Explanation: The ADDPRD request tried to add one or more reports that already existed. This occurs when the ADDPRD is performed for a product that is already defined. Processing resumes with the next report for the product.
User response: None.

HKT2201I  HKTJEXPT ended with RC=
Explanation: This message shows the highest return code that was encountered during the running of the job. Information message only.
User response: None.

HKT2202I  The LOG DD failed to open; LOG=NO will be assumed.
Explanation: A HKTLOG DD statement might have been omitted from the HKTJEXPT job stream.
User response: Ensure that a HKTLOG DD statement is in the HKTJEXPT job stream.

HKT2203E  No EXEC parameters found. ITKBSRVR parameter is required.
Explanation: The execution parameter has been omitted from the HKTJEXPT job stream.
User response: Add the execution parameter that specifies the ITKBSRVR parameter.

HKT2204I  EXEC parameter specified
Explanation: This message shows the execution parameter that was specified.
User response: This message is displayed before an error message. Refer to the messages that follow.

HKT2205E  VERSION parameter is greater than zero.
Explanation: The version parameter specified is greater than zero.
User response: The current version of a report is version zero.

HKT2206E  Unsuccessful parse of EXEC PARMS. Internal error.
Explanation: An internal error occurred in the parser.
User response: Contact IBM Software Support.

HKT2207E  Errors found in EXEC PARMS.
Explanation: Errors were found in the EXEC PARMS.
User response: This message is followed by message HKT2204I, which shows the EXEC parameters that were specified. A message that indicates the error will follow.

HKT2208E  The PRINT DD failed to open.
Explanation: A PRINT DD statement might have been omitted from the HKTJEXPT job stream.
User response: Ensure that a PRINT DD statement is in the HKTJEXPT job stream.

HKT2209E  Server name is required.
Explanation: An IMS Tools KB server name was not specified.
User response: Ensure that the name of an active IMS Tools KB server is specified.

HKT2210E  Unsuccessful parse of SYSIN data. Internal error.
Explanation: An internal error occurred in the parser.
User response: Contact IBM Software Support.

HKT2211E  Storage overflow for SYSIN data.
Explanation: An internal error occurred in the parser.
User response: Contact IBM Software Support.
HKT2212E Unable to connect to ITKB repository server.

Explanation: The specified IMS Tools KB server is not active.

User response: Ensure that the name of an active IMS Tools KB server is specified. Check the job log for any additional messages.

HKT2213E Required parameter EXPORT not found, XXX was found.

Explanation: The required control statement verb EXPORT was not found. The character string that was found is displayed in the message.

User response: Ensure that EXPORT is specified on the first control statement.

HKT2214W No Reports selected.

Explanation: There are no reports that match the specified parameters.

User response: Change the report selection parameters to be less specific.

HKT2215E Both RECON1 and RECONID are specified. Only one can be specified.

Explanation: Both RECON1 and RECONID were specified. Only one can be specified.

User response: Ensure that only RECON1 or RECONID is specified.

HKT2216E INITIAL failed (LP) (nn,nn).

Explanation: An internal error occurred in the IMS Tools KB.

User response: Contact IBM Software Support.

HKT2217E Group type/Group name must be specified together.

Explanation: A GRPTYPE or GRPNAME parameter was found without the other. Both parameters must be present.

User response: Ensure that both the GRPTYPE and GRPNAME parameters are specified.

HKT2218E Invalid group type given. Types are CA or DBDS.

Explanation: The value that was specified for the GRPTYPE parameter was not one of the allowed values.

User response: Change the GRPTYPE value to one of the allowed values.

HKT2219E Both PART and AREA are specified. Only one can be specified.

Explanation: Both the PART and AREA parameter were specified. Only one can be specified.

User response: Ensure that only the PART or AREA parameter is specified.

HKT2220W One or more of the Output Repositories are not available.

Explanation: One or more of the output repositories are not available. This might prevent some reports from being selected if they are in an offline repository.

User response: Ensure that all repositories are online when exporting reports.

HKT2221E No output repositories.

Explanation: HKTJEXPT determined that there are no output repositories available at this time.

User response: Notify the IMS Tools KB administrator.

HKT2223E Input registry not available, verify that server nnn is active.

Explanation: HKTJEXPT determined that the input registry is not available at this time.

User response: Ensure that the specified server is available and if so, notify the IMS Tools KB administrator.

HKT2226E Report open failed, verify that all parameters are valid. (nn,nn).

Explanation: The report selected failed to open.

User response: Contact IBM Software Support.

HKT2228E Product xx not defined.

Explanation: The value that was specified for the PRODUCTID parameter was not defined.

User response: Ensure that the product has been registered with the IMS Tools KB server.

HKT2229E Report xx not defined.

Explanation: The value that was specified for the REPORTID parameter was not defined.

User response: Ensure that the report has been registered with the IMS Tools KB server.
<table>
<thead>
<tr>
<th>Code</th>
<th>Message</th>
<th>Explanation</th>
<th>User response</th>
</tr>
</thead>
<tbody>
<tr>
<td>HKT2230E</td>
<td>RECONID reconid not defined.</td>
<td>The value that was specified for the RECONID parameter was not defined.</td>
<td>Ensure that this RECONID value has been defined with the IMS Tools KB server.</td>
</tr>
<tr>
<td>HKT2231E</td>
<td>RECON1 dsn not defined.</td>
<td>The value that was specified for the RECON1 parameter was not defined.</td>
<td>Ensure that this RECON1 value has been defined with the IMS Tools KB server.</td>
</tr>
<tr>
<td>HKT2233W</td>
<td>nnnn reports were selected which exceeds MAXREPORTS.</td>
<td>The number of reports selected exceeds the value specified for the MAXREPORTS parameter.</td>
<td>None required. Only the number of reports specified by the MAXREPORTS parameter will actually be printed.</td>
</tr>
<tr>
<td>HKT2234E</td>
<td>Repository read error (nn,nn)</td>
<td>An internal error occurred in the IMS Tools KB.</td>
<td>Contact IBM Software Support.</td>
</tr>
<tr>
<td>HKT2235W</td>
<td>Some report records were truncated while being written to the PRINT dd.</td>
<td>Some of the records in the report were longer than allowed for SYSOUT.</td>
<td>Ensure that the record length of the report file is 133 bytes or shorter.</td>
</tr>
<tr>
<td>HKT2236E</td>
<td>The first version number is greater than the second.</td>
<td>The first version number is greater than the second.</td>
<td>Ensure that when a version number range is specified that the first version is less than the second.</td>
</tr>
<tr>
<td>HKT2237E</td>
<td>There are no RECON entries in the registry.</td>
<td>HKTJEXPT determined that no RECON entries are present in the IMS Tools KB repository.</td>
<td>Notify the IMS Tools KB administrator.</td>
</tr>
<tr>
<td>HKT2238W</td>
<td>STARTAFTER specified without MAXREPORTS, the STARTAFTER will be ignored.</td>
<td>A STARTAFTER parameter was found without a MAXREPORTS parameter. STARTAFTER requires MAXREPORTS.</td>
<td>Ensure that when STARTAFTER is specified that the MAXREPORTS parameter is also specified.</td>
</tr>
<tr>
<td>HKT2239E</td>
<td>No SYSIN control statements found.</td>
<td>No SYSIN control statements were found.</td>
<td>Ensure that the SYSIN DD statement is correctly specified.</td>
</tr>
<tr>
<td>HKT2240W</td>
<td>Report printing bypassed because of mixed attributes, RECFM=FBA or FBM.</td>
<td>HKTJEXPT detected that the attributes of the reports selected has changed from fixed to variable or variable to fixed as they are being printed. The report will not be printed.</td>
<td>Change the selection criteria to eliminate the mixed attribute types.</td>
</tr>
<tr>
<td>HKT2241W</td>
<td>Invalid value for MAXREPORTS, 1 assumed.</td>
<td>The value specified was not in the allowable range. The range of valid values for this parameter is 1 to 2147483647.</td>
<td>Ensure that the correct parameter value is specified.</td>
</tr>
<tr>
<td>HKT2242W</td>
<td>Invalid value for STARTAFTER, 0 assumed.</td>
<td>The value specified was not in the allowable range. The range of valid values for this parameter is 0 to 2147483647.</td>
<td>Ensure that the correct parameter value is specified.</td>
</tr>
<tr>
<td>HKT2243E</td>
<td>VERSION parameter exceeds range.</td>
<td>The value specified was not in the allowable range. The range of valid values for this parameter is 0 to 32767.</td>
<td>Ensure that the correct parameter value is specified.</td>
</tr>
</tbody>
</table>
HKT2244C  Report selection table exceeds 10000 entries.

Explanation:  The number of reports exceeded the size of the internal table.

User response:  Use the MAXREPORTS and STARTAFTER parameters to break the selected reports into groups of less than 10,000 entries.

HKT2261E  Unknown keyword - xxxxx

Explanation:  An unknown keyword was encountered in the input. The message contains the unknown keyword.

User response:  Change the unknown keyword to one of the keywords that are defined for HKTJEXPT.

HKT2262E  Unknown positional parameter - xxxxx

Explanation:  An unknown positional parameter was encountered in the input. The message contains the unknown parameter.

User response:  Change the unknown parameter to one of the parameters that are defined for HKTJEXPT.

HKT2263E  Keyword missing sub-parameter - xxxxx

Explanation:  A keyword was encountered without its required sub-parameters. The message contains the keyword parameter.

User response:  Ensure that the keyword is specified with all required parameters.

HKT2264E  Input ended before all keywords processed

Explanation:  HKTJEXPT found end-of-file before all of the specified keywords were processed.

User response:  Ensure that all keywords are correct.

HKT2265E  Keyword found instead of value - xxxxx

Explanation:  A keyword was encountered when a value was expected. The keyword is contained in the message.

User response:  Ensure that the correct parameter syntax is specified.

HKT2266E  Number out of range - xxxxx

Explanation:  A number was encountered that was out of the range allowed. The message contains the incorrect number.

User response:  Ensure that the number that was specified is within the allowable range.

HKT2267E  Invalid number - xxxxx

Explanation:  A number was encountered that contained non-decimal digits. The message contains the incorrect number.

User response:  Ensure that the number is correctly specified.

HKT2268E  Unknown keyword value – xxxxx

Explanation:  The value that was specified for the keyword is not one of the allowed values. The message contains the incorrect value.

User response:  Ensure that the value that was specified is one of the allowed values.

HKT2269E  Keyword parameter specified more than once - xxxxx

Explanation:  A keyword was encountered more than once in the input. The message contains the incorrect keyword.

User response:  Ensure that the keyword is specified the correct number of times.

HKT2270E  Required parameter was not found

Explanation:  One of the required parameters was not found.

User response:  Ensure that all required parameters are specified. This message will be accompanied by HKT2272.

HKT2271E  Keyword value too long - xxxxx

Explanation:  The value that was specified for the keyword exceeds the maximum allowable length. The message contains the incorrect value.

