Note:
Before using this information and the product it supports, read the information in "Notices" on page 237.
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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 Library page.

This information is designed to help database administrators, system programmers, application programmers, and system operators perform the following tasks:

• Plan for the installation of IMS Tools Knowledge Base
• Install, test, and operate IMS Tools Knowledge Base
• Configure the IMS Tools Knowledge Base environment
• Diagnose and recover from IMS Tools Knowledge Base problems

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

• The OS/390® or z/OS operating system
• ISPF
• SMP/E

Specific changes since the previous edition of this book are indicated by a vertical bar (1) to the left of a change. Editorial changes that have no technical significance are not noted.

Always check the IMS Tools product publications page for the most current version of this information:


Service updates and support information

Service updates and support information for this product, including software fix packs, PTFs, Frequently Asked Question (FAQs), technical notes, troubleshooting information, and downloads, are available from the Web.

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


Highlighting conventions

This information uses the following highlighting conventions:
How to read syntax diagrams

The following rules apply to the syntax diagrams that are used in this information:

- Read the syntax diagrams from left to right, from top to bottom, following the path of the line. The following conventions are used:
  - The >>> symbol indicates the beginning of a syntax diagram.
  - The --> symbol indicates that the syntax diagram is continued on the next line.
  - The >-- symbol indicates that a syntax diagram is continued from the previous line.
  - The -->< symbol indicates the end of a syntax diagram.
- Required items appear on the horizontal line (the main path).

```
>>>required_item
```

- Optional items appear below the main path.

```
>>>required_item
    optional_item
```

If an optional item appears above the main path, that item has no effect on the execution of the syntax element and is used only for readability.

```
>>>required_item
    optional_item
```

- If you can choose from two or more items, they appear vertically, in a stack. If you must choose one of the items, one item of the stack appears on the main path.

```
>>>required_item
    required_choice1
    required_choice2
```

If choosing one of the items is optional, the entire stack appears below the main path.

```
>>>required_item
    optional_choice1
    optional_choice2
```

If one of the items is the default, it appears above the main path, and the remaining choices are shown below.
• An arrow returning to the left, above the main line, indicates an item that can be repeated.

• If the repeat arrow contains a comma, you must separate repeated items with a comma.

• A repeat arrow above a stack indicates that you can repeat the items in the stack.

• Keywords, and their minimum abbreviations if applicable, appear in uppercase. They must be spelled exactly as shown. Variables appear in all lowercase italic letters (for example, column-name). They represent user-supplied names or values.

• Separate keywords and parameters by at least one space if no intervening punctuation is shown in the diagram.

• Enter punctuation marks, parentheses, arithmetic operators, and other symbols, exactly as shown in the diagram.

• Footnotes are shown by a number in parentheses, for example (1).

How to send your comments

Your feedback is important in helping to provide the most accurate and high-quality information. If you have any comments about this book or any other IMS Tools Knowledge Base documentation, use either of the following options:

• Use the online reader comment form, which is located at: www.ibm.com/software/data/rcf/

• Send your comments by e-mail to comments@us.ibm.com. Be sure to include the name of the book, the part number of the book, the version of IMS Tools Knowledge Base, and, if applicable, the specific location of the text you are commenting on (for example, a page number or table number).
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:
• IMS Tools Knowledge Base overview
Chapter 1. Tools Base 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 does Tools Base IMS Tools Knowledge Base do?”
- “IBM Tools Base for z/OS” on page 5
- “Information management process flow” on page 6
- “Report service environment” on page 7
- “Policy Services environment (conditional reorganization example)” on page 8
- “Tools Base IMS Tools Knowledge Base documentation and updates” on page 10
- “Accessibility features” on page 11

What does Tools Base IMS Tools Knowledge Base do?

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

Tools Base 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. Tools Base 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 Tools Base 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 Tools Base IMS Tools Knowledge Base server and stored in a central Tools Base 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 Tools Base 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 Tools Base IMS Tools Knowledge Base.

**Product features and benefits**

This version of Tools Base 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 Tools Base 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:
- Tools Base IMS Tools Knowledge Base
- Policy Services
- Autonomics Director
- Autonomics Director for DB2 for z/OS
- IMS Tools Common Services User's Guide
  (includes IMS Tools Generic Exits and IMS Tools Online System Interface)
- IMS Hardware Data (HD) Compression Extended
- Distributed Access Infrastructure
- Tools Customizer

About Tools Base IMS Tools Knowledge Base

With its common repository and viewing interface, Tools Base 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. Tools Base 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 Tools Base 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 Tools Base 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 Tools Base 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 Tools Base 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 Tools Base IMS Tools Knowledge Base server.

The following diagram illustrates the process flow for the Tools Base IMS Tools Knowledge Base information management environment:
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 Tools Base 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 Tools Base IMS Tools Knowledge Base server, allow access to current and archived information (such as reports and policy data).

**Report service environment**

The Tools Base 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 Tools Base IMS Tools Knowledge Base information management environment consists of the following components:
- One or more primary Tools Base IMS Tools Knowledge Base servers
  You can divide workload and data storage between logical environments.
- One or more secondary Tools Base 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 Tools Base IMS Tools Knowledge Base
• XCF interface that is used to transmit reports to the Tools Base 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:

![Diagram of Systemplex showing IMS Mainframes, IMS Tools KB Primary Server, IMS Tools KB Secondary Server, Central Report Repository, Reports sent over XCF, ISPF interface.]  

**Figure 2. Tools Base 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 autonomic environment. All information is stored in and managed by central repositories controlled by Tools Base 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 for full details on how this IMS Tools product uses Policy Services to perform conditional database reorganization.

**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.
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.

**Tools Base IMS Tools Knowledge Base documentation and updates**

IBM Tools Base IMS Tools Knowledge Base for z/OS information is available at multiple places on the web. You can receive updates to IMS Tools information automatically by registering with the IBM My Support service.
Tools Base IMS Tools Knowledge Base information on the Web

The IMS Tools product publications web page provides current product documentation that you can view, print, and download. To locate publications with the most up-to-date information, refer to the following web page:

www.ibm.com/support/docview.wss?uid=swg27020942

You can also access documentation for many IMS Tools from IBM Knowledge Center:

http://www.ibm.com/support/knowledgecenter

Search for a specific IMS Tool product or browse the Information Management > IMS family.

IBM Redbooks® publications that cover IBM Tools Base IMS Tools Knowledge Base for z/OS are available from the following web page:

http://www.redbooks.ibm.com

The Data Management Tools Solutions website shows how IBM solutions can help IT organizations maximize their investment in IMS databases while staying ahead of today's top data management challenges:


Receiving documentation updates automatically

To automatically receive a weekly email that notifies you when new DCF documents are released, when existing product documentation is updated, and when new product documentation is available, you can register with the IBM My Support service. You can customize the service so that you receive information about only those IBM products that you specify.

To register with the My Support service:

1. Go to http://www.ibm.com/support/mysupport
2. Enter your IBM ID and password, or create one by clicking register now.
3. When the My Support page is displayed, click add products to select those products that you want to receive information updates about. The DB2® and IMS Tools category is located under Software > Data and Information Management > Database Tools & Utilities.
4. Click Subscribe to email to specify the types of updates that you would like to receive.
5. Click Update to save your profile.

Accessibility features

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 Tools Base IMS Tools Knowledge Base enable users to:
• 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 ISPF, 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.
Part 2. IMS Tools KB administrator 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:
- Configuring an initial installation of IMS Tools KB
- Configuring an existing installation of IMS Tools KB (migration)
- Registering products and reports
- RECON ID (locale) administration
- Repository administration
- Converting an existing IMS Tools KB V1.1 or 1.2 repository to IMS Tools KB V1.5 repository
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.
Chapter 3. Configuring an existing installation of IMS Tools KB (migration)

You have two options for migrating an existing IMS Tools KB V1.1 or V1.2 installation to V1.5: delete your existing IMS Tools KB V1.1 or V1.2 repository data sets and install IMS Tools KB, or convert your existing repository data sets to the new V1.5 repository structure.

**About this task**

If you have IMS Tools KB V1.3 or V1.4 installed, or IMS Tools KB V1.5 is your initial install, you do not need to migrate to IMS Tools KB V1.5.

**Procedure**

To configure an existing installation of IMS Tools KB, choose one of the following options:

- **Delete your existing IMS Tools KB V1.1 or V1.2 repository data sets and install IMS Tools KB V1.5** by performing the tasks as described in the Configuring IMS Tools Knowledge Base section in the IBM Tools Base for z/OS Configuration for IMS documentation.

  **Warning:** You cannot recover IMS Tools KB V1.1 or V1.2 repository data sets after they are deleted.

  With this option, here is how the existing IMS Tools KB V1.1 or V1.2 data is handled:
  - Registry and catalog data is created as part of the configuration to IMS Tools KB V1.5.
  - Output repository reports are lost. New reports are created by running the IMS Tools that generate those reports.
  - Input repository RECON ID and related data is lost and must be recreated by the installation, if required.
  - Input repository Policy Services objects (policies, rules, notification lists, and directory entries) is lost and must be recreated, if required.
  - Sensor Data repository data is lost. New data must be created by running the IMS Tools that store the sensor data.

- **Convert your existing IMS Tools KB V1.1 or V1.2 repository data sets to the new IMS Tools KB V1.5 repository structure** by performing the following steps:
  1. Convert all IMS Tools KB V1.1 or V1.2 input, output, sensor, and registry data sets to the IMS Tools KB V1.5 repository format by using the IMS Tools KB V1.5 Conversion Utility.
  2. Connect the IMS Tools KB V1.5 server to the IMS Tools KB V1.5 ISPF interface. (The IMS Tools KB server, ISPF interface, and other IMS Tools must all use the IMS Tools KB V1.5 repository. There is no support for a mixture of repository versions.)
  3. The DELETE and RESTORE functions that were disabled in IMS Tools KB V1.3 remain disabled in IMS Tools KB V1.5. If a RECON ID was deleted in
IMS Tools KB V1.1 or V1.2 and you want to restore that RECON ID, you must restore the RECON ID before migrating to IMS Tools KB V1.5.

With this option, your existing IMS Tools KB V1.1 or V1.2 registry, input, output, and sensor data repository data sets are moved to the newly allocated IMS Tools KB V1.5 repository data sets.

The catalog repository must be allocated and built during the migration process.

**Related concepts:**

- "Required configuration checklist for an existing IMS Tools KB installation (migration)"
- "Guidelines for repository data set resizing (migration)" on page 20
- "Adding the repositories (migration)" on page 31

After defining repositories, you must add the repositories to the Tools Base IMS Tools Knowledge Base server.

---

**Required configuration checklist for an existing IMS Tools KB installation (migration)**

The following checklist is appropriate for upgrading an existing Tools Base IMS Tools Knowledge Base installation.

With these tasks you can increase the size of existing Input, Output, and Sensor Data repositories. You can also allocate required repositories that do not currently exist.

**Important:** Use the required configuration checklist in this section to install Tools Base IMS Tools Knowledge Base V1.5. It is essential that you perform all tasks in the checklist in the correct order.

<table>
<thead>
<tr>
<th>Task</th>
<th>Task Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task 1</td>
<td>Back up all current repository data sets before proceeding with this migration procedure.</td>
</tr>
<tr>
<td>Task 2</td>
<td>Determine the need to resize the Input repository.</td>
</tr>
<tr>
<td></td>
<td>1. Review the additional space requirements for the Input repository</td>
</tr>
<tr>
<td></td>
<td>The Input repository must support RECON IDs, IMS RECON and other library data set names, Discovery Utility objects, policies, rules, directory entries, and notification lists information.</td>
</tr>
<tr>
<td></td>
<td>Changing the allocation requires that you stop the old repository.</td>
</tr>
<tr>
<td></td>
<td>&quot;Guidelines for Input repository size&quot; on page 20</td>
</tr>
<tr>
<td></td>
<td>2. Resize the Input repository if necessary.</td>
</tr>
<tr>
<td></td>
<td>&quot;Resizing repository data sets&quot; on page 88</td>
</tr>
</tbody>
</table>
Table 1. Checklist for existing IMS Tools KB installation (migration) (continued)

<table>
<thead>
<tr>
<th>Task</th>
<th>Task Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task 3</td>
<td>Determine the need to resize the Output repository.</td>
</tr>
<tr>
<td></td>
<td>1. Review the additional space requirements for the Output repository.</td>
</tr>
<tr>
<td></td>
<td>The Output repository must support any new reports being added during this installation.</td>
</tr>
<tr>
<td></td>
<td>Changing the allocation requires that you stop the old repository.</td>
</tr>
<tr>
<td></td>
<td>“Guidelines for Output (report) repository size” on page 22</td>
</tr>
<tr>
<td></td>
<td>2. Resize the Output repository if necessary</td>
</tr>
<tr>
<td></td>
<td>“Resizing repository data sets” on page 88</td>
</tr>
<tr>
<td>Task 4</td>
<td>Determine the need to resize or create the Sensor Data repository</td>
</tr>
<tr>
<td></td>
<td>1. Review the space requirements for the Sensor Data repository</td>
</tr>
<tr>
<td></td>
<td>The Sensor Data repository is used to store database statistics information.</td>
</tr>
<tr>
<td></td>
<td>“Guidelines for Sensor Data repository size” on page 23</td>
</tr>
<tr>
<td></td>
<td>2. Determine whether there is a current Sensor Data repository:</td>
</tr>
<tr>
<td></td>
<td>• Yes: Resize the Sensor Data repository. For more information, see “Resizing repository data sets” on page 88.</td>
</tr>
<tr>
<td></td>
<td>• No: Define (allocate) the new Sensor Data repository data set.</td>
</tr>
<tr>
<td></td>
<td>a. Modify the parameter values in member HKTDFREP appropriately.</td>
</tr>
<tr>
<td></td>
<td>b. Run ALLOCAT2 job step in member HKTDFREP.</td>
</tr>
<tr>
<td>Task 5</td>
<td>Create the new Autonomics Director repository.</td>
</tr>
<tr>
<td></td>
<td>1. Review the space requirements for the Autonomics Director repository</td>
</tr>
<tr>
<td></td>
<td>The Autonomics Director repository is used to store Autonomics Director information.</td>
</tr>
<tr>
<td></td>
<td>“Guidelines for Autonomics Director repository size” on page 22</td>
</tr>
<tr>
<td></td>
<td>2. Define (allocate) the new Autonomics Director repository data set</td>
</tr>
<tr>
<td></td>
<td>For more information, see the Defining (allocating) repository data sets topic in the <em>IBM Tools Base for z/OS Configuration for IMS</em> documentation.</td>
</tr>
<tr>
<td>Task 6</td>
<td>Migrate the existing IMS Tools KB V1.1 or V1.2 Input, Output, Sensor, and Registry data sets to the V1.5 format.</td>
</tr>
<tr>
<td></td>
<td>“Converting Tools Base IMS Tools Knowledge Base V1.1 or V1.2 repository data sets to V1.5” on page 28</td>
</tr>
<tr>
<td>Task 7</td>
<td>Define IMS Tools KB to the operating system.</td>
</tr>
<tr>
<td></td>
<td>For more information, see the Defining IMS Tools KB to the operating system topic in the <em>IBM Tools Base for z/OS Configuration for IMS</em> documentation.</td>
</tr>
<tr>
<td>Task 8</td>
<td>Customize IMS Tools KB server configuration parameters.</td>
</tr>
<tr>
<td></td>
<td>For more information, see the Customizing IMS Tools KB server configuration parameters topic in the <em>IBM Tools Base for z/OS Configuration for IMS</em> documentation.</td>
</tr>
<tr>
<td>Task 9</td>
<td>Start and stop the master IMS Tools KB server.</td>
</tr>
<tr>
<td></td>
<td>For more information, see the Starting and stopping the master IMS Tools KB server topic in the <em>IBM Tools Base for z/OS Configuration for IMS</em> documentation.</td>
</tr>
<tr>
<td>Task 10</td>
<td>Add the repositories to the IMS Tools KB server (migration).</td>
</tr>
<tr>
<td></td>
<td>“Adding the repositories (migration)” on page 31</td>
</tr>
</tbody>
</table>
Table 1. Checklist for existing IMS Tools KB installation (migration) (continued)

<table>
<thead>
<tr>
<th>Task</th>
<th>Task Description</th>
</tr>
</thead>
</table>
| Task 11 | Add the Autonomics Director repository to the IMS Tools KB server (migration).  
  "Adding the Autonomics Director repository (migration)" on page 32 |
| Task 12 | Start the report service user interface and validate resources.  
  Perform this task to validate the installation and the correct functioning of the major product components, regardless of report repository usage.  
  1. Start the IMS Tools KB report service user interface  
    "Starting the report service user interface" on page 32  
  2. Use the Administration > List Repositories drop-down menu of the IMS Tools KB report service user interface to confirm that the Sensor Data repository has been created.  
  3. Use the Administration > List Recon Information drop-down menu of the IMS Tools KB report service user interface to confirm that all RECON IDs defined earlier are still present. |
| Task 13 | Modify SAF security (optional).  
  You are now adding policy and sensor services to an existing Tools Base IMS Tools Knowledge Base installation. Review the security requirements for the new repository and new repository roles.  
  For more information, see the Configuring SAF security topic in the IBM Tools Base for z/OS Configuration for IMS documentation. |

Guidelines for repository data set resizing (migration)

This topic provides guidelines for determining appropriate resizing for the repositories.

In this topic:
- "Guidelines for Input repository size"
- "Guidelines for Output (report) repository size" on page 22
- "Guidelines for Autonomics Director repository size" on page 22
- "Guidelines for Sensor Data repository size" on page 23

Guidelines for Input repository size

RECON IDs, IMS RECON and other library data set names, Discovery Utility objects, policies, rules, and notification lists data are stored in the IMS Tools KB Input repository. The allocation for the input data set must be large enough to hold the initial set of polices, rules and notification lists that are used for the Policy Services system.

The RECON ID definition is stored in the IMS Tools KB Input repository. The RECON ID definition includes the IMS RECON data set name and can also contain other IMS data set names, for example DBD, PSB, and ACB. The allocation for the input repository must be large enough to hold this data.

Data component (RMD)
The RMD (data component) for the Input repository requires approximately 1
cylinder for RECON information and 3 cylinders for initial Policy Services usage.

The RMD (data component) for Discovery Utility uses approximately twenty
cylinders per 2,000 DB or DBRC groups.

The following table shows the recommended space requirements for the data types
used by Policy Services:

<table>
<thead>
<tr>
<th>Data Type</th>
<th>Number of Cylinders</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMS Tools KB RECON ID definition requirements</td>
<td>1</td>
</tr>
<tr>
<td>Space requirement for Policy Services</td>
<td>1</td>
</tr>
<tr>
<td>Set of policies and rules for each IMS Tools product</td>
<td>1</td>
</tr>
<tr>
<td>Notification lists</td>
<td>1</td>
</tr>
<tr>
<td>Locale-specific data for each IMS Tools product and locale</td>
<td>1</td>
</tr>
</tbody>
</table>

The following formula can help you calculate your minimum allocation space
requirements for the initial installation:

1 cylinder for IMS Tools KB RECON ID requirements +
1 cylinder for Policy Services requirements +
1 cylinder x number of IMS Tool products using Policy Services +
1 cylinder for notification lists +
1 cylinder x number of locales x number of IMS Tools using Policy Services

= Total number of cylinders for the RMD

In the following example for IMS Database Reorganization Expert, there are 4
locales to be considered:

1 cylinder (IMS Tools KB RECON ID) = 1
1 cylinder for Policy Services requirements = 1
1 cylinder x 1 product = 1
1 cylinder for notification lists = 1
1 cylinder x 4 locales x 1 product = 4

Total = 8 cylinders

In addition you might need to create new maintenance environments to do
customization tasks such as adding, coping, and modifying policies, creating new
rule thresholds, or applying IBM-supplied maintenance. For each new maintenance
environment, you must increase the allocation by multiplying the initial installation
requirements by the number of maintenance environment you might create over
time.

For example, to create three maintenance environments, the initial allocation
should be 25 cylinders:

1 RECON + (3 environments x 8 cylinders)

Index component (RID)

The RID (index component) for the Input repository uses 2,880 Policy Services
information units (policies, rules, notification lists) per cylinder.
Guidelines for Output (report) repository size

IMS Tools product report data is stored in the IMS Tools KB Output repository.

Data component (RMD)

The RMD (data component) for the Output repository uses approximately 1 cylinder per 10K lines of reports.

The number of lines per cylinder is compression ratio dependent, which means that the value depends on the compression achieved for the reports that you store. The space requirement is also affected by the reorganization state of the data sets. The number might range from 7,400 to 11,700 lines per cylinder. You should monitor space usage as you add reports to the Output repository.

The amount of space required for your installation depends on the following conditions:

- Whether you achieve the same rate of compression for the types of reports that you keep
- The size and number of reports that you store
- Whether you reclaim abandoned space by reorganizing the data sets in a timely manner

Consider the following when estimating the Output repository size:

1. The estimated number of lines of reports that you plan to store
2. How long you plan to store each report
3. Double the values of items #1 and #2 to allow for growth

Index component (RID)

The RID (index component) for the Output repository uses one cylinder per 2,880 reports.

Guidelines for Autonomics Director repository size

Autonomics Director data is stored in the IMS Tools KB Autonomics Director repository.

Data component (RMD)

The size of the RMD (data component) for the Autonomics Director repository varies depending on the number of databases, groups, and stored evaluations.

The following formula can help you calculate your minimum allocation space requirements for the initial installation:

Data component size (KB) = 100 + (NumMon + NumGrp) + (NumMon x NumEval) + (NumGrp x 128)

Where:

NumMon
  Number of monitored databases, areas, or partitions
NumEval
Number of evaluations to keep for a monitored databases, areas, or partitions

NumGrp
Number of groups

Convert them to cylinders and use cylinder allocations.

Index component (RID)

The size of the RID (index component) for the Autonomics Director repository varies depending on the number of databases and groups.

The following formula can help you calculate your minimum allocation space requirements for the initial installation:
Index component size (KB) = 10 + (NumMon + NumGrp)

Where:
NumMon
Number of monitored databases, areas, or partitions

NumGrp
Number of groups

Convert them to cylinders and use cylinder allocations.

Sample RMD and RID calculations for Autonomics Director

In the following example, there are 2000 monitored databases, 500 DBRC groups, and 10 evaluations kept for each database:
NumMon = 2000, NumGrp = 500, NumEval = 10

The Autonomics Director repository calculation is:
Index (KB) = 2000 + 500 = 2500 KB
Data (KB) = 100 + (2000 + 500) + (2000 * 10) = 22600 KB

Round them up: index to 512 KB multiple, data to MB multiple:
Index component size (KB) = 3 MB
Data component size (KB) = 23 MB

Guidelines for Sensor Data repository size

Sensor data is stored in the Tools Base IMS Tools Knowledge Base Sensor Data repository.