User response:  Ensure that the value that was specified for the keyword is correct.

HKT2272I  Required parameters are PRODUCTID and REPORTID.

Explanation:  This message lists the required parameters for HKTJEXPT.

User response:  Informational message.

HKT2300E  No RECON entries in the registry.

Explanation:  No RECON environments are defined to IMS Tools KB. The RECON definitions must be initialized even if you are not using a RECON.

User response:  If you do not use DBRC, you can run the JOB HKTDFREP.

Use the NEW command from the Recon Information
panel (Administration/List Recon Information menu option) of the ISPF user interface to add the RECON environment to IMS Tools KB.

<table>
<thead>
<tr>
<th>HKT2301E</th>
<th>Unable to connect – incorrect server name or insufficient access authority to repository</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong> The server that you specified is either not available, or the name is incorrect, or you have insufficient access authority to the repository.</td>
<td></td>
</tr>
<tr>
<td><strong>User response:</strong> Check the server name that was specified. If it is correct, make sure the server initialized successfully.</td>
<td></td>
</tr>
<tr>
<td>To enable communication with the IMS Tools KB server, the FPQ subsystem is required on the system that you are running on. Ensure it is initialized correctly.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HKT2302E</th>
<th>Insufficient access authority to repository</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong> Your access control system prevented access to one or more repositories.</td>
<td></td>
</tr>
<tr>
<td><strong>User response:</strong> Determine which repository is affected and request the necessary authority.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HKT2303E</th>
<th>Report defined as RECORD=N</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong> The report is currently defined to not be recorded (this is similar to DD DUMMY).</td>
<td></td>
</tr>
<tr>
<td><strong>User response:</strong> Ignore this message if you do not want the report recorded. Otherwise, change the record setting for the report by using the Administration/List Installed Products/Subscriptions action of the ISPF user interface.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HKT2304E</th>
<th>RECON not found</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong> The IMS Tool or IMPORT utility tried to add a report to IMS Tools KB by using a RECON1 data set name that is not defined.</td>
<td></td>
</tr>
<tr>
<td><strong>User response:</strong> Use the NEW command from the Recon Information panel (Administration/List Recon Information menu option) of the ISPF user interface to add the RECON environment to IMS Tools KB.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HKT2305E</th>
<th>Product not defined</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong> The product is not registered to IMS Tools KB.</td>
<td></td>
</tr>
<tr>
<td><strong>User response:</strong> Use the product administration utility (HKTAPRA0) to register the product.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HKT2306E</th>
<th>Report not defined</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong> The report is not registered to IMS Tools KB.</td>
<td></td>
</tr>
<tr>
<td><strong>User response:</strong> Use the product administration utility (HKTAPRA0) to register the product.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HKT2307E</th>
<th>Product not defined to record reports</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong> The product is registered to IMS Tools KB but is not currently defined to record any reports. This error might have occurred due to using the Administration/List Installed Products/Remove Subscriptions action of the ISPF user interface.</td>
<td></td>
</tr>
<tr>
<td><strong>User response:</strong> Re-register the product and its reports.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HKT2308E</th>
<th>Report index busy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong> The product attempted to write a report but another report with the same index value is being written. This probably results from running two or more product jobs performing the same function for the same database.</td>
<td></td>
</tr>
<tr>
<td><strong>User response:</strong> This problem should resolve when the competing job finishes. If you cannot identify a competing job, take a console dump of the server address space and contact IBM Software Support.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HKT2309E</th>
<th>Connection to I/O repository failed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong> The Output repository is not available and is likely stopped.</td>
<td></td>
</tr>
<tr>
<td>The repository might have been stopped intentionally or stopped because of an error. A likely error is an out-of-space condition.</td>
<td></td>
</tr>
<tr>
<td><strong>User response:</strong> The initial Output repository designation is O0000000. If other Output repositories were implemented, use the Admin drop-down menu from the IMS Tools Knowledge Base user interface, and select List Repositories to view other possible Output repositories involved in this error.</td>
<td></td>
</tr>
<tr>
<td>Analyze the error reported to the server JOBLOG to determine possible solutions to the problem.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HKT2401I</th>
<th>The program HKTRINIT ended with highest RC=xxxxxx</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong> The return code is a decimal number.</td>
<td></td>
</tr>
<tr>
<td><strong>User response:</strong> None. This message is informational only. If the return code is nonzero, refer to other messages that were issued from the run of the program.</td>
<td></td>
</tr>
</tbody>
</table>
The HKTLOG DD failed to open, so logging does not occur for the job.

Explanation: LOG=YES was specified in the job’s execution parameters, but an HKTLOG DD statement was not present in the job stream. Processing continues without logging.

User response: If logging the job is required, specify LOG=YES in the job’s execution parameters and ensure that an HKTLOG DD statement is present in the job stream.

EXEC parameter specified - xxxxxx

Explanation: This message is issued when an error is detected in the job’s execution parameters. It displays the execution parameters that were specified.

User response: This message is displayed with other messages. Refer to these messages for additional diagnostic information.

Unsuccessful parse of EXEC PARMS.

Explanation: An internal error occurred in the parser. The displayed parser return code and reason code are hexadecimal values.

User response: Contact IBM Software Support.

Errors found in EXEC parameters.

User response: This message is displayed with other messages. Refer to these messages for more diagnostic information.

Unable to add xxxxxxx due to system contention. Please try again later.

Explanation: System contention prevented the operation.

User response: Try the action later.

Server name is required.

Explanation: An IMS Tools KB server name was not specified.

User response: Ensure that the name of an active IMS Tools KB server is specified. You can place the name in the job’s execution parameter or on the SYSIN control statements. Specify the server name by using 'ITKBSRVR=xxxxxxx', where xxxxxxxx is the XCF group name that is associated with an active IMS Tools KB server.

HKTRIAM service status: RC=xxxx Rsn=xxxx Func=xxxxxxxx

Explanation: This message displays the execution status of an internal IMS Tools KB function.

This message might be displayed by itself or it might be displayed with other messages. In a few situations, this message might appear when the return and reason codes are both zero.

Some common error conditions:
- RC=0010 with Rsn=0035 indicates that the process was unable to connect to a repository.
• RC=001C with Rsn=00C9 indicates that the IMS Tools KB server was not found.
• RC=001C with Rsn=00CA indicates that the IMS Tools KB subsystem is not defined.

Possible values for the function are ADD_CONTAINER, GET_CONTAINER_LIST, INITIAL, GET_RECORD_LIST, POINT_CONTAINER, RELEASE_CONTAINER, REPLACE_RECORD_LIST, TERMINATE, and UPDATE_RECORD_LIST.

The return code and reason code are hexadecimal values.

User response: Most failures in this internal service require analysis by IBM Software Support. If other messages are displayed, refer to their suggested user responses.

If the reported error is RC=0010 with Rsn=0035, ensure that the required repositories are connected to the IMS Tools KB server and that the repositories are not stopped.

If the reported error is RC=001C with Rsn=00C9, ensure that the requested IMS Tools KB server is active.

If the reported error is RC=001C with Rsn=00CA, the subsystem for the repository was not initialized. This condition might occur because the SETSSI command for Subsystem FPQ2 was not issued. It might also occur because the subsystem (server) that is up is not the same as the batch jobs that are being submitted.

User response: Check the spelling of the server name and ensure that the named server is active.

---

HKT2417E RECON xxxxxxxx could not be updated.
Another user may have modified it.

Explanation: The RECON name listed could not be updated because it has been changed by another user.

User response: Try the operation again later.

HKT2418W No RECONs found. Ensure the ITKB repository is initialized.

User response: Run the HKTJINIT job and specify the INITITKB control statement to initialize the repository.

HKT2419I RECON xxxxxxxx added.

Explanation: The RECON name listed has been added.

User response: None. This is an informational message only.

HKT2420W RECON xxxxxxxx already exists. No action taken.

Explanation: The RECON name listed is already in the repository.

User response: None. This is an informational message only.

HKT2421W The SYSIN DD statement is missing, so INITITKB is assumed.

Explanation: The SYSIN DD statement failed to open. HKTJRINT processes as though an INITITKB control statement was specified.

User response: None. This message is informational only.

HKT2422E Connect failed for repository xxxxxxxx due to xxxxxxxx.

Explanation: The IMS Tools KB server specified was not available. An explanation for the error is also listed. Possible values are:
• FPQ subsystem not found
• Server not found
• Server in shutdown
• Server shutdown or failed
• Server is busy
• BUFSIZE exceeds maximum
• Repository not found
• Repository unavailable
• Insufficient authority

User response: Check the spelling of the server name and ensure that the named server is active.

HKT2423E The input repository is not available.

Explanation: The HKT_INPUT repository could not be accessed. Either this repository is not connected to the IMS Tools KB server, or it is stopped.

User response: Verify that the HKT_INPUT repository is connected to the server and is not stopped. You can check the repository status in the Administration menu on the IMS Tools KB ISPF dialog’s primary options panel.

HKT2424E The Sensor Data Repository xxxxxx function failed. RC=xxxx Rsn=xxxx

Explanation: An error occurred while accessing the Sensor Data repository. The possible function values are INIT, CNTL, and TERM.

The return code and reason code are hexadecimal values.

The DAYS parameter is ignored for the control statement.

Explanation: The DAYS parameter is only supported on an INITITNSR control statement, but it was specified on the INITITKB or LISTRECN control statement. The DAYS parameter is ignored and execution continues.

User response: Remove the DAYS parameter from the control statement if the control statement is reused on subsequent runs.

The DAYS parameter out of range, so 365 days is assumed.

Explanation: The DAYS parameter has a value that is out of range. The valid range is 1 - 32767.

User response: Change the DAYS parameter to be within the specified range.

Connect failed for ITKB server and the Sensor Repository.

Explanation: The connection to the IMS Tools KB server and the Sensor Data repository failed.

User response: Ensure that the IMS Tools KB server name is spelled correctly.

Ensure that the Sensor Data repository has been properly defined.

Ensure that the Sensor Data repository has been started.

The Sensor Data retention period was previously set to nn days.

Explanation: The sensor data retention period was previously set and the INITITNSR function was invoked to reset this value. Processing the current INITITNSR request continues.

The sensor data retention setting that was in effect before the INITITNSR function was invoked is shown.

User response: None. This message is informational only.

The INITITKB function was previously run.

Explanation: The INITITKB function was previously run, so the current request to run INITITKB is ignored.

User response: None. This message is informational only.

PARAMETER "rr" IS INCORRECT.

Explanation: The incorrect release rr was specified in the source or target. Where:

nnnnn Indicates whether this is source or target.

rr The release level. Values can be either R1 or R2.

System action: Processing is stopped.

User response: Correct the release value for the specified nnnnnn value of source or target.

Same SOURCE and TARGET release specified.