The sensor data store output data set varies in size depending on the number of IMS data sets that are monitored and the frequency of the monitoring.

A recommended approach is to allocate a minimum of five cylinders for the sensor data store output data set.

Data component (RMD)

The RMD (data component) for the Sensor Data repository uses approximately 1 cylinder per 90 sets of database statistics.
Index component (RID)

The RID (index component) for the Sensor Data repository uses 1 cylinder per 2,880 data elements.

Repository data set status types

The status of each repository data set is maintained in the Catalog repository and is set when a repository is opened.

The repository data set status types are:

COPY1
This is the primary repository index data set (RID) and repository member data set (RMD). This data set pair is the first to be updated during the two-phase update process.

COPY2
This is the secondary or backup RID and RMD.

SPARE
This is an empty data set that is used in the event of a write failure on either COPY1 or COPY2.

In the event of failure, the valid data set pair is copied to the SPARE data set pair and the failed copy is marked as discarded. This reduces the potential for a repository outage due to data set error, for example an out-of-space condition. The SPARE data set pair is available to replace either COPY1 or COPY2 in the event of a repository write failure.

Restriction: The Catalog repository does not support the SPARE data set.

• Two data set pairs can be designated as SPARE on a temporary basis during recovery. For example, this might occur if there is a problem with one of the data set definitions that the Service Repository is attempting to recover to. The recovery process will reestablish the second valid copy after any data set problems are corrected.

• To designate a repository data set as SPARE, it must be empty. If the repository data set pair is not empty, it is discarded when the data sets are opened.

• Data sets associated with a SPARE repository data set pair are allocated to the server when the user repository is opened.

DISCARD
This is the discarded data set.

The data sets associated with a DISCARD recovery data set pair are not allocated to the server and can be redefined by an administrator. After the data sets are redefined, the recovery data set pair can be changed dynamically (while the user repository is open) from DISCARD to SPARE by using the DSCHANGE batch command. After being changed to SPARE, the repository data set is allocated and if it passes validation, assigned to SPARE status.

NONE
This is the undefined data set.

When a repository is created, the first pair is designated COPY1, the second pair is designated as COPY2, and if a third repository is defined, it is designated as SPARE.
The Service Repository performs basic validation of repository data sets when they are opened. A repository cannot be opened unless there is a valid COPY1 and COPY2 repository data set. If there is one valid copy repository data set and a valid SPARE repository data set, automated recovery will occur. During the recovery process, the SPARE repository data set is reassigned to take the place of the missing COPY1 or COPY2, and its data sets are populated from the valid copy.

The status of a repository data set pair is not static and can change, as shown in the following example:

1. A repository is added, with the third repository data set undefined:
   - RDS1 Status . . . . : COPY1
   - RDS2 Status . . . . : COPY2
   - RDS3 Status . . . . : NONE

2. The ISPF administrator issues the UPDATE command to define a third repository data set:
   - RDS1 Status . . . . : COPY1
   - RDS2 Status . . . . : COPY2
   - RDS3 Status . . . . : SPARE

   For more information on the ISPF administrator UPDATE command, see "Changing the repository specification" on page 77.

3. After a write failure occurs, the server discards the first repository data set (RDS1) and the third repository data set (RDS3) becomes the new COPY1:
   - RDS1 Status . . . . : DISCARD
   - RDS2 Status . . . . : COPY2
   - RDS3 Status . . . . : COPY1

4. The ISPF administrator issues the DSCHANGE command to change the state of the first repository data set (RDS1) to SPARE:
   - RDS1 Status . . . . : SPARE
   - RDS2 Status . . . . : COPY2
   - RDS3 Status . . . . : COPY1

   The DSCHANGE command can be issued by either the ISPF administrator or from the MVS™ Console.

If the server identifies a repository data set pair as having lost database integrity, it is discarded. If a COPY1 or COPY2 repository data set pair is discarded due to write error, the repository is stopped to enable recovery. The repository server automatically drives recovery if a SPARE repository data set pair is available. If a SPARE repository data set pair is not available, the repository is stopped and the ISPF administrator must restart the user repository.

When a user repository is stopped, an administrator can discard a COPY1 or COPY2 repository data set pair. However, an administrator cannot discard the final COPY1 or COPY2 repository data set.

The Service Repository writes to the repository in two steps:
1. The COPY1 RID and RMD data sets are updated. At the crossover point, the change is considered complete. A successful return code is sent to the requesting client.
2. The same updates from step 1 are written to the COPY2 RID and RMD data sets. The syncpoint is complete.

If the repository server fails during update step 1, the server performs the following recovery process:
1. The request in progress fails with an error.
2. The repository becomes unavailable and any client connection exits are driven with the “Repository unavailable” flag set.
3. The server verifies that all recovery conditions are met, including whether a valid spare data set pair is available. Recovery processing is started:
   a. Any client connection exits are driven with the “Repository recovery started” flag set.
   b. When recovery processing is complete, data is copied from the COPY2 to the SPARE data set pair and the status of the SPARE data set pair is changed to COPY1. The repository becomes available, and any client connection exits are driven with the “Repository recovery ended successfully” flag set.
   c. If an error occurs during recovery processing, any client connection exits are driven with the “Repository recovery error” flag set.

If the repository server fails during update step 2, the server performs the same tasks, except that data is copied from the COPY1 to the SPARE data set pair and the status of the SPARE data set pair is changed to COPY2. Because step 1 was complete, the request in progress is considered complete. A successful return code is sent to the caller of the request that drove the syncpoint process.

**Important:** For automated recovery to occur, either the primary RID and RMD or the secondary RID and RMD must be valid and a SPARE RDS pair must be available.

**Opening the repository**

You can control when a repository is opened by using the AUTOOPEN option in the repository definition and the OPEN option on the START batch command.

- If the repository is set to auto-open on, its data sets are allocated and opened when it starts. If the repository was in the started state when the server last shut down, the data sets will be allocated and opened when the server is restarted.
- If the repository is set with auto-open off and it is started with OPEN=YES, it will be opened immediately.
- If the repository is set with auto-open off and it is not started with OPEN=YES, it will be opened at the time of the first client connection.

Service Repository performs basic validation of repository data sets at open time. A user repository cannot be opened unless there is both a valid COPY1 and COPY2 RDS. If there is one valid copy and a valid SPARE RDS, recovery will automatically occur. In the recovery process, the SPARE RDS is reassigned to take the place of the missing COPY1 or COPY2, and its data sets are populated from the valid copy.

At the conclusion of data set validation:

- The available repository data sets are allocated and open.
- Empty data sets are identified.
- All data sets have valid characteristics for their identified function (RID or RMD).
- Populated data sets are considered to be valid Service Repository RDSs.
- The repository’s set of data sets is known to be consistent.
If any data set fails to meet these basic requirements an individual error message is issued and the repository open process terminates.

Service Repository will only close a repository when the repository is stopped or the server is shut down.

**Service Repository syncpoint process flow**

To ensure data integrity without the need for external logging, Service Repository uses a duplex pair of data sets: the primary RID and RMD (COPY1) and the secondary RID and RMD (COPY2). This duplexing enables the server to always recover data sets to the last complete and verified write.

The Service Repository writes to the repository in two steps:
1. The COPY1 RID and RMD data sets are updated. At the crossover point, the change is considered complete. A successful return code is sent to the requesting client.
2. The same updates from step 1 are written to the COPY2 RID and RMD data sets. The syncpoint is complete.

If the repository server fails during update step 1, the server performs the following recovery process:
1. The request in progress fails with an error.
2. The repository becomes unavailable and any client connection exits are driven with the “Repository unavailable” flag set.
3. The server verifies that all recovery conditions are met, including whether a valid spare data set pair is available. Recovery processing is started:
   a. Any client connection exits are driven with the “Repository recovery started” flag set.
   b. When recovery processing is complete, data is copied from the COPY2 to the SPARE data set pair and the status of the SPARE data set pair is changed to COPY1. The repository becomes available, and any client connection exits are driven with the “Repository recovery ended successfully” flag set.
   c. If an error occurs during recovery processing, any client connection exits are driven with the “Repository recovery error” flag set.

If the repository server fails during update step 2, the server performs the same tasks, except that data is copied from the COPY1 to the SPARE data set pair and the status of the SPARE data set pair is changed to COPY2. Because step 1 was complete, the request in progress is considered complete. A successful return code is sent to the caller of the request that drove the syncpoint process.

**Important:** For automated recovery to occur, either the primary RID and RMD or the secondary RID and RMD must be valid and a SPARE RDS pair must be available.

---

**Defining (allocating) the Autonomics Director repository (migration)**

The following procedure is appropriate for adding Autonomics Director services to the Tools Base IMS Tools Knowledge Base environment.
Each repository is implemented by two pairs of data sets: a primary data set and a secondary data set. The primary data sets service the data requests and the secondary data sets are used for recovery.

Each data set pair is comprised of a repository index data set (RID) and a repository member data set (RMD).

You must customize the cluster definitions for your installation by changing the data set names and the allocation parameters. The primary and secondary cluster definitions should be identical except for the volume where they are allocated.

It is strongly suggested that the primary and secondary clusters be allocated on different volumes in the event of a device failure. All repository cluster definitions must specify the REUSE option.

**Defining the Autonomics Director repository**

This procedure allocates the new Autonomics Director repository.

This procedure refers to sample members of the *hlq*.SHKTSAMP library file. (Substitute the *hlq* variable with the installation data set high level qualifier.)

Copy the appropriate members to your own data sets and customize the parameters to conform to your standards and environment. Most sample members contain descriptive customization information.

To define the primary and secondary VSAM clusters for the Autonomics Director repository, complete the following procedure:

1. Customize the Autonomics Director repository VSAM cluster definitions by modifying your copy of member HKTDFREP.
2. Define the new Autonomics Director repository by running the ALLOCAT3 job step in member HKTDFREP, and ensure that the job completes with a return code=0.

**Converting Tools Base IMS Tools Knowledge Base V1.1 or V1.2 repository data sets to V1.5**

Use the IMS Tools KB V1.5 Conversion Utility to convert the IMS Tools KB V1.1 and V1.2 input, output, sensor, and registry data sets to V1.5.

**Before you begin**

**Important:** You must connect the IMS Tools KB V1.5 user interface and the Policy Services V1.5 ISPF user interface to the IMS Tools KB V1.5 server. A mixture of versions between IMS Tools KB V1.5 server, the IMS Tools KB ISPF user interface, and other IMS Tools, are not supported. For more information, see “Connections that are supported by the IMS Tools KB server” on page 30.

After your repository is migrated to be supported by the IMS Tools KB V1.5 server, all IMS Tools that use the IMS Tools Knowledge Base repository at any version are supported.
About this task

IMS Tools KB V1.5 includes an expansion of the INDEX record (RID) to include the architecture level of the index record and the size of the member in compressed form. Also included is a change in the way the RMD record segments are chained together. In IMS Tools KB V1.1 and V1.2, the record segments were chained in order, with enough segments to contain all of the data for a member. With IMS Tools KB V1.5, the record segments are chained together in groups with a new key generated for each group of segments.

Procedure

1. Using IDCAMS, copy any Input, Output, Sensor, and Registry repository data sets that you currently have. This copy is used as a backup.
2. Allocate currently existing repository data sets with new names and any new repository data sets that will exist in your new environment. Allocate with any new sizing requirements as well.
   
   You can also allocate any new repository data sets that do not exist in your current repository, or you can delay those allocations for a later step. The following is a list of all potential repository data sets for allocation:
   
   - Catalog (required)
   - Registry (required)
   - Input (required)
   - Output (required for report output)
   - Sensor (required for IMS Tools that store Sensor data)
   - Autonomics Director (required if using the Autonomics Director)

   You can copy and modify steps from either of the following sample members of the hlq.SHKTSAMP library file. Substitute the hlq variable with the installation data set high level qualifier.

   **HKTMGREP**
   
   Includes the delete, define, or allocation and the conversion sample steps

   **HKTDFREP**
   
   Includes delete, define, or allocation, but does not contain the conversion sample steps

3. Convert the data sets that exist in your system by running the Conversion Utility.
   
   You must copy and run this step for each of the repository data set that exist in your current repository, except do not convert the Catalog repository data set.

Example

The following is a modified sample member HKTMGREP for converting the input repository.

```bash
//P12CONV JOB MSGCLASS=H,MSGLEVEL=(1,1),REGION=0M,NOTIFY=&SYSUID
//*********************************************************************
//* R1XXXX DD IS FOR FPQ V1.1 OR FPQ V1.2
//* R2XXXX DD IS FOR FPQ V1.5
//*********************************************************************
/* CHANGE hlq1 TO THE HIGH LEVEL QUALIFIER FOR YOUR INSTALLATION
/* IMS TOOL KNOWLEDGE BASE V1.5
/* CHANGE hlq2 TO THE HIGH LEVEL QUALIFIER FOR YOUR INSTALLATION
/* IMS TOOL KNOWLEDGE BASE V1.1/V1.2 REPOSITORY DATA SETS
```
/* THE SOURCE */
/* */
/* CHANGE hlq3 TO THE HIGH LEVEL QUALIFIER FOR YOUR INSTALLATION */
/* */
/* IMS TOOL KNOWLEDGE BASE V1.5 REPOSITORY DATA SETS */
/* */
/* THE TARGET */
/* */
/* CONTROL STATEMENT IS: */
/* CONVERT SOURCE=R1,TARGET=R2 */
/* WHERE:whr1 IDENTIFIES THE FIRST */
/* CONVERT - THE CONTROL STATEMENT */
/* SOURCE= - USED TO IDENTIFY THE SOURCE INPUT DD STATEMENT */
/* TARGET= - USED TO IDENTIFY THE TARGET OUTPUT DD STATEMENT */
/* */
/* R1 - IDENTIFIES THE FIRST TWO CHARACTERS OF THE */
/* INPUT (SOURCE) DD STATEMENT. */
/* */
/* R2 - IDENTIFIES THE FIRST TWO CHARACTERS OF THE */
/* OUTPUT (TARGET) DD STATEMENT. */
/* */
/*************************************************************/
CONVERT EXEC PGM=HKTCNV2
//STEPLIB DD DSN=hlq1.SHKTLOAD,DISP=SHR
//SYSPRINT DD SYSOUT=* 
//REPPRINT DD SYSOUT=* 
//R1PRMD DD DSN=hlq2.INPUT.PRMD,DISP=SHR
//R1PRID DD DSN=hlq2.INPUT.PRID,DISP=SHR
//R2PRMD DD DSN=hlq3.INPUT.PRMD,DISP=SHR
//R2PRID DD DSN=hlq3.INPUT.PRID,DISP=SHR
//SYSUDUMP DD SYSOUT=* 
//SYSSN DD *
CONVERT SOURCE=R1,TARGET=R2
/* */
/* REPRO EXEC PGM=IDCAMS */
/* SYSPRINT DD SYSOUT=* 
*/
//R2PRID DD DISP=SHR,DSN=hlq3.INPUT.PRID
//R2PRMD DD DISP=SHR,DSN=hlq3.INPUT.PRMD
//R2SRID DD DISP=SHR,DSN=hlq3.INPUT.SRID
//R2SRMD DD DISP=SHR,DSN=hlq3.INPUT.SRMD
//SYSIN DD *
/* */
/* REPRO INFILE(R2PRID) OUTFILE(R2SRID) */
/* REPRO INFILE(R2PRMD) OUTFILE(R2SRMD) */
/* */
/* */

Connections that are supported by the IMS Tools KB server

Each version of the IMS Tools KB server provides support for connections with some version of the IMS Tools KB ISPF user interface and the IMS Tools Policy Services ISPF user interface.

The following table shows the connections that are supported by the IMS Tools KB server.

Table 3. Connections supported by the IMS Tools KB server

<table>
<thead>
<tr>
<th>IMS Tools KB V1.1 server</th>
<th>IMS Tools KB V1.2 server</th>
<th>IMS Tools KB V1.3 server</th>
<th>IMS Tools KB V1.4 server</th>
<th>IMS Tools KB V1.5 server</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMS Tools KB V1.1 ISPF user interface</td>
<td>Supported</td>
<td>Supported</td>
<td>Not supported</td>
<td>Not supported</td>
</tr>
</tbody>
</table>
Table 3. Connections supported by the IMS Tools KB server (continued)

<table>
<thead>
<tr>
<th>IMS Tools KB V1.1 server</th>
<th>IMS Tools KB V1.2 server</th>
<th>IMS Tools KB V1.3 server</th>
<th>IMS Tools KB V1.4 server</th>
<th>IMS Tools KB V1.5 server</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMS Tools KB V1.2 ISPF user interface</td>
<td>Supported</td>
<td>Supported</td>
<td>Not supported</td>
<td>Not supported</td>
</tr>
<tr>
<td>IMS Tools KB V1.3 ISPF user interface</td>
<td>Not supported</td>
<td>Not supported</td>
<td>Supported</td>
<td>Supported</td>
</tr>
<tr>
<td>IMS Tools KB V1.4 ISPF user interface</td>
<td>Not supported</td>
<td>Not supported</td>
<td>Supported</td>
<td>Supported</td>
</tr>
<tr>
<td>IMS Tools KB V1.5 ISPF user interface</td>
<td>Not supported</td>
<td>Not supported</td>
<td>Supported</td>
<td>Supported</td>
</tr>
<tr>
<td>IMS Tools Policy Services V1.1 ISPF user interface</td>
<td>Supported</td>
<td>Supported</td>
<td>Not supported</td>
<td>Not supported</td>
</tr>
<tr>
<td>IMS Tools Policy Services V1.2 ISPF user interface</td>
<td>Supported</td>
<td>Supported</td>
<td>Not supported</td>
<td>Not supported</td>
</tr>
<tr>
<td>IMS Tools Policy Services V1.3 ISPF user interface</td>
<td>Not supported</td>
<td>Not supported</td>
<td>Supported</td>
<td>Supported</td>
</tr>
<tr>
<td>IMS Tools Policy Services V1.4 ISPF user interface</td>
<td>Not supported</td>
<td>Not supported</td>
<td>Supported</td>
<td>Supported</td>
</tr>
<tr>
<td>IMS Tools Policy Services V1.5 ISPF user interface</td>
<td>Not supported</td>
<td>Not supported</td>
<td>Supported</td>
<td>Supported</td>
</tr>
</tbody>
</table>

Adding the repositories (migration)

After defining repositories, you must add the repositories to the Tools Base IMS Tools Knowledge Base server.

This procedure adds the repositories to the IMS Tools KB server Catalog repository.

The add statement associates the repositories with the VSAM cluster data set names.
Adding the repositories to an existing product installation

The following procedure is appropriate for adding the migrated repositories to the Tools Base IMS Tools Knowledge Base installation for migration.

This procedure refers to sample members of the hlq.SHKTSAMP library file. (Substitute the hlq variable with the installation data set high level qualifier.)

Copy the appropriate members to your own data sets and customize the parameters to conform to your standards and environment. Most sample members contain descriptive customization information.

Note:
1. Modify member HKTADREP by following the commented instructions included in the member.
2. Add the migrated repositories by running the required ADREP1 and ADREP2 job steps in member HKTADREP, and ensure that the jobs complete with a return code=0.

Adding the Autonomics Director repository (migration)

After defining repositories, you must add the Autonomics Director repository to the Tools Base IMS Tools Knowledge Base server.

This procedure adds the Autonomics Director repository to the IMS Tools KB server Catalog repository.

The add statement associates the Autonomics Director repository with the VSAM cluster data set names.

Adding the Autonomics Director repository to an existing product installation

The following procedure is appropriate for adding the new Autonomics Director repository to an existing IMS Tools KB installation.

This procedure refers to sample members of the hlq.SHKTSAMP library file. (Substitute the hlq variable with the installation data set high level qualifier.)

Copy the appropriate members to your own data sets and customize the parameters to conform to your standards and environment. Most sample members contain descriptive customization information.

Note:
1. Modify member HKTADREP by following the commented instructions included in the member.
2. Add the new Autonomics Director repository by running only the ADREP3 job step in member HKTADREP, and ensure that the job completes with a return code=0.

Starting the report service user interface

The interactive report service user interface has extensive and flexible search capabilities that can quickly locate the reports you need and then display them from anywhere in the sysplex environment.
**Procedure**

To activate the report service user interface for Tools Base IMS Tools Knowledge Base:

1. From the ISPF Primary Option Menu panel, select option 6 (Command).
   The ISPF Command Shell is displayed.

2. Invoke the IMS Tools Knowledge Base client interface by using one of the following methods:
   - To access IMS Tools Knowledge Base from the Tools Base for z/OS main menu, enter the following command:
     
     ```
     EX 'hlq.SHKTCEXE(HKTAPPL)' 'HLQ(hlq)'
     ```
     The Tools Base for z/OS main menu appears. Select **option 1 IMS Tools Knowledge Base** and press Enter.
   - To access Tools Base IMS Tools Knowledge Base directly, enter the following command:
     
     ```
     EX 'hlq.SHKTCEXE(HKTZPRIM)' 'HLQ(hlq)'
     ```
     Substitute the `hlq` variable with the installation data set high level qualifier.
     The IMS Tools Knowledge Base main menu appears.

3. In the IMS Tools KB panel, specify the **Knowledge Base Server Name**.

4. Specify **N** for **History**.
   The Server Base and History values are preserved in your user profile and are automatically set during future access of this panel.

5. From the **Administration** menu actions, select option 3 (**List Repositories**).
   Press Enter.

   **Administration Help**
   
   3 1. List Deferred Reports
      2. List Installed Products
      3. List Repositories
      4. List Recon Information
      5. Set retention for sensor data

   **Figure 5. Administration menu actions**

   The Repositories panel is displayed.
   The repositories you defined are displayed with their current state (Stopped state is Y or N).
   Make sure none of the repositories are stopped.
   If a repository is stopped, it can be started from the Repository list display. If a start fails, check the server job log for messages that indicate the problem.
Chapter 4. Registering products and reports

You use the product administration utility to register IMS Tools products, user products, and reports in the Tools Base IMS Tools Knowledge Base information management environment.

Topics:
- “Enabling IMS Tools products”
- “Registering IMS Tools products” on page 36
- “Registering user-defined reports” on page 45
- “Registering user products” on page 43
- “Listing registered products and reports” on page 47
- “Example: HKTADMIN JOB” on page 50

Enabling IMS Tools products

Tools Base IMS Tools Knowledge Base provides an information management environment for IMS Tools products and other user products.