Explanation: Both the source and target release are set to the same release.

System action: Processing is stopped.

User response: Correct the release value for the source and target in error.

No SYSIN control statements found.

Explanation: There were no control statements found in the file specified by the SYSIN DD.

User response: Ensure that the file specified by the SYSIN DD statement contains valid HKTJRINT control statements.

VSAM error nnnnnn RC - rc RS - rs

Explanation: A VSAM error has occurred while processing the source or target. Where:

nnnnn One of the following:

- TESTCB1 - The VSAM TESTCB failed for a VSAM OPEN of the source RID data set.
- TESTCB2 - The VSAM TESTCB failed for a VSAM OPEN of the source RMD data set.
- TESTCB3 - The VSAM TESTCB failed for a VSAM OPEN of the target RMD data set.
- TESTCB4 - The VSAM TESTCB failed for a VSAM OPEN of the target RID data set.
- MODCB1 - The VSAM MODCB failed for a VSAM PUT of a target RID.
- MODCB2 - The VSAM MODCB failed for a VSAM PUT of a target RMD.
- PUT - The VSAM PUT failed for a target RID.
- PUT2 - The VSAM PUT failed for a target RMD.

rc The VSAM return code.

rs The VSAM reason code.

System action: Processing is stopped.
**HKT2441E**    VSAM open error DDNAME - dddddddd
   RC - rc RS - rs

**Explanation:** A VSAM OPEN operation failed. Where:

| dddddddd | The DD name. |
| rc       | The VSAM return code. |
| rs       | The VSAM reason code. |

**System action:** Processing is stopped.

**User response:** Check the VSAM return and reason codes to determine error. If problem persists, contact IBM Software Support.

**HKT2442E**    VSAM close error DDNAME - RC - rc
   RS - rs

**Explanation:** A VSAM CLOSE operation failed. Where:

| dddddddd | The DD name. |
| rc       | The VSAM return code. |
| rs       | The VSAM reason code. |

**System action:** Processing is stopped.

**User response:** Check the VSAM return and reason codes to determine error. If problem persists, contact IBM Software Support.

**HKT2443E**    Generate nnnnnn failed DDNAME - dddddddd
   RC - rc RS - rs

**Explanation:** Where:

<table>
<thead>
<tr>
<th>nnnnnn</th>
<th>One of the following:</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACB1</td>
<td>The VSAM GENCB failed for a VSAM ACB for the target RID data set.</td>
</tr>
<tr>
<td>ACB2</td>
<td>The VSAM GENCB failed for a VSAM ACB for the source RID data set.</td>
</tr>
<tr>
<td>ACB3</td>
<td>The VSAM GENCB failed for a VSAM ACB for the source RMD data set.</td>
</tr>
<tr>
<td>ACB3</td>
<td>The VSAM GENCB failed for a VSAM ACB for the target RMD data set.</td>
</tr>
<tr>
<td>RPL1</td>
<td>The VSAM GENCB failed for a VSAM RPL for the target RID data set.</td>
</tr>
<tr>
<td>RPL2</td>
<td>The VSAM GENCB failed for a VSAM RPL for the Source RID data set.</td>
</tr>
<tr>
<td>RPL3</td>
<td>The VSAM GENCB failed for a VSAM RPL for the Source RMD data set.</td>
</tr>
<tr>
<td>RPL4</td>
<td>The VSAM GENCB failed for a VSAM RPL for the Target RMD data set.</td>
</tr>
</tbody>
</table>

**System action:** Processing is stopped.

**User response:** Check the VSAM return and reason codes to determine error. If problem persists, contact IBM Software Support.

**HKT2444E**    RMD key table overflow.

**Explanation:** An internal table buffer was not large enough and the data overflowed the allocated storage.

**System action:** Processing is stopped.

**User response:** Internal error, contact IBM Software Support.

**HKT2445E**    Unknown keyword - xxxxx

**Explanation:** An unknown keyword was encountered in the input. The message contains the unknown keyword.

**User response:** Change the unknown keyword to one of the supported keywords or remove extraneous parameter text.

**HKT2446E**    Unknown positional parameter - xxxxx

**Explanation:** An unknown positional parameter was encountered in the input. The message contains the unknown parameter.

**User response:** Change the unknown parameter to one of the supported parameters or remove extraneous parameter text.

**HKT2447E**    Keyword missing sub-parameter - xxxxx

**Explanation:** A keyword was encountered without its required sub-parameters. The message contains the keyword parameter.

**User response:** Ensure that the keyword is specified with all required parameters.

**HKT2448E**    Input ended before all keywords processed

**Explanation:** HKTJRINT found end-of-file before all of the specified keywords were processed.

**User response:** Ensure that all keywords are correct.
HKT2465E  Keyword found instead of value - xxxx
Explanation: A keyword was encountered when a value was expected. The keyword is contained in the message.
User response: Ensure that the correct parameter syntax is specified.

HKT2466E  Number out of range - xxxx
Explanation: A number was encountered that was out of the range allowed. The message contains the incorrect number.
User response: Ensure that the number that was specified is within the allowable range.

HKT2467E  Invalid number - xxxx
Explanation: A number was encountered that contained non-decimal digits. The message contains the incorrect number.
User response: Ensure that the number is correctly specified.

HKT2468E  Unknown keyword value - xxxx
Explanation: The value that was specified for the keyword is not one of the allowed values. The message contains the incorrect value.
User response: Ensure that the value that was specified is one of the allowed values.

HKT2469E  Keyword parameter specified more than once - xxxx
Explanation: A keyword was encountered more that once in the input. The message contains the incorrect keyword.
User response: Ensure that the keyword is specified the correct number of times.

HKT2470E  Required parameter was not found.
Explanation: One of the required parameters was not found.
User response: Ensure that all required parameters are specified. This message will be accompanied by HKT2472I.

HKT2471E  Keyword value too long - xxxx
Explanation: The value that was specified for the keyword exceeds the maximum allowable length. The message contains the incorrect value.
User response: Ensure that the value that was specified for the keyword is correct.

HKT2472I  Required parameters are INITITKB, INITSNSR, or LISTRECN.
Explanation: This message lists the required parameters for HKTJRINT.
User response: None. This is an informational message only.

HKT2473I  The xxxx function is processing for IMS Tools KB server xxxx.
Explanation: Indicates the start of the selected function. The function name is INITITKB, INITSNSR, or LISTRECN.
User response: None. This message is informational only.

HKT2474I  The xxxx function ended with RC=xxxx.
Explanation: This message shows the function’s return code. The function name is INITITKB, INITSNSR, or LISTRECN. The return code is a decimal number.
User response: This message is informational only. If the return code is nonzero, refer to other messages that were issued during the function’s run.

HKT2475I  The Sensor Data retention period was reset to nnn days.
Explanation: The INITSNSR function successfully updated the sensor data retention value. This message is shown even if the previous setting and the updated setting are the same value. The updated sensor data retention setting is shown.
User response: None. This message is informational only.

HKT2501E  LOCID=mmm RC=10 RSN=01 R0=?????????: LOG SPECIFICATION ERROR
Explanation: The HKTEXT DELETE function failed to delete the requested member.
System action: Program returns to caller with the error and reason codes.
User response: Ensure that the correct member to delete was specified.
Also, ensure that the member had not previously been deleted.
<table>
<thead>
<tr>
<th>HKT2502I</th>
<th>LOCID=mmm RC=04 RSN=02 R0=fffffff : NO PRODUCT EXTENSIONS FOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong></td>
<td>The product definition did not contain product extension data. This might or might not be an error.</td>
</tr>
<tr>
<td>If an older product definition version (prior to Tools Base V1.6) did not contain product extension data, then return and reason codes are produced.</td>
<td></td>
</tr>
<tr>
<td><strong>System action:</strong></td>
<td>Program returns to caller with the error and reason codes.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>The message can be a correct result.</td>
</tr>
<tr>
<td>If you know that an extension should be expected, then the product library definitions should be reviewed with an administrator.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HKT2503E</th>
<th>LOCID=mmm RC=16 RSN=03 R0=fffffff : NO SERVER SUPPLIED</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong></td>
<td>The product definition initialization program does not specify the server name for the product definition repository (HKT_REGIST).</td>
</tr>
<tr>
<td><strong>System action:</strong></td>
<td>Program returns to caller with the error and reason codes.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Ensure that the ITKBSRVR= parameter value is correctly specified in the PARM field of the HKTAPRA0 program.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HKT2504E</th>
<th>LOCID=mmm RC=12 RSN=04 R0=fffffff : UNABLE TO INITIALIZE OR SYNCH WITH EXTENDED PRODUCT REPOSITORY (HKT_REGIST)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong></td>
<td>During initialization of defining a product definition, the process could not make a connection or establish a synch point with the product registry (HKT_REGIST).</td>
</tr>
<tr>
<td><strong>System action:</strong></td>
<td>Program returns to caller with the error and reason codes.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Ensure that the correct group (server) was specified or that the server is up and running.</td>
</tr>
<tr>
<td>If the problem persists, run again with a log file and report the issue to the system administrator and/or IBM Software Support.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HKT2505E</th>
<th>LOCID=mmm RC=8 RSN=05 R0=fffffff : NO EXTENDED DATA TO PROCESS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong></td>
<td>No extended product data was passed to the extended product definition initializer.</td>
</tr>
<tr>
<td><strong>System action:</strong></td>
<td>Program returns to caller with the error and reason codes.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Although there is an extended reference, the extended data passed was null.</td>
</tr>
<tr>
<td>Check the extended product definition ensure there is a correct definition.</td>
<td></td>
</tr>
<tr>
<td>This error might have to be reported to a system administrator.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HKT2506E</th>
<th>LOCID=mmm RC=16 RSN=06 R0=fffffff : INVALID EXTENDED PRODUCT PROCESSING LENGTH PARAMETER WAS PASSED</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong></td>
<td>A bad length to an extended product specification was passed to the extended product processor.</td>
</tr>
<tr>
<td><strong>System action:</strong></td>
<td>Program returns to caller with the error and reason codes.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Check to see that the product definition library and/or members are correctly specified.</td>
</tr>
<tr>
<td>Additionally, ensure that there has not been any corruption to the member.</td>
<td></td>
</tr>
<tr>
<td>If necessary, rerun with logging and report the error to the system administrator.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HKT2507E</th>
<th>LOCID=mmm RC=8 RSN=07 R0=fffffff : AN EXTENDED PRODUCT ENTITY HAS TOO LONG OF A STRING VALUE CAUSING TRUNCATION STRING TRUNCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong></td>
<td>A value for an extended product variable was too long.</td>
</tr>
<tr>
<td><strong>System action:</strong></td>
<td>Program returns to caller with the error and reason codes.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Check the settings of the extended product variables to ensure that they were coded correctly.</td>
</tr>
<tr>
<td>If necessary, rerun the job with a log file.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HKT2508E</th>
<th>LOCID=mmm RC=16 RSN=08 R0=fffffff : AN INVALID PROCESSING STATE DETECTED DUE TO OUT OF SEQUENCE COMMANDS PASSED</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong></td>
<td>Extended product processing data was passed out of sequence to the extended product initializer.</td>
</tr>
<tr>
<td><strong>System action:</strong></td>
<td>Program returns to caller with the error and reason codes.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Rerun the job with a log file and report the problem to a system administrator or IBM Software Support.</td>
</tr>
</tbody>
</table>
**HKT2509E**  
**Explanation:** The required library ddname (PENU_DD, MENU_DD, SLIB_DD) was missing from the extended product definition.