To participate in this environment, IMS Tools and user products must meet the following conditions:

- The IMS tool must be enabled at the code level for participation in the Tools Base IMS Tools Knowledge Base environment.

Always refer to the appropriate product information and description for any IMS Tools product to determine if the tool is enabled for operation with Tools Base IMS Tools Knowledge Base and what release or maintenance level is required.

IMS Tools that can store reports in IMS Tools KB include (but are not limited to) the following products:

- IMS Buffer Pool Analyzer
- IMS Fast Path Solution Pack
- IMS Recovery Solution Pack
- IMS Database Recovery Facility
- IMS Database Reorganization Expert
- IMS High Performance Change Accumulation Utility
- IMS High Performance Image Copy
- IMS High Performance Load
- IMS High Performance Pointer Checker
- IMS High Performance Prefix Resolution
- IMS High Performance Unload
- IMS Index Builder
- IMS Performance Analyzer
- IMS Recovery Expert for z/OS

- The product must be registered with the Tools Base IMS Tools Knowledge Base server and repository.
You use the product administration utility to perform product and report registration tasks. The program name for the product administration utility is HKTAPRA0, which is executed by member/job HKTADMIN.

Registering IMS Tools products

To automatically record reports in the Tools Base IMS Tools Knowledge Base repository, each enabled IMS Tools product and its reports must be registered with the Tools Base IMS Tools Knowledge Base server and repository.

You use the product administration utility to register products and reports. The program name for the product administration utility is HKTAPRA0, which is executed by member/job HKTADMIN.

Topics:

- “Registering IMS Tools products overview”
- “Registering IMS Tools products by using the definition table of the product” on page 37
- “Registering IMS Tools products by using the default definition table” on page 40

Registering IMS Tools products overview

To automatically record reports in the Tools Base IMS Tools Knowledge Base repository, each enabled IMS Tools product must be registered with the Tools Base IMS Tools Knowledge Base server and repository during the installation of the IMS Tools product.

The registration process makes the IMS Tools product and all its reports known to the Tools Base IMS Tools Knowledge Base server by providing information to the server about the product and its reports. Before reports can be managed by the repository, report entries must be associated with a registered product.

After a product is registered to the repository, its reports can be stored in and retrieved from the repository. The registration process also sets default retention values for the reports that are generated by that product.

Before registering an IMS Tools product, check to see whether the product has a definition table, and use that definition table to register the product. If the product does not have a definition table, use the Tools Base IMS Tools Knowledge Base default definition table to register the product.

To register a non-IMS Tools product and its reports, see “Registering user products” on page 43.

Product administration utility

Tools Base IMS Tools Knowledge Base provides a product administration utility to register products and their reports. The program name for the product administration utility is HKTAPRA0, which is executed by member/job HKTADMIN.

The product administration utility is a batch program that performs the registration process by using either a supplied table (for IMS Tools products) or user-specified parameters (for user products and reports).
The utility has two main functions:

- Building repository registry entries for products and their reports
- Listing reports by product

The product administration utility assigns 2-character identifiers to products and to a product's reports. Long and short text names are associated with these IDs. Tools Base IMS Tools Knowledge Base relies on product ID and report ID definitions when writing reports to the repository.

Related concepts:

“Registering IMS Tools products by using the definition table of the product”
Use the ADDPROD command of the product administration utility (HKTAPRA0) to register an IMS Tools product and its report information with Tools Base IMS Tools Knowledge Base.

“Registering IMS Tools products by using the default definition table” on page 40
Use the product administration utility's ADDPROD command to register an IMS Tools product and its report information with Tools Base IMS Tools Knowledge Base. Product information in the form of a default definition table is contained in a load module that is shipped with Tools Base IMS Tools Knowledge Base.

**Registering IMS Tools products by using the definition table of the product**

Use the ADDPROD command of the product administration utility (HKTAPRA0) to register an IMS Tools product and its report information with Tools Base IMS Tools Knowledge Base.

Some IMS Tools products provide product information in a definition table in a load module. If the IMS Tools product does not have a definition table, use the default definition table that is provided by Tools Base IMS Tools Knowledge Base to register the product.

Use this form of the ADDPROD command if instructed to by the IMS Tools product. For a listing of the product IDs, see the individual product documentation at [Information Management Software for z/OS Solutions Information Center](https://www.ibm.com/support/knowledgecenter/)

The first time a product is added, non-release and release-specific information is added to the registry. Subsequent registrations of this product will add information about the new release of the product but will not change the non-release information. If a release is already defined, the release information will be replaced only if the parameter REPLACE=YES.

Report definitions are always attempted. If some reports were registered previously, only the new reports will be added.

To register IMS Tools products, complete the following procedure:

1. Customize the properties for the product by modifying your copy of member HKTADMIN.
   Refer to member HKTADMIN 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 (RC=0).
Syntax diagram for ADDPROD, using the product definition table

The following syntax diagram shows the usage of the ADDPROD command:

```
ADDPROD TABLE=table
  REPLACE=YES|NO
  RETENTION=(ddddd,vvvv)
  REPOSITORY=xxxxxxxx
  HLQ=xxxxx
```

Parameter reference for ADDPROD

The following parameter is provided on the EXEC statement and controls the execution of the job:

Table 4. Parameters for EXEC

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITKBSRVR</td>
<td>The name of the Tools Base IMS Tools Knowledge Base server. The name can be up to 8 characters in length. This parameter is required.</td>
</tr>
</tbody>
</table>

The following parameters are available to customize the product registration. For a listing of the product IDs, see the individual product documentation at Information Management Software for z/OS Solutions Information Center.

Table 5. Parameters for ADDPROD

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TABLE</td>
<td>The name of a load module that is provided by the IMS Tools product. The data set containing the IMS Tools product load module should be concatenated to STEPLIB. This parameter is required.</td>
</tr>
<tr>
<td>REPLACE=YES</td>
<td>NO</td>
</tr>
<tr>
<td>HLQ</td>
<td>High-level qualifier for product execution data sets. This parameter will be used by future functions. This parameter is optional.</td>
</tr>
</tbody>
</table>
Table 5. Parameters for ADDPROD  (continued)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>REPOSITORY</td>
<td>Specifies which Output repository the reports for this product are to be written to. The repository must already be defined and connected. The value is the repository name without the initial O. For example, use 1234567 for a repository name of O1234567. If no value is specified, the standard Output repository will be used (O0000000). The setting REPLACE=YES and the value set for REPOSITORY are mutually exclusive. The value for REPOSITORY cannot be specified with REPLACE=YES.</td>
</tr>
<tr>
<td>RETENTION</td>
<td>Specifies the retention value for the product. This value is applied to all of this product's reports that do not specify retention information. Values are $dddd,vvvvv$ where $dddd$ is a value from 0 to 32767 that specifies the number of days a report must be kept before it can be deleted, and $vvvv$ is a value from 0 to 32767 that specifies the number of versions of the report that must be retained. A report must exceed both of these values before it will be deleted. A setting of 0,0 requests the retention of only the current version of the report; no history version of the report will be retained. If no value is specified, the settings from the product's definition table will be used. The setting REPLACE=YES and the value set for RETENTION are mutually exclusive. The value for RETENTION cannot be specified with REPLACE=YES.</td>
</tr>
</tbody>
</table>

Sample member reference for registering IMS Tools products using the product definition table

The following table specifies the sample members that can be used to register certain IMS Tools products.

Table 6. Sample members for IMS Tools products

<table>
<thead>
<tr>
<th>Product name</th>
<th>Sample member name</th>
<th>Library name</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMS Performance Solution Pack V1.2: IMS Performance Analyzer for z/OS V4.3</td>
<td>IPIDITKB</td>
<td>SIPISAMP</td>
</tr>
<tr>
<td>IMS Recovery Solution Pack V1.1</td>
<td>FRXITKB</td>
<td>SFRXSAMP</td>
</tr>
<tr>
<td>IMS Fast Path Solution Pack V1.3</td>
<td>HFPCITKB</td>
<td>SHFPSAMP</td>
</tr>
<tr>
<td>IMS Buffer Pool Analyzer V1.4</td>
<td>BPLITKB</td>
<td>SBPLSAMP</td>
</tr>
<tr>
<td>IMS Recovery Expert for z/OS V2.1</td>
<td>BSYITKB</td>
<td>SBSYSAMP</td>
</tr>
<tr>
<td>IMS Database Reorganization Expert V4.1</td>
<td>HPSCITKB</td>
<td>SHPSJCL0</td>
</tr>
</tbody>
</table>
**Important:** To register IMS Database Solution Pack with IMS Tools Knowledge Base, use the BBESITK2 table in the SHPSLMD0 load module library. For additional information about registering IMS Database Solution Pack with IMS Tools Knowledge Base, see the *IMS Database Solution Pack: Overview and Customization* documentation.

For more information about registering an IMS Tools product with IMS Tools Knowledge Base, see the individual user's guide of the product.

**Example: Registering an IMS Tools product by using the definition table of the product**

The following example shows a portion of the HKTADMIN JCL that registers an IMS Tools product by using the definition table of the product.

The TABLE parameter specifies the name of the load module for the IMS Tool product that is being registered. The load module contains the external product definition table for this IMS Tool product. The data set containing the load module is concatenated to STEPLIB (in this example, hlq2.toolload).

```
//DREP EXEC PGM=HKTAPRA0,PARM='ITKBSRVR=srvrname'
//STEPLIB DD DISP=SHR,DSN=hlq1.shktload
// DD DISP=SHR,DSN=hlq2.toolload
//SYSPRINT DD SYSOUT=* 
//OUTRPT DD SYSOUT=* 
//SYSIN DD *
ADDPROD TABLE=module REPLACE=YES /*
```

**Registering IMS Tools products by using the default definition table**

Use the product administration utility’s ADDPROD command to register an IMS Tools product and its report information with Tools Base IMS Tools Knowledge Base. Product information in the form of a default definition table is contained in a load module that is shipped with Tools Base IMS Tools Knowledge Base.

**Recommendation:** If the IMS Tools product provides a definition table, use that definition table instead of the Tools Base IMS Tools Knowledge Base default definition table to register the product.

The first time a product is added, non-release and release-specific information is added to the registry. Subsequent registrations of this product will add information about the new release of the product but will not change the non-release information. If a release is already defined, the release information will be replaced only if REPLACE=YES is specified on the ADDPROD command.

Report definitions are always attempted. If some reports were registered previously, only the new reports will be added.