**System action:** Program returns to caller with the error and reason codes.

**User response:** Ensure that all the required library ddname references are defined in the extended product definition module.

**HKT2510E**  
**Explanation:** The maximum allowed to hold in the repository.

**System action:** Program returns to caller with the error and reason codes.

**User response:** Check to ensure that all the referenced library definitions have the corresponding JCL ddname definition.

**HKT2511E**  
**Explanation:** The number of libraries defined exceeds the maximum allowed to hold in the repository.

**System action:** Program returns to caller with the error and reason codes.

**User response:** Ensure that the product definition modules are correctly constructed.

**HKT2512E**  
**Explanation:** The required two (2) character project (or product) identifier is missing.

**System action:** Program returns to caller with the error and reason codes.

**HKT2513E**  
**Explanation:** The attempted add of the library (LLR) data to the registration repository failed.

**System action:** Program returns to caller with the error and reason codes.

**User response:** This message indicates a problem with the registration repository. Rerun the job with a logfile.

**HKT2514E**  
**Explanation:** The attempted commit of the extended updates to the registration repository failed.

**System action:** Program returns to caller with the error and reason codes.

**User response:** This message indicates a problem with the registration repository. Rerun the job with a logfile.

**HKT2515E**  
**Explanation:** One of the extended product flags, such as FFDB, had a value that was other than Yes or No.

**System action:** Program returns to caller with the error and reason codes.

**User response:** Check the extended product registration module to ensure that all the flag fields specified are defined correctly.

**HKT2516E**  
**Explanation:** The extended product required PROGRAM name is missing.

**System action:** Program returns to caller with the error and reason codes.

**User response:** Check the extended product registration module to ensure that the PROGRAM name has been defined.
HKT2519E - LOCID=mmm RC=16 RSN=19
R0=???????? : ACCESS TEMPLATE FILE FAILED

Explanation: Accessing the template file failed.
System action: Program returns to caller with the error and reason codes.
User response: Check to see that the JCL template file is specified in the JCL and has the correct attributes.

HKT2520E - LOCID=mmm RC=8 RSN=20 R0=???????? : TEMPLATE FILE IS NULL

Explanation: The JCL template file was NULL. It did not contain any data.
System action: Program returns to caller with the error and reason codes.
User response: Check to see that the specified JCL template file data set is correct, and that it contains the JCL template.

HKT2521E - LOCID=mmm RC=12 RSN=21
R0=???????? : EXTENDED PRODUCT DEFINITIONS CONTAIN DUPLICATE KEY DEFINITIONS

Explanation: The extended product definition contained duplicate definitions.
System action: Program returns to caller with the error and reason codes.
User response: Check the extended product definition for any duplicate definitions, and remove the duplicate definition.

HKT2527E - LOCID=mmm RC=12 RSN=27
R0=???????? : ACCESS TEMPLATE ERROR

Explanation: The attempt by the extended product definition initializer to access the template file failed.
System action: Program returns to caller with the error and reason codes.
User response: Check to see the template file is correctly specified.

There might be a problem with the TEMPLATE ddname that specifies the PDS data set name.
Or there might be a problem with the PDS member name specified by the extended product definition keyword (TEMPLATE).
If the problem persists, run the initializer program with a log file and, if necessary, contact a system administrator and/or IBM Software Support.

HKT2528E - LOCID=mmm RC=16 RSN=27
R0=???????? : INVALID INTERNAL FUNCTION

Explanation: The internal driver function code for the extended product definition initializer was invalid.
System action: Program returns to caller with the error and reason codes.
User response: Contact a system administrator and/or IBM Software Support.

HKT2529E - LOCID=mmm RC=12 RSN=29
R0=???????? : INVALID EXTENDED FUNCTION

Explanation: The extended product function passed to the initializer was invalid.
System action: Program returns to caller with the error and reason codes.
User response: Currently the only extended function supported is LISTX.

Check the input commands to ensure that no other extended function is being called.

Note: This message does not apply to the standard functions such as ADDRPT, ADDPROD, and LIST.

HKT2530E - LOCID=mmm RC=8 RSN=30 R0=???????? : EXTENDED FUNCTION NOT FOUND

Explanation: This error is similar to HKT2529E.
This error is issued at a low level where the extended function cannot be found in the internal table.
System action: Program returns to caller with the error and reason codes.
User response: Check to ensure that the extended function used is defined (as in HKT2529E).
Also, it is possible that the lower level lookup function is out of synch with the extended function processor.
In this case, the problem should be reported to a system administrator or IBM Software Support.

HKT2531E - LOCID=mmm RC=8 RSN=31 R0=???????? : EXTERNAL REPORT NOT OPEN

Explanation: The extended output report file, OUTRPTX, could not be opened.
System action: Program returns to caller with the error and reason codes.
User response: Ensure that the OUTRPTX file is defined in the JCL with the correct attributes.
Explanation: The keyword, or keyword value, of an extended function was invalid.

System action: Program returns to caller with the error and reason codes.

User response: Check the input file to ensure that the keywords, or keyword values, for an extended function are correctly specified.

HKT2533E  LOCID=mmm  RC=12  RSN=33  
R0=rrrrrrrr  : DUPLICATE KEYWORD SPECIFIED

Explanation: A duplicate keyword or value was found for an extended product function.

System action: Program returns to caller with the error and reason codes.

User response: Remove any duplicate keyword or values from the input file.

HKT2534E  LOCID=mmm  RC=12  RSN=33  
R0=rrrrrrrr  : DUPLICATE KEYWORD SPECIFIED

Explanation: A required keyword or value for an extended product function was missing.

System action: Program returns to caller with the error and reason codes.

User response: Ensure that all specified extended product function in the input file have the required keyword or value specified.

HKT2535I  LOCID=mmm  RC=4  RSN=35  
R0=rrrrrrrr  : PRODUCTID HAS NO ENTRIES

Explanation: There was no extended product data found for a given PRODUCTID.

System action: Program returns to caller with the error and reason codes.

User response: This message is informational and indicates that the PRODUCTID does not have any extended data defined. A PRODUCTID is not required to contain extended data.

This message is also issued when an incorrect PRODUCTID was entered on the input command.

HKT2536E  LOCID=mmm  RC=12  RSN=36  
R0=rrrrrrrr  : ERROR ACCESSING PRODUCT LIST

Explanation: An attempt to access the extended PRODUCT list from the repository failed.

System action: Program returns to caller with the error and reason codes.

User response: Many internal issues, such as a lost connection, can cause this error. Try rerunning the job with a log file to obtain details.

If the problem persists, contact a system administrator.

HKT2537E  LOCID=mmm  RC=12  RSN=37  
R0=rrrrrrrr  : READ OF DATA FAILED

Explanation: An attempt to read extended PRODUCT data from the repository failed.

System action: Program returns to caller with the error and reason codes.

User response: Many internal issues, such as a lost connection, can cause this error. Try rerunning the job with a log file to obtain details.

If the problem persists, contact a system administrator.

HKT2538E  LOCID=mmm  RC=4  RSN=38  
R0=rrrrrrrr  : DATA AREA IS NULL IN SIZE

Explanation: The data read for an extended product was null in size.

System action: Program returns to caller with the error and reason codes.

User response: This might not be a problem. If you suspect it is a problem, check your extended product request and rerun the job with a log file.

If the problem persists, contact a system administrator.
Chapter 18. HKTD error messages (discovery utility)

This reference section provides detailed information about the error messages issued by the IMS Tools discovery utility.

Message format

IMS Tools discovery utility messages adhere to the following format:
HKTDnnnx

where:

HKTD Indicates that the message was issued by IMS Tools discovery utility
nnn Indicates the message identification number
x Indicates the severity of the message:
A Indicates that operator intervention is required before processing can continue.
E Indicates that an error occurred, which might or might not require operator intervention.
I Indicates that the message is informational only.
W Indicates that the message is a warning to alert you to a possible error condition.

Each message also includes the following information:

Explanation:
The Explanation section explains what the message text means, why it occurred, and what its variables represent.

System action:
The System action section explains what the system will do in response to the event that triggered this message.

User response:
The User response section describes whether a response is necessary, what the appropriate response is, and how the response will affect the system or program.

Module
The Module section indicates which module or modules are affected.

HKTD470E  HKTRERD I-call failed
Explanation: The Discovery Utility made an I-call to HKTRERD and no RECON ID record was found in IMS Tools KB.
System action: The job abends with U4075.
User response: Ensure that at least one RECON ID exists in IMS Tools KB. If the problem persists, contact IBM Software support and provide the job log.

HKTD471E  No RECONID found in ITKB
Explanation: The Discovery Utility made an I-call to HKTRERD and no RECON ID record was found in IMS Tools KB.
System action: The job abends with U4075.
User response: Contact IBM Software support and provide the job log.

HKTD472E  HKTRERD G-call failed
HKTD473E • HKTD483E

Explanation: The Discovery Utility made a G-call to HKTRERD and received a non-zero return code.

System action: The job abends with U4075.

User response: Contact IBM Software support and provide the job log.

HKTD473E RECONID not found in ITKB

Explanation: The Discovery Utility could not locate a RECON ID.

System action: The job abends with U4075.

User response: Contact IBM Software support and provide the job log.

HKTD474E HKTRERD C-call failed

Explanation: The Discovery Utility made a C-call to HKTRERD and received a non-zero return code.

System action: The job abends with U4075.

User response: Contact IBM Software support and provide the job log.

HKTD475E Dynamic allocation failed for ddname

Explanation: The Discovery Utility failed to dynamically allocate the ddname.

System action: The job abends with U4075.

User response: Contact IBM Software support and provide the job log.

HKTD476E mmmmmmm PARAMETER NOT FOUND

Explanation: The required mmmmmmm parameter is not found.

System action: The job abends with U4075.

User response: Add the required parameter to the JCL and rerun the job.

HKTD477E FAIL TO CONNECT TO HKT_INPUT REPOSITORY

Explanation: The Discovery Utility failed to connect to HKT_INPUT repository.

System action: The job abends with U4075.

User response: Verify that the IMS Tools KB server name that is specified on the ITKBSERV= parameter is valid and that the IMS Tools KB server is active. If the problem persists, contact IBM software support.

HKTD478E DSI INIT-CALL FAILED

Explanation: The Discovery Utility failed to initialize the Discovery Service Interface.

System action: The job abends with U4075.

User response: Verify that the RECON data sets and DBDLIB are accessible. If the problem persists, Contact IBM Software support and provide the job log.

HKTD479E DSI DBDDIR-CALL FAILED

Explanation: The Discovery Utility called the Discovery Service Interface to retrieve the DBDLIB directory, and received a non-zero return code.

System action: The job abends with U4075.

User response: Contact IBM Software support and provide the job log.

HKTD480E DSI NO BUFFER RETURN

Explanation: The Discovery Utility called the Discovery Service Interface to retrieve the DBDLIB directory entries, and no buffer was returned.

System action: The job abends with U4075.

User response: Contact IBM Software support and provide the job log.

HKTD481I NO DBD FOUND

Explanation: The Discovery Utility called the Discovery Service Interface to retrieve the DBDLIB directory entries, and the buffer did not contain any entries.

System action: Processing continues.

User response: Verify that no databases entries are defined in the DBDLIB.

HKTD482E DSI DBITKB-CALL FAILED

Explanation: The Discovery Utility called the Discovery Service Interface to create the database record ready to be stored in the IMS Tools KB repository, and received a non-zero return code.

System action: The job abends with U4075.

User response: Contact IBM Software support and provide the job log.

HKTD483E ITKB CREATE-MEMBER FAILED

Explanation: The Discovery Utility failed to create a member in the IMS Tools KB repository.

System action: The job abends with U4075.

User response: Contact IBM Software support and provide the job log.
HKTD484E ITKB LOCATE-MEMBER FAILED
Explanation: The Discovery Utility failed to locate a member in IMS Tools KB repository.
System action: The job abends with U4075.
User response: Contact IBM Software support and provide the job log.

HKTD485E ITKB DELETE-MEMBER FAILED
Explanation: The Discovery Utility failed to delete a member in IMS Tools KB repository.
System action: The job abends with U4075.
User response: Contact IBM Software support and provide the job log.

HKTD486E ITKB ADD-REC FAILED
Explanation: The Discovery Utility failed to add a record to a member in IMS Tools KB repository.
System action: The job abends with U4075.
User response: Contact IBM Software support and provide the job log.

HKTD487E ITKB WRITE-MEMBER FAILED
Explanation: The Discovery Utility failed to write a member in IMS Tools KB repository.
System action: The job abends with U4075.
User response: Contact IBM Software support and provide the job log.

HKTD488E DSI RELBUFF-CALL FAILED
Explanation: The Discovery Utility called Discover Service Interface to release a buffer and received a non-zero return code.
System action: The job abends with U4075.
User response: Contact IBM Software support and provide the job log.

HKTD489I NUMBER OF DB action WAS nnnnnnn
Explanation: The Discovery Utility has discovered or deleted databases, where:

 nnnnnnn Number of databases
action Discovered or deleted
System action: Processing continues.
User response: Verify that the number of databases discovered or deleted is correct.

HKTD490I NUMBER OF DBRC GROUPS action WAS nnnnnnn
Explanation: The Discovery Utility has discovered or deleted DBRC groups. Where:

 nnnnnnn Number of databases
action Discovered or deleted
System action: Processing continues.
User response: Verify that the number of DBRC groups discovered or deleted is correct.

HKTD491E DSI GPITKB-CALL FAILED
Explanation: The Discovery Utility called the Discovery Service Interface to create the DBRC group record to be stored IMS Tools KB repository, and received a non-zero return code.
System action: The job abends with U4075.
User response: Contact IBM Software support and provide the job log.

HKTD492I
Explanation: The Discovery Utility did not find any DBRC groups defined in the RECON data sets.
System action: Processing continues.
User response: Verify that DBRC groups are not defined.

HKTD494W VALIDATION FAILED - DBD nnnnnnn SKIPPED
Explanation: The Discovery Utility found an invalid DBD.
System action: The database for the invalid DBD is not stored in IMS Tools KB INPUT repository.
User response: Fix the invalid DBD by running the DBDGEN again.

HKTD499E DSI PSBDIR-CALL FAILED
Explanation: The Discovery Utility called the Discovery Service Interface to retrieve the PSBLIB directory, and received a non-zero return code.
System action: The job abends with U4075.
User response: Contact IBM Software support and provide the job log.
HKTD501I NO PSB FOUND

**Explanation:** The Discovery Utility called the Discovery Service Interface to retrieve the PSBLIB directory entries, and the buffer did not contain any entries.

**System action:** Processing continues.

**User response:** Verify that no PSB entries are defined in the PSLIB.

---

HKTD502E DSI PSBITKB-CALL FAILED

**Explanation:** The Discovery Utility called the Discovery Service Interface to create the program record ready to be stored in the IMS™ Tools KB repository, and received a non-zero return code.

**System action:** The job abends with U4075.

**User response:** Contact IBM Software support and provide the job log.

---

HKTD509I NUMBER OF PSB action WAS nnnnnnnn

**Explanation:** The Discovery Utility has discovered or deleted program specification blocks (PSB), where:

```
nnnnnnn
    Number of PSBs
```

**action** Discovered or Deleted

**System action:** Processing continues.

**User response:** Verify that the number of PSBs discovered or deleted is correct.

---

HKTD514W VALIDATION FAILED - PSB nnnnnnnn SKIPPED

**Explanation:** The Discovery Utility found an invalid PSB.

**System action:** The invalid PSB is not stored in IMS Tools Knowledge Base INPUT repository.

**User response:** Fix the invalid PSB by running the PSBGEN again.
Chapter 19. HKTM and HKTX error messages (internal data access APIs)

This reference section provides detailed information about the error messages issued by the internal data access APIs for IMS Tools Knowledge Base repositories. For information about how to troubleshoot these problems, call IBM Software Support.

Message format

Messages for the internal data access APIs for IMS Tools Knowledge Base repositories adhere to the following format:

HKTannnx

where:

HKT Indicates that the message was issued by internal data access APIs for IMS Tools Knowledge Base repositories

\( a \) Indicates the specific API that the message is coming from:

- M indicates that the message is coming from an internal import API.
- X indicates that the message is coming from an internal export API.

\( nnn \) Indicates the message identification number

\( x \) Indicates the severity of the message:

- A Indicates that operator intervention is required before processing can continue.
- E Indicates that an error occurred, which might or might not require operator intervention.
- I Indicates that the message is informational only.
- W Indicates that the message is a warning to alert you to a possible error condition.

Each message also includes the following information:

Explanation:
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System action:
The System action section explains what the system will do in response to the event that triggered this message.

User response:
The User response section describes whether a response is necessary, what the appropriate response is, and how the response will affect the system or program.

Module
The Module section indicates which module or modules are affected.
**HKTM002E** LOCID=mmm RC=10 RSN=02
R0= Garrrrrrrr : ALREADY INITIALIZED

**Explanation:** The caller is attempting to initialize an already initialized HKTIMST environment.

**System action:** Program returns to caller with the error and reason codes.

**User response:** Ensure that the environment is initialized once and only once.

**HKTM003E** LOCID=mmm RC=10 RSN=03
R0= Garrrrrrrr : NULL LOG TOKEN FOR FUNCTION

**Explanation:** The caller is attempting to process an HKTIMST function, other than an INITIAL or a TERM function, with an uninitialized environment.

**System action:** Program returns to caller with the error and reason codes.

**User response:** Ensure that the environment was initialized and not terminated prior to the function call.

**HKTM004E** LOCID=mmm RC=10 RSN=04
R0= Garrrrrrrr : INVALID FUNCTION SPECIFIED

**Explanation:** The invocation of the call to HKTIMST contained an invalid function name.

**System action:** Program returns to caller with the error and reason codes.

**User response:** Ensure that the function name is valid or has not been corrupted.

**HKTM005E** LOCID=mmm RC=10 RSN=05
R0= Garrrrrrrr : BAD PROCESSING STATE

**Explanation:** The state of a valid function was improperly invoked.

**User response:** This probably was caused by calling a non-initial nor non-term type function without successfully initializing the HKTIMST environment.

**HKTM006E** LOCID=mmm RC=08 RSN=06
R0= Garrrrrrrr : DATA TRUNCATED

**Explanation:** The user AREA supplied in the HKTIMST ACCDATA or GETMLST function was not large enough to hold the requested data.

**System action:** Program returns to caller with the error and reason codes.

**User response:** The application should use the COUNT field as described to determine the size that is needed and then rerun.

**HKTM007E** LOCID=mmm RC=0C RSN=07
R0= Garrrrrrrr : LOCATE RECORD FAILED

**Explanation:** For the HKTIMST ACCDATA function, attempting to locate a record, either the first or next, failed - other than an end of records condition.

**System action:** Program returns to caller with the error and reason codes.

**User response:** This is probably an environmental error. Ensure that the sensor data repository is still available and has not been damaged.

**HKTM008E** LOCID=mmm RC=0C RSN=08
R0= Garrrrrrrr : TOOL NAME IS MISSING

**Explanation:** The HKTIMST initialization function is missing the TOOL value, which is needed to retrieve the instrumentation data.

**System action:** Program returns to caller with the error and reason codes.

**User response:** Correct the initialization function to include a TOOL name.

**HKTM009E** LOCID=mmm RC=0C RSN=09
R0= Garrrrrrrr : DATAPART IS MISSING

**Explanation:** The HKTIMST initialization function is missing the DATAPART value, which is needed to retrieve the instrumentation data.

**System action:** Program returns to caller with the error and reason codes.

**User response:** Correct the initialization function to
include a DATAPART name.

HKTM010I LOCID=mmm RC=04 RSN=0A
R0=??????? : EMPTY MEMBER LIST
Explaination: The HKTIMST function GETMLST or GETMEXT could not find any matching members.
System action: Program returns to caller with the error and reason codes.
User response: This can be a valid result and no action is required.
If not, check the requested member(s) key to retrieve.

HKTM011E LOCID=mmm RC=0C RSN=0B
R0=??????? : GROUP NAME MISSING
Explaination: The repository GROUP name, which is used to connect to the repository that contains the instrumentation data, is missing from the HKTIMST initialization function.
During the initialization function process, a GROUP name must be supplied to connect to the repository that contains the instrumentation data.
System action: Program returns to caller with the error and reason codes.
User response: Ensure that a valid GROUP name is included on the HKTIMST initialization function.

HKTM012E LOCID=mmm RC=0C RSN=0C
R0=??????? : REPOSITORY INIT FAILED
Explaination: Access or connection to the sensor data repository: BSN_SENSOR failed. Any one of the following conditions might have caused the error:
• The incorrect IMS Tools KB server XCF group name was specified.
• The specified IMS Tools KB server is inactive.
• The Sensor Data repository data set is full.
• There is an error for the specified IMS Tools KB server.
• The region size for the job is too small.
System action: Program returns to caller with the error and reason code.
User response: Check to see that the sensor data repository has been started.
Check to see that the correct GROUP name has been supplied.
If RACF is in effect, make sure that the user has authority. Retry the program with a log file.
If the problem persists, contact the system programmer.