To register IMS Tools products, complete the following procedure:

1. Customize the properties for the product by modifying your copy of member HKTADMIN.
   - Refer to member HKTADMIN 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 (RC=0).
Syntax diagram for ADDPROD, using default definition table

The following syntax diagram shows the usage of the ADDPROD command when registering an IMS Tools product by using the default definition table:

```
ADDPROD PRODUCTID=xx RELEASE=vvrrmm RETENTION=(ddddd,vvvv)
REPOSITORY=xxxxxxxx HLQ=xxxx REPLACE=YES
```

Parameter reference for ADDPROD

The following parameter is provided on the EXEC statement and controls the execution of the job:

Table 7. Parameters for EXEC

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

The following parameters are available to customize the product registration:

Table 8. Parameters for ADDPROD

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRODUCTID</td>
<td>Specifies a 2-character IBM product identifier in the form of xx. This parameter is required. Refer to <a href="#">Table 9 on page 42</a></td>
</tr>
<tr>
<td>RELEASE</td>
<td>The level of the product that is being added, represented by the following version-release-maintenance syntax: VVRRMM. This parameter is required. (The VV value of 00 is reserved for Tools Base IMS Tools Knowledge Base usage.)</td>
</tr>
<tr>
<td>REPLACE=YES</td>
<td>NO</td>
</tr>
<tr>
<td>HLQ</td>
<td>High-level qualifier for product execution data sets. This parameter will be used by future functions. This parameter is optional.</td>
</tr>
</tbody>
</table>
### Table 8. Parameters for ADDPROD (continued)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>REPOSITORY</td>
<td>Specifies which Output repository the reports for this product are to be written to. The repository must already be defined and connected. The value is the repository name without the initial O. For example, use 1234567 for a repository name of O1234567. If no value is specified, then the standard Output repository will be used (O0000000). The setting REPLACE=YES and the value set for REPOSITORY are mutually exclusive. The value for REPOSITORY cannot be specified with REPLACE=YES.</td>
</tr>
<tr>
<td>RETENTION</td>
<td>Specifies the retention value for the product. Values are $dddd, vvvvv$ where $dddd$ is a value from 0 to 32767 that specifies the number of days a report must be kept before it can be deleted, and $vvvv$ is a value from 0 to 32767 that specifies the number of versions of the report that must be retained. A report must exceed both of these values before it will be deleted. A setting of 0,0 requests the retention of only the current version of the report; no history version of the report will be retained. If no value is specified, the settings from the default Tools Base IMS Tools Knowledge Base definition table will be used. The setting REPLACE=YES and the value set for RETENTION are mutually exclusive. The value for RETENTION cannot be specified with REPLACE=YES.</td>
</tr>
</tbody>
</table>

### ID reference for IMS Tools products using default definition table

The following table specifies the IDs of IMS Tools products that might use the default product definition table:

### Table 9. IDs for IMS Tools products using default definition table

<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>DG</td>
<td>IMS Database Solution Pack</td>
</tr>
<tr>
<td>DE</td>
<td>IMS Recovery Expert for z/OS</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>DU</td>
<td>IMS High Performance Unload</td>
</tr>
<tr>
<td>DX</td>
<td>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: Registering an IMS tool product by using the default Tools Base IMS Tools Knowledge Base definition table

The following example shows a portion of the HKTADMIN JCL that registers an IMS Tools product by using the default definition table:

```
//DREP EXEC PGM=HKTAPRA0,PARM='ITKBSRVR=srvrname'
//STEPLIB DD DISP=SHR,DSN=hlq1.shktload
//SYSPRINT DD SYSOUT=* 
//OUTRPT DD SYSOUT=* 
//SYSIN DD *
ADDPROD PRODUCTID=DC RELEASE=010400 /*
```

Registering user products

Use the product administration utility's ADDPROD command to register a user product and the ADDRPT command to register its report information with Tools Base IMS Tools Knowledge Base.

The PRODUCTID value is used to determine if this request is for a user product. If the value is not in the range of IBM-reserved values, it is treated as a user product. In this case, ADDPROD creates only a product definition.

All of the information about the product is derived from the input parameters. Be careful to avoid using information reserved for IMS Tools products.

To register user products, complete the following procedure:
1. Customize the properties for the product by modifying your copy of member HKTADMIN.
   - Refer to member HKTADMIN 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 (RC=0).

Syntax diagram for ADDPROD, registering a user product

The following syntax diagram shows the usage of the ADDPROD command when registering a user product:

```
  ADDPROD PRODUCTID=xx SNAME=xxxx [LNAME=xxxx]
  RETENTION=(ddddd, vvvvv) [REPOSITORY=xxxxxxxx]
```

Parameter reference for ADDPROD

The following parameter is provided on the EXEC statement and controls the execution of the job:
Table 10. Parameters for EXEC

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

The following parameters are available to customize the product registration:

Table 11. Parameters for ADDPROD

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRODUCTID</td>
<td>Product IDs available for defining user products are Ux, Vx, and Wx where x is A-Z, 0-9, @,#,$. All other product IDs are reserved for IMS Tools products usage. This parameter is required.</td>
</tr>
<tr>
<td>SNAME</td>
<td>Specifies a 15-character product name. Permitted characters include A-Z, a-z, 0-9, @, #, $, -, _, and blank. SNAME cannot exist in IBM-reserved names or any existing definition. This parameter is required.</td>
</tr>
<tr>
<td>LNAME</td>
<td>Specifies a 50-character product name. Permitted characters include A-Z, a-z, 0-9, @, #, $, -, _, and blank. SNAME is used if the LNAME parameter is not specified. LNAME cannot exist in IBM-reserved names or any existing definition. This parameter is optional.</td>
</tr>
<tr>
<td>REPOSITORY</td>
<td>Specifies which Output repository the reports for this product are to be written to. The repository must already be defined and connected. The value is the repository name without the initial O. For example, use 1234567 for a repository name of O1234567. If no value is specified, the standard Output repository will be used (O0000000).</td>
</tr>
<tr>
<td>RETENTION</td>
<td>Specifies the retention value for the product. Values are dddd, vvvv where dddd is a value from 0 to 32767 that specifies the number of days a report must be kept before it can be deleted, and vvvv is a value from 0 to 32767 that specifies the number of versions of the report that must be retained. A report must exceed both of these values before it will be deleted. A setting of 0,0 requests the retention of only the current version of the report; no history version of the report will be retained. The default values are 30 days and 7 versions.</td>
</tr>
</tbody>
</table>
Syntax diagram for ADDPROD, registering a user product

The following syntax diagram shows the usage of the ADDPROD command when registering a user product:

```
ADDPROD PRODUCTID=xx SNAME=xxxx LNAME=xxxx
```

Example: Registering a user product

The following example shows a portion of the HKTADMIN JCL that registers a user product:

```
//DREP EXEC PGM=HKTAPRA0,PARM='ITKBSRVR=srvrname'
//STEPLIB DD DISP=SHR,DSN=hlq1.shktload
//SYSPRINT DD SYSPRINT DD SYSOUT=* OUTRPT DD SYSOUT=* SYSIN DD *
ADDPROD PRODUCTID=UB LNAME=(LONGER-NAME-UP-TO-50-CHARACTERS)
SNAME=(SHORT-NAME)
/*
```

Registering user-defined reports

Use the product administration utility's ADDRPT command to register a user-defined report with Tools Base IMS Tools Knowledge Base. The product associated with this report must be already added using the ADDPROD command.

Reports can come from non-IMS tool sources. For example: DBRC reports.

User-defined reports must be registered before reports can be added to the repository. You must provide unique report index information for each import. The HKTAPRA0 utility’s ADDRPT command assigns the report title and retention attributes.

The PRODUCTID value is used to determine if this request is for a user product. If the value is not in the range of IBM-reserved values, it is treated as a user product.

The ADDRPT function is allowed only for user products.

To register user-defined reports, complete the following procedure:

1. Customize the properties for the report by modifying your copy of member HKTADMIN.
   Refer to member HKTADMIN 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 (RC=0).
Syntax diagram for ADDRPT, registering user-defined reports

The following syntax diagram shows the usage of the ADDRPT command when registering user-defined reports:

```
ADDRPT—PRODUCTID=xx—REPORTID=xx—STITLE=xxxx
                              | LTITLE=xxxx

RETENTION=(ddddd,vvvvv)  [RECORD=YES|NO]
```

Parameter reference for ADDRPT

The following parameter is provided on the EXEC statement and controls 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 Tools Base IMS Tools Knowledge Base server. The name can be up to eight characters in length. This parameter is required.</td>
</tr>
</tbody>
</table>

The following parameters are available to customize the report registration:

*Table 13. Parameters for ADDRPT*

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRODUCTID</td>
<td>The product ID for user-defined products are Ux, Vx, and Wx where x is any valid character. The product ID must be previously defined using ADDPROD. All other product IDs are reserved for use by IMS Tools products. Defining reports for non-user products should be done only as required by an IMS Tools product. This parameter is required.</td>
</tr>
<tr>
<td>REPORTID</td>
<td>Specifies a 2-character report identifier. Permitted characters include A-Z, 0-9, @,#,$. This parameter is required.</td>
</tr>
<tr>
<td>STITLE</td>
<td>Specifies a 25-character report title. Permitted characters include A-Z, a-z, 0-9, @, $, -, _ , and blank. STITLE must not be previously defined for this product.</td>
</tr>
</tbody>
</table>
Table 13. Parameters for ADDRPT (continued)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LTITLE</td>
<td>Specifies a 60-character report title. Permitted characters include A-Z, a-z, 0-9, @, #, $, -, _, and blank. STITLE is used if the LTITLE parameter is not specified. LTITLE must not be previously defined for this product.</td>
</tr>
<tr>
<td>RETENTION</td>
<td>Specifies the retention value for the report. Values are \textit{ddddd, vvvvv} where \textit{ddddd} is a value from 0 to 32767 that specifies the number of days a report must be kept before it can be deleted, and \textit{vvvvv} is a value from 0 to 32767 that specifies the number of versions of the report that must be retained. A report must exceed both of these values before it will be deleted. A setting of 0,0 requests the retention of only the current version of the report; no history version of the report will be retained. If no value is specified, the default product settings will be used.</td>
</tr>
<tr>
<td>RECORD</td>
<td>\texttt{YES,NO} A value of NO causes the report to not be recorded with Tools Base IMS Tools Knowledge Base. The default value is YES.</td>
</tr>
</tbody>
</table>

Example: Registering a user-defined report

The following example shows a portion of the HKTADMIN JCL for registering user-defined reports:

```jcl
//DREP EXEC PGM=HKTAPRA0,PARM='ITKBSRVR=srvrname'
//STEPLIB DD DISP=SHR,DSN=hlq1.shktload
//SYSPRINT DD SYSOUT=*  
//OUTRPT DD SYSOUT=*  
//SYSIN DD *
ADDRPT PRODUCTID=UB REPORTID=1C STITLE=(SHORT-TITLE)  
/*
```

Listing registered products and reports

Use the product administration utility's \texttt{LIST} command to list all the products and reports that are registered with Tools Base IMS Tools Knowledge Base.

To list registered products and reports, complete the following procedure:

1. Customize the properties for the listing by modifying your copy of member HKTADMIN. Refer to member HKTADMIN in \texttt{hlq.SHKTSAMP} for the job JCL. Substitute the \texttt{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 (RC=0).
Syntax diagram for LIST, listing registered products and reports

The following syntax diagram shows the usage of the LIST command when listing registered products and reports:

```
LIST PRODUCTID=xx REPORTID=xx
```

Parameter reference for LIST

The following parameter is provided on the EXEC statement and controls the execution of the JOB:

*Table 14. Parameters for EXEC*

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
</table>
| ITKBSRVR  | The name of the Tools Base IMS Tools Knowledge Base server.  

The name can be up to eight characters in length.  

This parameter is required.  |

The following parameters are available to list registered products and reports:

*Table 15. Parameters for LIST*

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
</table>
| PRODUCTID | Specifies a 2-character product identifier.  

Permitted characters include A-Z, 0-9, @, #, $.

You can use the single "*" wildcard character to specify all products. For example: PRODUCTID=*  

The % character is not a supported wildcard character. |

| REPORTID  | Specifies a 2-character report identifier.  

Permitted characters include A-Z, 0-9, @, #, $.

You can use the single "*" wildcard character to specify all reports. For example: REPORTID=*  

The % character is not a supported wildcard character. |

Using wildcard expressions with PRODUCTID and REPORTID

The wildcard character "*" can only be used by itself.