HKTM013E LOCID=mmm RC=0C RSN=0D
R0=??????? : BEGIN LIST FAILED
Explaination: Other than a null list, attempting to establish list access through the HKTIMST function BEGLIST failed.
System action: Program returns to caller with the error and reason codes.
User response: Check to see that the parameters for the BEGLIST were correctly specified.
Also, check that access to the sensor data repository was still viable. Retry the program with a log file.
If the problem persists, contact the system programmer.

HKTM014E LOCID=mmm RC=0C RSN=0E
R0=??????? : GET MEMBER LIST ERROR
Explaination: There was an invalid parameter, or a required parameter missing, to do an internal GETLIST function.
System action: Program returns to caller with the error and reason codes.
User response: Check to see that the parameters for ACCDATA, ACCDATA EXTENDED (ACCDEXT), ACCESS INDEX (ACCINDX), GET MEMBER LIST (GETMLIST), or GET MEMBER LIST EXTENDED (GETMEXT) were correctly specified.
Also, ensure that access to the sensor data repository was still viable. Retry the program with a log file.
If the problem persists, contact the system programmer.

HKTM015E LOCID=mmm RC=0C RSN=0F
R0=??????? : MEMBER ACCESS ERROR
Explaination: An attempt to access a member in an access type function failed.
System action: Program returns to caller with the error and reason codes.
User response: Check to see that the reference parameters for a member regarding ACCDATA, ACCDATA EXTENDED (ACCDEXT), or ACCESS INDEX (ACCINDX) were correctly specified.
Also, ensure that access to the sensor data repository was still viable. Retry the program with a log file.
If the problem persists, contact the system programmer.

HKTM016E LOCID=mmm RC=0C RSN=10
R0=??????? : COUNT MISSING
Explaination: The required COUNT parameter was missing in a GET list type function.
System action: Program returns to caller with the error and reason codes.
HKTM017E  LOCID=mmm  RC=0C  RSN=11  
R0=???????: INVALID VORDER  

Explanation:  The optional VORDER (version order)  
parameter had an invalid value.

User response:  Ensure that the VORDER specified in  
GET MEMBER LIST (GETMLIST) or GET MEMBER  
LIST EXTENDED (GETMEXT) has a correct value.

HKTM018E  LOCID=mmm  RC=0C  RSN=12  
R0=???????: AREA VARIABLE ERROR  

Explanation:  A required AREA parameter is missing  
in the current function.

System action:  Program returns to caller with the  
error and reason codes.

User response:  Ensure that the AREA variable is  
specified with the current function.

HKTM019E  LOCID=mmm  RC=0C  RSN=13  
R0=???????: LENGTH VARIABLE ERROR  

Explanation:  The required LENGTH parameter is  
missing or has an invalid value, such as a negative  
value, in the current function.

System action:  Program returns to caller with the  
error and reason codes.

User response:  Ensure that the LENGTH variable is  
specified correctly with the current function.

HKTM020E  LOCID=mmm  RC=0C  RSN=14  
R0=???????: COUNT VARIABLE ERROR  

Explanation:  A required COUNT parameter is missing  
in the current function.

System action:  Program returns to caller with the  
error and reason codes.

User response:  Ensure that the COUNT variable is  
specified.

HKTM021E  LOCID=mmm  RC=0C  RSN=15  
R0=???????: INVALID DELETE OPTION  

Explanation:  The INTENT delete option with the  
ACCESS DATA or ACCESS DATA EXTENDED function  
has an invalid value.

System action:  Program returns to caller with the  
error and reason codes.

User response:  If the INTENT option is specified, be  
sure the value specified is either M (for memory) or B  
(for both repository and memory).

HKTM022E  LOCID=mmm  RC=0C  RSN=16  
R0=???????: INVALID SYNCH SPECIFICATION  

Explanation:  The INTENT synchronize option with  
the SYNCH function has an invalid value.

System action:  Program returns to caller with the  
error and reason code.

User response:  If the INTENT option is specified, be  
sure the value specified is either Synch, Read lock,  
Update lock, Commit, Back out, or Test.

HKTM023E  LOCID=mmm  RC=0C  RSN=17  
R0=???????: FIELD DESCRIPTOR EXCEPTION  

Explanation:  At least one of the function FIELD  
parameters (FIELDS, AREA, and/or LENGTH) was  
missing or incorrectly defined.

System action:  Program returns to caller with the  
error and reason codes.

User response:  Ensure that FIELD parameters are  
defined and have valid values.

HKTM024I  LOCID=mmm  RC=04  RSN=18  
R0=???????: NO FIELD OR DESCRIPTORS  

Explanation:  Informational or warning that the count  
of the number of field or descriptors (HFDFLDCT in  
the header) requested was zero.

System action:  Program returns to caller with the  
error and reason codes.

User response:  This is a warning/informational  
message.

If the user requests more than zero, then the  
HFDFLDCT, along with the number of fields following,  
should be increased.
HKTM025E LOCID=nnnn RC=08 RSN=19
R0=???????? : NOT FOUND FIELD ENTRY

Explanation: At least one of the FIELD entries of a FIELD request was not found.

This might or might not be an error depending on the logic of the program.

System action: Program returns to caller with the error and reason code.

User response: If this is in error, ensure that the FIELD entry is defined.

HKTM026E LOCID=nnnn RC=0C RSN=1A
R0=???????? : DYNAMIC STORAGE EXCEPTION

Explanation: An error occurred with internally allocated storage used by the caller.

This is storage used by GETMEXT, ACCDEXT, DELETE functions.

System action: Program returns to caller with the error and reason codes.

User response: Ensure that the reference of this storage is correct, or that the storage has been successfully allocated and not prematurely deleted (RELEASED), or that the reference address is correct.

HKTM027E LOCID=nnnn RC=04 RSN=1B
R0=???????? : RELEASE OF NULL POINTER

Explanation: An attempt was made to release internal storage by using a NULL pointer.

A NULL pointer can be used to ensure that storage is released. The storage pointer might have been zeroed out accidentally.

System action: Program returns to caller with the error and reason codes.

User response: This warning/informational message might or might not be correct.

You can attempt to RELEASE already released storage as a catch all.

HKTM028E LOCID=nnnn RC=0C RSN=1C
R0=???????? : HISTORY SPECIFICATION ERROR

Explanation: An attempt to SET or GET HISTORY for pertinent members failed.

This can be, for example, due to the user’s RACF authorization to SET HISTORY, or that the parameters (versions and retention periods) specification(s) were invalid.

System action: Program returns to caller with the error and reason codes.

User response: The log file might contain extended information about the failure.

If it is due to RACF, make sure that the current user identification is authorized.

HKTM029E LOCID=nnnn RC=04 RSN=1D
R0=???????? : HISTORY NOT FOUND

Explanation: A GET HISTORY function could not find any history settings (versions and/or retention periods settings) for the relevant repository member set.

System action: Program returns to caller with the error and reason codes.

User response: This might or might not be an error.

If HISTORY should be set, then an authorized user such as an administrator must set the history.

HKTM030E LOCID=nnnn RC=0C RSN=1E
R0=???????? : PATTERN SPECIFICATION ERROR

Explanation: A get member list (GETMLST) or a get member list extended (GETMEXT) specified an invalid PATTERN specification.

The valid PATTERN specifications are Yes, No, or Super.

System action: Program returns to caller with the error and reason codes.

User response: Check the optional PATTERN specification to ensure that one of the valid values is being used.

HKTX001E LOCID=nnnn RC=10 RSN=01
R0=???????? : NULL PARAMETER LIST

Explanation: A NULL parameter list was passed to the HKTEXT processor (for example, GPR R1=0).

System action: Program returns to caller with the error and reason codes.

User response: Ensure that access is through the HKTEXT macro and is correctly specified.

HKTX002E LOCID=nnnn RC=10 RSN=02
R0=???????? : ALREADY INITIALIZED

Explanation: The caller is attempting to initialize an already initialized HKTEXT environment or a non-zero token was used in an attempt to initialize the API.

System action: Program returns to caller with the error and reason codes.

User response: Ensure that the environment is initialized once and only once.
HKTX003E • HKTX010E

Check to see that before the initialization call, the token is set to zero.

Be sure if an environment is terminated that the token is set to zero.

If you want to have more than one environment active at the same time, each of these environments must use a unique token.

HKTX003E

<table>
<thead>
<tr>
<th>LOCID=mmm</th>
<th>RC=10 RSN=03</th>
</tr>
</thead>
<tbody>
<tr>
<td>R0=?????? : NULL LOG TOKEN FOR FUNCTION</td>
<td></td>
</tr>
</tbody>
</table>

**Explanation:** The caller is attempting to process an HKTEXST function, other than an INITIAL or a TERM function, with an uninitialized environment.

**System action:** Program returns to caller with the error and reason codes.

**User response:** Ensure that the environment was initialized and not terminated prior to the function call.

HKTX004E

<table>
<thead>
<tr>
<th>LOCID=mmm</th>
<th>RC=10 RSN=04</th>
</tr>
</thead>
<tbody>
<tr>
<td>R0=?????? : INVALID FUNCTION SPECIFIED</td>
<td></td>
</tr>
</tbody>
</table>

**Explanation:** The invocation of the call to HKTEXST contained an invalid function name.

**System action:** Program returns to caller with the error and reason codes.

**User response:** Ensure that the function name is valid or has not been corrupted.

HKTX005E

<table>
<thead>
<tr>
<th>LOCID=mmm</th>
<th>RC=10 RSN=05</th>
</tr>
</thead>
<tbody>
<tr>
<td>R0=?????? : BAD PROCESSING STATE</td>
<td></td>
</tr>
</tbody>
</table>

**Explanation:** The state of a valid function was improperly invoked.

This probably was caused by calling a non-initial nor non-term type function without successfully initializing the HKTEXST environment.

**System action:** Program returns to caller with the error and reason codes.

**User response:** Ensure that for all functions of a given HKTEXST environment, excluding initial or term, are issued after a successful initialization and before a termination function.

HKTX006E

<table>
<thead>
<tr>
<th>LOCID=mmm</th>
<th>RC=0C RSN=06</th>
</tr>
</thead>
<tbody>
<tr>
<td>R0=?????? : INVALID LOCK SPECIFICATION</td>
<td></td>
</tr>
</tbody>
</table>

**Explanation:** The LOCK function overriding INTENT specification had an invalid value.

**System action:** Program returns to caller with the error and reason codes.

**User response:** Valid values for the INTENT value with the LOCK function are Yes or No.

HKTX007E

<table>
<thead>
<tr>
<th>LOCID=mmm</th>
<th>RC=10 RSN=07</th>
</tr>
</thead>
<tbody>
<tr>
<td>R0=?????? : UNABLE TO CREATE LINKAGE</td>
<td></td>
</tr>
</tbody>
</table>

**Explanation:** The attempt to allow for serialization failed.

This can occur when an attempt to create a local MVS PC number fails.