The following example is valid:

LIST PRODUCTID=*  

The following examples are not valid:

LIST PRODUCTID=A*  
LIST PRODUCTID=**B
If you use the wildcard character for PRODUCTID, you must use the wildcard character with REPORTID. For example:

```
LIST PRODUCTID=** REPORTID=**
```

**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>
<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>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 1: Listing all registered products and reports**

The following example shows a portion of the HKTADMIN JCL for listing registered products and reports.

Specify LIST PRODUCTID=* to list all products (product titles, product IDs).

This example produces the same result as Example 3.

```
//DREP    EXEC PGM=HKTAPRA0,PARM='ITKBSRVR=srvrname'
//STEPLIB DD DISP=SHR,DSN=hlq1.shktload
//SYSPRINT DD SYSOUT=* 
//OUTRPT DD SYSOUT=* 
//SYSIN DD * 
LIST PRODUCTID=* */
```

**Example output:**

```
************************************************************************************** TOP OF DATA **************************************************************************************
PRODUCT ID: DU  RELEASE  020200  LONG NAME:  IMS High Performance Image Copy

<table>
<thead>
<tr>
<th>REPORT ID</th>
<th>LONG TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>CAB STATISTICS</td>
</tr>
<tr>
<td>02</td>
<td>HSSROPT CONTROL STATEMENTS</td>
</tr>
<tr>
<td>03</td>
<td>DB CALL STATISTICS</td>
</tr>
<tr>
<td>04</td>
<td>DB STATISTICS</td>
</tr>
<tr>
<td>05</td>
<td>DATA SET I/O STATISTICS</td>
</tr>
</tbody>
</table>
```
Example 2: Listing all reports for one registered product

Specify LIST PRODUCTID=xx to list all reports for the product (report titles, report IDs).

Example 3: Listing all reports for all registered products

Specify LIST PRODUCTID=*, REPORTID=* to list all products (product titles, product IDs) and all reports for each product (report titles, report IDs).

This example produces the same result as Example 1.

Example 4: Listing one report for one registered product

Example: HKTADMIN JOB

The following example shows a comprehensive HKTADMIN JOB.

Example: HKTADMIN JOB

The following example shows a comprehensive HKTADMIN JOB.

Example: HKTADMIN JOB
/* KNOWLEDGE BASE TARGET LIBRARIES. */
/* 3. CHANGE "SRVRNAME" TO THE SERVER GROUP NAME. */
/* ----------------------------------------------------------------
/* SRVRNAME IS A REQUIRED PARAMETER
/* SYSPRINT IS A REQUIRED DD. SYSIN WILL ECHO TO IT AND ANY ERROR
/* WILL BE WRITTEN TO IT (EXCEPTION WTO FOR NO SYSPRINT)
/* OUTRPT IS REQUIRED IF THE LIST COMMAND IS USED
/* SYSIN IS REQUIRED. SYSIN CONTAINS THE REQUESTS. THE FORMAT IS FROM
/* 1 TO 72. LINES DO NOT WRAP. NO CONTINUATION IS USED. A REQUEST
/* CONTINUES UNTIL A CARD STARTS WITH ANOTHER COMMAND. SPACE(S) AND
/* OR ',,' (COMMA) ARE USED TO SEPARATE PARAMETERS.
/* THE EXAMPLE SHOWS
/* 1 LIST REPORTS FOR ALL PRODUCTS
/* 2 ADD A PRODUCT FROM AN INTERNALLY DEFINED INPUT
/* 3 LIST REPORTS FOR PRODUCT ID IB
/* 4 ADD A USER DEFINED PRODUCT
/* 5 ADD A USER DEFINED REPORT FOR A USER DEFINED PRODUCT
/* 6 LIST THE SPECIFIC REPORT FROM A SPECIFIC PRODUCT ID
/* 7 ADD A PRODUCT FROM AN EXTERNALLY PROVIDED INPUT
/* ----------------------------------------------------------------
//DREP EXEC PGM=HKTAPRA0,PARM='ITKBSRVR=svrname'
//STEPLIB DD DISP=SHR,DSN=hlq1.shktload
// DD DISP=SHR,DSN=hlq2.toolload
//SYSPRINT DD SYSOUT=* /OUTRPT DD SYSOUT=* /SYSIN DD *
LIST PRODUCTID=* /*1*/
ADDPROD PRODUCTID=IB RELEASE=041107 /*2*/
LIST PRODUCTID=IB /*3*/
ADDPROD PRODUCTID=UB RELEASE=041107 /*4*/
  LNAME=LONGER-NAME-UP-TO-50-CHARACTERS /*4*/
  SNAME=SHORT-NAME /*4*/
ADDRPT PRODUCTID=UB REPORTID=1C STITLE=SHORT-TITLE /*5*/
LIST PRODUCTID=UB REPORTID=1C /*6*/
ADDPROD TABLE=module REPLACE=YES /*7*/
/

Additional notes:
• In example lines 2 and 3, the "IB" product ID is the code for IMS Buffer Pool Analyzer.
• In example line 7, the TABLE parameter specifies the name of the load module for the IMS Tool product that is being registered.
The load module contains the external product definition table for this IMS Tool product.
The data set containing the load module is concatenated to STEPLIB (in this example, hlq2.toolload).
Chapter 5. RECON ID (locale) administration

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

Topics:
- “Locales”
- “Adding a new RECON environment”
- “Viewing RECON information” on page 57
- “Updating a RECON environment” on page 59

Locales

Locale is a descriptive term used to define the IMS environment(s) in which Policy Services is used. The locale designation is used as part of the naming of policies, rules, and notification lists.

For each IMS Tools product, the locale definition mechanism can vary. For example, the locale as used and defined by IMS Database Reorganization Expert is defined as a RECON ID.

In the example of IMS Database Reorganization Expert, the RECON data sets for each IMSplex or each DBRC group in each IMSplex are defined to Tools Base IMS Tools Knowledge Base through the user interface and are stored in the repository.

An internal ID is generated by Tools Base IMS Tools Knowledge Base for each user-defined locale.

The locale can be changed using the Tools Base IMS Tools Knowledge Base user interface. However, the locale’s internal ID always remains the same.

Global locale

A global locale definition (BSNGLOBL) is also automatically defined by Tools Base IMS Tools Knowledge Base to serve as the default locale for Policy Services.

Adding a new RECON environment

You must describe your RECON environments to Tools Base IMS Tools Knowledge Base. When reports are written to the Output repository, they are indexed by an internal identifier that represents the RECON environment associated with the RECON1 data set name. Other IMS Tools products will use the RECON information for other purposes.

About this task

When you create a new RECON environment, the RECON ID, RECON1, RECON2, and RECON3 values must each be unique among the RECON IDs that have already been defined.
Procedure

To add a new RECON environment, complete the following steps:

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

<table>
<thead>
<tr>
<th>Administration Help</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. List Deferred Reports</td>
</tr>
<tr>
<td>2. List Installed Products</td>
</tr>
<tr>
<td>3. List Repositories</td>
</tr>
<tr>
<td>4. List Recon Information</td>
</tr>
<tr>
<td>5. Set retention for sensor data</td>
</tr>
</tbody>
</table>

   **Figure 6. Administration menu options**

   The Recon Information panel is displayed.
   For example:

<table>
<thead>
<tr>
<th>Help</th>
</tr>
</thead>
<tbody>
<tr>
<td>SERVER: FPQSPLEX Recon Information Row 1 to 5 of 5</td>
</tr>
<tr>
<td>Command ===&gt; NEW Scroll ===&gt;</td>
</tr>
<tr>
<td>Select a row action or press END to exit.</td>
</tr>
<tr>
<td>Command NEW</td>
</tr>
<tr>
<td>Row actions: U - Update V - View</td>
</tr>
<tr>
<td>For Autonomics Director only: S - Select</td>
</tr>
<tr>
<td>Command S selects the Recon, then exits this panel.</td>
</tr>
<tr>
<td>Recon ID Recon1 Dataset Name Description</td>
</tr>
<tr>
<td>MYRECON1 IMS1.RECON1 IMS 1 IN LA</td>
</tr>
<tr>
<td>MYRECON2 IMS2.RECON1</td>
</tr>
<tr>
<td>MYRECON3 IMS3.RECON1</td>
</tr>
<tr>
<td>MYRECON4 IMS4.RECON1</td>
</tr>
<tr>
<td>MYRECON5 IMS5.RECON1</td>
</tr>
</tbody>
</table>

   **Figure 7. Recon Information panel**

3. In the Command line, type NEW and press Enter.
   The Add Recon Information panel is displayed.
The following table provides descriptions of the fields. Only the Recon ID, Recon1, and Description values are used by the Output repository. The remaining fields are used by other IMS Tools products.

**Table 17. Add Recon Information panel field descriptions**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recon ID</td>
<td>An 8-character short name that is associated with the RECON1 data set name.</td>
</tr>
<tr>
<td>Recon1</td>
<td>The full name that describes the RECON1 data set. Tools Base IMS Tools Knowledge Base associates reports with the RECON1 data set name.</td>
</tr>
<tr>
<td>Recon2</td>
<td>The name associated with the RECON2 data set. Not used in this version of Tools Base IMS Tools Knowledge Base.</td>
</tr>
<tr>
<td>Recon3</td>
<td>The name associated with the RECON3 data set. Not used in this version of Tools Base IMS Tools Knowledge Base.</td>
</tr>
<tr>
<td>IMSPLEX</td>
<td>The name given to the IMSPLEX if the RECON data sets were defined as being part of an IMSPLEX.</td>
</tr>
<tr>
<td>TOIXCF</td>
<td>The XCF group name used to communicate with IMS Tools Online System Interface (TOSI), if TOSI is installed in this environment. For more information about TOSI, see the <em>Tools Base IMS Common Services for z/OS User’s Guide</em>.</td>
</tr>
<tr>
<td>RACF® Class</td>
<td>The RACF security class to be used by any product that uses TOSI to handle security on IMS commands.</td>
</tr>
<tr>
<td>IMS CMD Security</td>
<td>The type of IMS command security to be performed.</td>
</tr>
<tr>
<td></td>
<td>Values are:</td>
</tr>
<tr>
<td></td>
<td><strong>IMS</strong> - command security to use IMS security (for example CIMS)</td>
</tr>
<tr>
<td></td>
<td><strong>APPL</strong> - command security to use RACF APPL security</td>
</tr>
<tr>
<td></td>
<td><strong>NONE</strong> - no command security is performed</td>
</tr>
<tr>
<td>Description</td>
<td>A 64-character description of the RECON ID.</td>
</tr>
<tr>
<td>Add IMS Datasets?</td>
<td>Specify whether to add IMS data sets to the RECON.</td>
</tr>
</tbody>
</table>

4. Enter the appropriate values for the required fields and press Enter.
   Optional: To add IMS data sets:
   a. Enter Y in the **Add IMS Datasets** field.
The Recon Extended Dataset Selection panel is shown:

**Figure 9. Recon Extended Dataset Selection panel**

b. Select the library type or types and press Enter.

The Dataset Concatenation panel or panels are shown.

c. Type the data set names and press Enter.

For example, to add IMSLA1.IMS111.DBDLIB1, IMSLA1.IMS111.DBDLIB2, and IMSLA1.IMS111.DBDLIB31:
Results

The Recon Information panel is refreshed. The new RECON is displayed in the list.