**System action:** Program returns to caller with the error and reason codes.

**User response:** Retry the process again with a log file.

If the error reoccurs, report the problem to the system programmer.

HKTX008E

<table>
<thead>
<tr>
<th>LOCID=mmm</th>
<th>RC=0C RSN=08</th>
</tr>
</thead>
<tbody>
<tr>
<td>R0=?????? : TOOL NAME IS MISSING</td>
<td></td>
</tr>
</tbody>
</table>

**Explanation:** The HKTEXST initialization function is missing the TOOL name, which is needed to retrieve the instrumentation data.

**System action:** Program returns to caller with the error and reason codes.

**User response:** Correct the initialization function to include a TOOL name.

HKTX009E

<table>
<thead>
<tr>
<th>LOCID=mmm</th>
<th>RC=0C RSN=09</th>
</tr>
</thead>
<tbody>
<tr>
<td>R0=?????? : DATAPART IS MISSING</td>
<td></td>
</tr>
</tbody>
</table>

**Explanation:** The HKTEXST initialization function is missing the DATAPART name, which is needed to retrieve the instrumentation data.

**System action:** Program returns to caller with the error and reason codes.

**User response:** Correct the initialization function to include a DATAPART name.

HKTX010E

<table>
<thead>
<tr>
<th>LOCID=mmm</th>
<th>RC=0C RSN=0A</th>
</tr>
</thead>
<tbody>
<tr>
<td>R0=?????? : INVALID VARIABLE NAME</td>
<td></td>
</tr>
</tbody>
</table>

**Explanation:** An invalid variable name was entered for an HKTEXST ADD VARIABLE (ADDVAR) function.

Either the variable name was missing or had invalid syntax.

**System action:** Program returns to caller with the error and reason codes.

**User response:** Check the descriptor with the variable name passed on an ADDVAR to see that it conforms to the correct syntax.

Ensure there are no embedded blanks, only trailing blanks.

The name must conform to a valid data set name,
HKTX011E  LOCID=mnnnn  RC=0C  RSN=0B
R0=???????? : GROUP NAME MISSING

**Explanation:** The repository GROUP name, which is used to connect to the repository that contains the instrumentation data, is missing from the HKTEXST initialization function.

**System action:** Program returns to caller with the error and reason codes.

**User response:** Ensure that a valid GROUP name is included on the HKTEXST initialization function.

---

HKTX012E  LOCID=mnnnn  RC=0C  RSN=0C
R0=???????? : REPOSITORY INIT FAILED

**Explanation:** Access or connection to the sensor data repository: BSN_SENSOR failed.

An attempt to initialize an environment to access the instrumentation data failed. Any one of the following conditions could have caused the error:

- The incorrect IMS Tools KB server XCF group name was specified.
- The specified IMS Tools KB server is inactive.
- The Sensor Data repository data set is full.
- There is an error for the specified IMS Tools KB server.
- The region size for the job is too small.

**System action:** Program returns to caller with the error and reason codes.

**User response:** Check to see that the sensor data repository has been started.

Check to see that the correct GROUP name has been supplied.

If RACF is in effect, make sure that the user has authority. Retry the program with a log file.

If the problem persists, contact the system programmer.

---

HKTX013E  LOCID=mnnnn  RC=0C  RSN=0D
R0=???????? : CREATE MEMBER FAILED

**Explanation:** Access to the sensor data member in the repository failed.

An attempt to create a new repository member with the FUNC=ACCUM statistics failed. Any one of the following conditions might have caused the error:

- The incorrect IMS Tools KB server XCF group name was specified.
- The specified IMS Tools KB server is inactive.
- The Sensor Data repository data set is full.
- There is an error for the specified IMS Tools KB server.
- The region size for the job is too small.

**System action:** Program returns to caller with the error and reason codes.

**User response:** If RACF is in effect, ensure that the user has authority to write a member to the repository. Retry the program with a log file.

If the problem persists, contact the system programmer.

---

HKTX014E  LOCID=mnnnn  RC=0C  RSN=0E
R0=???????? : ADD RECORD FAILED

**Explanation:** An attempt to add a record to the sensor data member in the repository failed.

An attempt to add a record with FUNC=ACCUM statistics failed. Any one of the following conditions might have caused the error:

- The incorrect IMS Tools KB server XCF group name was specified.
- The specified IMS Tools KB server is inactive.
- The Sensor Data repository data set is full.
- There is an error for the specified IMS Tools KB server.
- The region size for the job is too small.

**System action:** Program returns to caller with the error and reason codes.

**User response:** If RACF is in effect, ensure that the user has authority. Retry the program with a log file.

If the problem persists, contact the system programmer.

---

HKTX015E  LOCID=mnnnn  RC=0C  RSN=0F
R0=???????? : WRITE MEMBER FAILED

**Explanation:** An attempt to add a record to the sensor data member in the repository failed.

An attempt to write a new repository member or version of the repository failed. Any one of the following conditions might have caused the error:

- The incorrect IMS Tools KB server XCF group name was specified.
- The specified IMS Tools KB server is inactive.
- The Sensor Data repository data set is full.
- There is an error for the specified IMS Tools KB server.
- The region size for the job is too small.

**System action:** Program returns to caller with the error and reason codes.

**User response:** If RACF is in effect, ensure that the user has authority to write a member to the repository. Retry the program with a log file.

If the problem persists, contact the system programmer.

---

except nodes can be greater than 8-characters.
### HKTX016E • HKTX023E

<table>
<thead>
<tr>
<th>HKTX016E</th>
<th>LOCID=mmmm RC=0C RSN=10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R0=ffffffff : INVALID INTENT</td>
</tr>
<tr>
<td></td>
<td>DETECT</td>
</tr>
<tr>
<td>Explanation:</td>
<td>The INTENT value on an HKTEXT initialization function was invalid.</td>
</tr>
<tr>
<td>System action:</td>
<td>Program returns to caller with the error and reason codes.</td>
</tr>
<tr>
<td>User response:</td>
<td>If an INTENT value is specified on initialization, valid values are NONE (N), DEFAULT (D), or ALL (A).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HKTX017E</th>
<th>LOCID=mmmm RC=0C RSN=11</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R0=ffffffff : INVALID RESERVE FIELDS</td>
</tr>
<tr>
<td>Explanation:</td>
<td>The descriptor block passed on an HKTEXT ADDVAR function had non-zero values in either one of the reserved bit or byte fields.</td>
</tr>
<tr>
<td>System action:</td>
<td>Program returns to caller with the error and reason codes.</td>
</tr>
<tr>
<td>User response:</td>
<td>Ensure that values for the reserved fields in the variable descriptor are all zeroes.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HKTX018E</th>
<th>LOCID=mmmm RC=0C RSN=12</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R0=ffffffff : INVALID VARIABLE LENGTH</td>
</tr>
<tr>
<td>Explanation:</td>
<td>The current function passed a null address, a null value, a negative value, or a length beyond the allowable range.</td>
</tr>
<tr>
<td>This includes variable lengths for an HKTEXT ADDVAR function.</td>
<td></td>
</tr>
<tr>
<td>System action:</td>
<td>Program returns to caller with the error and reason codes.</td>
</tr>
<tr>
<td>User response:</td>
<td>Ensure that the current HKTEXT function has correctly specified all address and/or length fields.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HKTX019E</th>
<th>LOCID=mmmm RC=0C RSN=13</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R0=ffffffff : INVALID VARIABLE FORMAT</td>
</tr>
<tr>
<td>Explanation:</td>
<td>The format value specified for the HKTEXT ADDVAR function is invalid.</td>
</tr>
<tr>
<td>System action:</td>
<td>Program returns to caller with the error and reason codes.</td>
</tr>
<tr>
<td>User response:</td>
<td>Ensure that the format specified conforms to an allowable type for the variable descriptor.</td>
</tr>
<tr>
<td>Valid formats for the variable value are Binary, Character, Packed, (E) Stck, or Unsigned Packed.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HKTX020E</th>
<th>LOCID=mmmm RC=0C RSN=14</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R0=ffffffff : INVALID SIGNED INDICATOR</td>
</tr>
<tr>
<td>Explanation:</td>
<td>The signed indicator specified for the HKTEXT ADDVAR function is invalid.</td>
</tr>
<tr>
<td>System action:</td>
<td>Program returns to caller with the error and reason codes.</td>
</tr>
<tr>
<td>User response:</td>
<td>Valid values for the signed indicator for a variable descriptor is either Yes (Y) or No (N).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HKTX021E</th>
<th>LOCID=mmmm RC=0C RSN=15</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R0=ffffffff : INVALID VARIABLE VALUE</td>
</tr>
<tr>
<td>Explanation:</td>
<td>The variable value specified for the HKTEXT ADDVAR function does not conform to the variable format specified.</td>
</tr>
<tr>
<td>For example, a stated packed number contains a non-packed digit(s).</td>
<td></td>
</tr>
<tr>
<td>System action:</td>
<td>Program returns to caller with the error and reason codes.</td>
</tr>
<tr>
<td>User response:</td>
<td>Check the variable format and variable value for the HKTEXT ADDVAR function.</td>
</tr>
<tr>
<td>One or both are not correctly specified.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HKTX022E</th>
<th>LOCID=mmmm RC=0C RSN=16</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R0=ffffffff : INVALID WRITE SPECIFICATION</td>
</tr>
<tr>
<td>Explanation:</td>
<td>The override INTENT specified for the HKTEXT ACCUM function, that writes data to the repository, must be No (N) or Yes (Y).</td>
</tr>
<tr>
<td>System action:</td>
<td>Program returns to caller with the error and reason codes.</td>
</tr>
<tr>
<td>User response:</td>
<td>Check the value of the INTENT option specified for the HKTEXT ACCUM function. Valid values are No (N) or Yes (Y).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HKTX023E</th>
<th>LOCID=mmmm RC=0C RSN=17</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R0=ffffffff : SERIALIZATION SPECIFICATION</td>
</tr>
<tr>
<td>Explanation:</td>
<td>The optional SERIALIZE specification on the HKTEXT INITIAL function had an invalid value. It must be either A, N, Y or blank.</td>
</tr>
<tr>
<td>System action:</td>
<td>Program returns to caller with the error and reason codes.</td>
</tr>
<tr>
<td>User response:</td>
<td>Check the value of the SERIALIZE option specified for the HKTEXT ACCUM function. Valid values are Auto (A), No (N), Yes (Y), or blank.</td>
</tr>
<tr>
<td>HKTX024E</td>
<td>INVALID IMS DDNAME SETTING</td>
</tr>
<tr>
<td>----------</td>
<td>----------------------------</td>
</tr>
<tr>
<td><strong>Explanation:</strong></td>
<td>This error message is deprecated and no longer used.</td>
</tr>
<tr>
<td><strong>System action:</strong></td>
<td>None.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>None.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HKTX025E</th>
<th>LOCID=mmm RC=0C RSN=19 R0=??????? : USER PARAMETER EXCEPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong></td>
<td>The HKTEXT INITIAL function is missing the mandatory user parameter list: UPARMSTR and UPARMLEN. These fields must be specified on the INITIAL function even if the user parameter list has a length of zero.</td>
</tr>
<tr>
<td><strong>System action:</strong></td>
<td>Program returns to caller with the error and reason codes.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Add a zero-length string parameter list specification to the HKTEXT INITIAL function.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Use a zero-length string parameter list for cases where a parameter list is unnecessary.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HKTX026E</th>
<th>LOCID=mmm RC=0C RSN=1A R0=??????? : INVALID TREE TYPE SPECIFIED</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong></td>
<td>The HKTEXT INITIAL, TASKLIST, and TASKLEXT functions specifying TREETYPE have an invalid value.</td>
</tr>
<tr>
<td><strong>System action:</strong></td>
<td>Program returns to caller with the error and reason codes.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Check the TREETYPE specification on the HKTEXT macro.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Valid values for TREETYPE are GLOBAL (G), JOBSTEP (J), LOCAL (L), or SINGLE (S).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HKTX027E</th>
<th>LOCID=mmm RC=0C RSN=1B R0=??????? : TASKLIST REQUEST EXCEPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong></td>
<td>The HKTEXT TASKLIST function did not specify an AREA or LENGTH, or the LENGTH was not big enough to hold the returned task list header.</td>
</tr>
<tr>
<td><strong>System action:</strong></td>
<td>Program returns to caller with the error and reason codes.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Check the AREA and LENGTH settings for the TASKLIST function call.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HKTX028E</th>
<th>LOCID=mmm RC=04 RSN=1C R0=??????? : TASK LIST NOT BIG ENOUGH</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong></td>
<td>The HKTEXT TASKLIST function LENGTH was not big enough to hold the number of task entries to return.</td>
</tr>
<tr>
<td><strong>System action:</strong></td>
<td>The list is truncated.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>If all entries are required to be returned, ensure that the task list can hold at least as many as are returned in the TSKMAXNO member of the task list header.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>The actual number of task entries returned is in the TSKCURNO member.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Between TASKLIST calls, it is possible for the number of tasks to change. Therefore, it is possible to require several iterations of calls to obtain the total number of entries.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HKTX029E</th>
<th>LOCID=mmm RC=08 RSN=1D R0=??????? : AUTHORIZATION REQUIRED</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong></td>
<td>The HKTEXT INITIAL function specified SERIALIZE=YES. However, the module issuing the INITIAL was not authorized.</td>
</tr>
<tr>
<td><strong>System action:</strong></td>
<td>Program returns to caller with the error and reason codes.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>If the HKTEXT environment does not need serialization, change the SERIALIZE value to NO - or explicitly, or by default, set it to AUTO.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>If SERIALIZE must be YES, then ensure that at least at HKTEXT INITIAL time, the module is running APF authorized - which includes the Binder/Link Edit: SETCODE AC(1).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HKTX030E</th>
<th>LOCID=mmm RC=0C RSN=1E R0=??????? : INVALID SYNCH SPECIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong></td>
<td>The HKTEXT SYNCH function encountered an error attempting to process a SYNCH option.</td>
</tr>
<tr>
<td><strong>System action:</strong></td>
<td>Program returns to caller with the error and reason codes.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Check to see that the HKTEXT SYNCH function INTENT has a valid specification. This includes both the value and the HKTEXT current SYNCH state.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>A SYNCH setting state of S, R, or U must not already have a SYNCH set state.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>A SYNCH setting state of C or B must already have a SYNCH set state.</td>
</tr>
</tbody>
</table>
HKTX031E  LOCID=mmm  RC=0C  RSN=1F
   R0=rrrrrrrrr : DYNAMIC STORAGE
   EXCEPTION

Explanation: An attempt to issue an HKTExST
RELEASE function to delete storage internally allocated
for the user to browse failed.

The storage pointer contained an address of the storage
not recognized by the current HKTExST environment.

This does not include a NULL valued pointer.

System action: Program returns to caller with the
error and reason codes.

User response: Check the address of the storage that
is passed to be released.

Make sure the pointer or the storage has not been
corrupted or invalidly referenced.

You can also let the storage be released automatically
when the HKTExST TERM function for this HKTExST
environment is issued.

HKTX032E  LOCID=mmm  RC=04  RSN=20
   R0=rrrrrrrrr : RELEASE OF NULL
   POINTER

Explanation: A NULL pointer was passed during an
attempt to issue an HKTExST RELEASE function to
delete storage internally allocated for the user.

System action: Program returns to caller with the
error and reason codes.

User response: The most likely cause of this warning/error situation is an attempt to delete storage
that has already been deleted.

If this is not the situation, then refer to the HKTX031E message.

HKTX033E  LOCID=mmm  RC=0C  RSN=21
   R0=rrrrrrrrr : HISTORY SPECIFICATION
   ERROR

Explanation: The HISTORY setting for either the
HKTExST SETHIST or GETHIST using the HISTORY
option was invalid.

System action: Program returns to caller with the
error and reason codes.

User response: Check the HISTORY option to be sure
that it is set to either Yes (Y) or No (N).

HKTX034E  LOCID=mmm  RC=04  RSN=22
   R0=rrrrrrrrr : HISTORY NOT FOUND

Explanation: The HKTExST GETHIST (get history)
could not find any history for the specified extended
sensor data members.

Setting of history (for example, retention days and
maximum versions) is optional.

System action: Program returns to caller with the
error and reason codes.

User response: This is an informational message and
no action is required. History settings are optional.

HKTX035E  LOCID=mmm  RC=0C  RSN=23
   R0=rrrrrrrrr : INVALID MERGE COUNT
   SETTING

Explanation: The optional MERGECNT on the
HKTExST INITIAL function had an invalid explicit
value.

System action: Program returns to caller with the
error and reason codes.

User response: Check the explicit merge count setting
(MERGECNT) and ensure that it has a valid value of
Yes (Y) or No (N).

HKTX036E  LOCID=mmm  RC=0C  RSN=24
   R0=rrrrrrrrr : USER INDEX ACCESS
   FAILED

Explanation: The optional MERGECNT on the
HKTExST INITIAL function had an invalid explicit
value.

System action: Program returns to caller with the
error and reason codes.

User response: Check the MERGECNT option and
ensure that it has a valid value of Yes (Y) or No (N).

HKTX037E  LOCID=mmm  RC=0C  RSN=25
   R0=rrrrrrrrr : INVALID OVERRIDE EXM
   BLOCK

Explanation: The HKTExST EXM block passed on an
HKTExST INITIAL function had an invalid format.

System action: Program returns to caller with the
error and reason codes.

User response: Verify that the EXM control block was
correctly constructed using the HKTExSTM0 program.

This includes, but is not limited to, the EXM header
information, such as EXM block size, eyecatcher, and
version number.

HKTX038E  LOCID=mmm  RC=0C  RSN=26
   R0=rrrrrrrrr : DELETE MEMBER ERROR

Explanation: The HKTExST DELETE function failed
delete the requested member.

System action: Program returns to caller with the
error and reason codes.

User response: Ensure that the correct member to
delete was specified.
Also, ensure that the member had not previously been deleted.

HKTX039E  LOCID=mmm  RC=0C  RSN=27
   R0=rrrrrrrr : INVALID EXCLUDE SYS
   SETTING

Explanation: The EXECSYS on the HKTEXST INITIAL function, if specified, had an invalid value.

System action: Program returns to caller with the error and reason codes.

User response: The only valid values allowed for the EXECSYS option are either Yes (Y) or No (N).

HKTX040E  LOCID=mmm  RC=0C  RSN=28
   R0=rrrrrrrr : INVALID ELECTIVE KEY
   USAGE

Explanation: The elective key portion indicator had an invalid value.

System action: Program returns to caller with the error and reason codes.

User response: This is an internal error probably due to running an invalid version of the HKTEXST process.
Chapter 20. BPE diagnostic trace

As requests flow through the Service Repository server, flow trace records are produced.

Some events also result in the creation of trace data. This is a wraparound BPE trace which can be formatted and printed by using the following MODIFY command:

```plaintext
◄—F—server_jobname,—DUMPTRACE—►
```

**Important**: This information is not generally intended for clients or administrators. It is generated to give visibility to the server processes in order to aid problem diagnosis and Service Repository development.

The formatted trace is placed in FPQPRINT and contains the following information:

**Date and time**
In YY/MM/DD HH:MM:SS.thmiju format.

**Type**
A single event (EV) or a process (PR).

**Function**
The function that was initiated.

**User ID**
The user running the operation.

**XCF or other information**
XCF token or additional supporting information. For example, the DSN of data set being allocated.

**Return code, reason code, and feedback**
The return code, reason codes, and feedback word for the operation.

In the event of a server failure, formatted DIAG trace entries, as generated by the FPQ server DUMPTRACE command, may not be available. However, the raw BPE DIAG trace entries are available in an FPQ server dump. To assist you with dump analysis of these trace entries, the BPE Trace Format Service support is provided.
Chapter 21. IBM Service Repository abend codes

The IBM Service Repository does not have any user abend codes. The Service Repository server runs in a BPE environment, which has a number of user abend codes associated with it.

For details of BPE abend codes, refer to *IMS Messages and codes*. 
Chapter 22. Gathering diagnostic documentation

The following information provides guidelines for gathering proper diagnostic documentation when reporting a problem with IMS Tools Knowledge Base to IBM Software Support.

Provide the following information for every IMS Tools Knowledge Base problem:

- Problem description
- Product release number and the number of the last PTF (program temporary fix) that was installed.

Additional documentation is also required for various incident types. In general, gather the suggested documentation for the following incident types:

- For online reports
  - Screen print of Internal Error panel
  - Job log from TSO session that encountered the abend
  - Job log from server
  - Description of the task that you were performing before the internal error occurred

- For online abend
  - Screen shot of panel that encountered the abend
  - Job log from TSO session that encountered the abend
  - Job log from server
  - Transaction dump that was generated by the abend (data set is named user.ITKB.* where user is your TSO prefix if it is set, or your TSO user ID)
  - Description of the task that you were performing before the abend occurred

- For online error message
  - Text of message
  - Description of the task that you were performing before you received the message

- For error in batch processing (Admin, Import, Export)
  - Job log
  - Print output
  - Contents of data sets that were used for the execution

- For abend during batch processing (Admin, Import, Export)
  - Job log
  - Print output
  - Contents of data sets that were used for the execution
  - Dump (if possible, an SVC dump)
Part 6. Appendixes
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