Viewing RECON information

You can view the RECON information that is defined to your Tools Base IMS Tools Knowledge Base information management environment.

About this task

IMS relies on Database Recovery Control (DBRC) to record and manage information about the database environment. DBRC keeps this information in a set of VSAM data sets that are collectively called the Recovery Control (RECON) data sets.

Tools Base IMS Tools Knowledge Base associates reports with a RECON environment. The Tools Base IMS Tools Knowledge Base Output repository uses the RECON1 data set name as one of the index values for stored reports.

Procedure

To view RECON information, complete the following steps:

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

   Administration Help
   
   1. List Deferred Reports
   2. List Installed Products
   3. List Repositories
   4. List Recon Information
   5. Set retention for sensor data

   Figure 12. Administration menu options

The Recon Information panel is displayed.
For example:

```
Help
---------------------------------------------------------------------------
SERVER: FPQPLEX Recon Information Row 1 to 5 of 5
Command ===> NEW Scroll ===> 
Select a row action or press END to exit.
Command NEW
Row actions: U - Update V - View
For Autonomics Director only: S - Select
Command S selects the Recon, then exits this panel.

Recon ID Recon1 Dataset Name Description
- MYRECON1 IMS1.RECON1 IMS 1 IN LA
- MYRECON2 IMS2.RECON1
- MYRECON3 IMS3.RECON1
- MYRECON4 IMS4.RECON1
- MYRECON5 IMS5.RECON1
**************************************************** Bottom of data ****************************************************
```

**Figure 13. Recon Information panel**

3. Use the **View** row action (V) to view the information for a specific RECON.
   Press Enter.
   The View Recon Information panel is displayed.
   For example:

```
Help
-----------------------------
SERVER: FPQPLEX View Recon Information IMS Tools KB 1.4.0
Command ===> 
Press END to exit.

Recon ID .......: MYRECON1
Recon1 .......: IMS1.RECON1
Recon2 .......: IMS1.RECON2
Recon3 .......: IMS1.RECON3
IMSPLEX .......: PLEX1
TOIXCF .......: 
RACF Class ....: 
IMS CMD Security ..: NONE
Description : IMS 1 IN LA
Report Cnt ....: 

View IMS Datasets? .. Y (Y/N)
```

**Figure 14. View Recon Information panel**

The panel displays the current values of the selected RECON ID.
Included in the displayed values is the number of reports associated with this RECON ID.

4. Optional: Enter Y in the **View IMS Datasets** field and press Enter.
The View Recon Information - Datasets panel is shown:
Updating a RECON environment

You can update a RECON environment by modifying the current values that describe this RECON environment.

About this task

This panel allows the RECON values to be modified. Any value other than the RECON ID can be changed by typing over the current value. Changing the RECON ID is not allowed.

When reports are written to the Output repository, they are indexed by an internal identifier that represents the RECON environment associated with the RECON1 data set name. Changing the RECON1 data set name will cause reports for a different RECON environment to be indexed under this RECON entity.

Procedure

To update a RECON environment, complete the following steps:
1. Access the Administration menu from the Tools Base IMS Tools Knowledge Base main menu panel.
   For example:

   Administration Help
   1. List Deferred Reports
   2. List Installed Products
   3. List Repositories
   4. List Recon Information
   5. Set retention for sensor data

   Figure 16. Administration menu options

   The Recon Information panel is displayed.
   For example:
3. Use the Update row action (U) to modify the information for a specific RECON. Press Enter.

The Update Recon Information panel is displayed.

For example:

<table>
<thead>
<tr>
<th>Recon ID</th>
<th>Recon1 Dataset Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MYRECON1</td>
<td>IMS1.RECON1</td>
<td>IMS 1 IN LA</td>
</tr>
<tr>
<td>MYRECON2</td>
<td>IMS2.RECON1</td>
<td></td>
</tr>
<tr>
<td>MYRECON3</td>
<td>IMS3.RECON1</td>
<td></td>
</tr>
<tr>
<td>MYRECON4</td>
<td>IMS4.RECON1</td>
<td></td>
</tr>
<tr>
<td>MYRECON5</td>
<td>IMS5.RECON1</td>
<td></td>
</tr>
</tbody>
</table>

Figure 17. Recon Information panel

The panel displays the current values of the selected RECON ID. The following table provides descriptions of the fields.

Only the Recon ID, Recon1, and Description values are used by the Output repository. The remaining fields are used by other IMS Tools products.

Table 18. Update Recon Information panel field descriptions

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recon ID</td>
<td>An 8-character short name that is associated with the RECON1 data set name. The Recon ID name cannot be changed.</td>
</tr>
<tr>
<td>Recon1</td>
<td>The full name that describes the RECON1 data set. Tools Base IMS Tools Knowledge Base associates reports with the RECON1 data set name.</td>
</tr>
<tr>
<td>Recon2</td>
<td>The name associated with the RECON2 data set.</td>
</tr>
</tbody>
</table>
Table 18. Update Recon Information panel field descriptions (continued)

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recon3</td>
<td>The name associated with the RECON3 data set.</td>
</tr>
<tr>
<td>IMSPLEX</td>
<td>The name given to the IMSPLX if the RECON data sets were defined as being part of an IMSPLX.</td>
</tr>
<tr>
<td>TOIXCF</td>
<td>The XCF group name used to communicate with IMS Tools Online System Interface (TOSI), if TOSI is installed in this environment. For more information about TOSI, see the Tools Base IMS Common Services for z/OS User’s Guide.</td>
</tr>
<tr>
<td>RACF Class</td>
<td>The RACF security class to be used by any product that uses TOSI to handle security on IMS commands.</td>
</tr>
<tr>
<td>IMS CMD Security</td>
<td>The type of IMS command security to be performed.</td>
</tr>
<tr>
<td></td>
<td>Values are:</td>
</tr>
<tr>
<td></td>
<td>IMS - command security to use IMS security (for example CIMS)</td>
</tr>
<tr>
<td></td>
<td>APPL - command security to use RACF APPL security</td>
</tr>
<tr>
<td></td>
<td>NONE - no command security is performed</td>
</tr>
<tr>
<td>Description</td>
<td>A 64-character description of the RECON ID.</td>
</tr>
<tr>
<td>Update IMS Datasets?</td>
<td>Specify whether to update IMS data sets in the RECON.</td>
</tr>
</tbody>
</table>

4. Type over the value of any field that requires updating. Press Enter.

The message Recon Updated is displayed in the upper right corner of the panel.

Optional: To update IMS data sets:

a. Enter Y in the **Add IMS Datasets** field.

The Recon Extended Dataset Selection panel is shown:

![Recon Extended Dataset Selection panel](image)

**Figure 19. Recon Extended Dataset Selection panel**

b. Select the data set to update and press Enter.

The ACBLIB Dataset Concatenation panel is shown:
c. Select a row action and press Enter.

5. Press PF3 to exit this panel and return to the Recon Information panel.
Chapter 6. Repository administration

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

Topics:
- “Viewing repository information”
- “Starting and stopping repositories (ISPF)” on page 65
- “Starting and stopping repositories (batch)” on page 66
- “Setting the repository autoOPEN condition” on page 71
- “Implementing a new Output repository” on page 72
- “Disconnecting an Output repository” on page 79
- “Setting sensor data retention” on page 80
- “Maintaining repository data sets” on page 81

Viewing repository information

You can view information about any of the repositories used by Tools Base 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 Tools Base IMS Tools Knowledge Base main menu panel.
   For example:

   Administration Help
   1. List Deferred Reports
   2. List Installed Products
   3. List Repositories
   4. List Recon Information
   5. Set retention for sensor data

   Figure 21. Administration menu options

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

<table>
<thead>
<tr>
<th>Action</th>
<th>Name</th>
<th>Type</th>
<th>Stopped</th>
<th>Auto</th>
</tr>
</thead>
<tbody>
<tr>
<td>INPUT</td>
<td>INPUT</td>
<td>N</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>01234567 OUTPUT N Y</td>
<td>REGISTRY REGISTRY N Y</td>
<td>SENSOR OUTPUT N Y</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 19. 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>The repository type. There are three types: INPUT - only one such repository exists, REGISTRY - only one such repository exists, OUTPUT - more than one such repository can exist, SENSOR - only one such repository can exist</td>
</tr>
<tr>
<td>Stopped</td>
<td>Repository is in either a started (N) or stopped (Y) state.</td>
</tr>
</tbody>
</table>
Starting and stopping repositories (ISPF)

You can use the ISPF user interface to manually place the Tools Base 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 Tools Base 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 Tools Base IMS Tools Knowledge Base server. If a repository is in the Start state and the Tools Base 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 Tools Base IMS Tools Knowledge Base main menu panel.
   For example:

   Administration Help

   1. List Deferred Reports
   2. List Installed Products
   3. List Repositories
   4. List Recon Information
   5. Set retention for sensor data

   Figure 24. Administration menu options

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

Table 19. Repository Information panel field descriptions (continued)

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto</td>
<td>Whether the repository is started when the Tools Base 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>
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 Tools Base 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, FPQBATC, can be used to place individual Tools Base IMS Tools Knowledge Base repositories in a started or stopped state.

For example, you might want to stop a repository while the Tools Base 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 Tools Base IMS Tools Knowledge Base server. If a repository is in the Start state and the Tools Base IMS Tools Knowledge Base server is stopped temporarily, the repository is restored to the Start state when the server is restarted.

The FPQBATC 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 Tools Base 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):
     \texttt{HKT\_00000000}

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:
     \texttt{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:

\begin{table}[h]
\centering
\caption{Parameter for EXEC}
\begin{tabular}{ll}
\hline
Parameter & Description \\
\hline
XCFGROUP & Use the Tools Base IMS Tools Knowledge Base server XCF group name for this value.  \\
 & The name can be up to eight characters in length. \\
 & This parameter is required. \\
\hline
\end{tabular}
\end{table}

Syntax diagram for START repository command

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

\begin{center}
\includegraphics[width=0.5\textwidth]{syntax_diagram}
\end{center}

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 21. 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>
<tr>
<td>MAXWAIT</td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>The default specification is: MAXWAIT(5,IGNORE)</td>
</tr>
<tr>
<td></td>
<td>Specify MAXWAIT(0,IGNORE) to not wait for the command to finish.</td>
</tr>
</tbody>
</table>

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

- 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 22. 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**
  - 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.
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
/* ----------------------------------------------------------------
/*  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 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 ASYNCRONOUSLY. A RC=0 FROM THIS STEP ONLY MEANS
/* THAT THE COMMAND WAS ACCEPTED AND THE REQUESTED FUNCTION WAS
/* INITIATED.
/* ----------------------------------------------------------------
/* START EXEC PGM=FPQINI0$,REGION=0M,
/*     PARM='BPEINIT=FPQBINI0,XCFGROUP=SRVRNAM' XCF GROUP NAME
/*STEPLIB DD DISP=SHR,DSN=HLQ1.SHKTLOAD
/*SYSPRINT DD SYSOUT=*  
/*SYSSIN DD *  
START REPOSITORY(HKT_00000000) MAXWAIT(5,CONTINUE)
/*
/*STOP EXEC PGM=FPQINI0$,REGION=0M,
/*     PARM='BPEINIT=FPQBINI0,XCFGROUP=SRVRNAM' XCF GROUP NAME
/*STEPLIB DD DISP=SHR,DSN=HLQ1.SHKTLOAD
/*SYSPRINT DD SYSOUT=*  
/*SYSSIN DD *  
STOP REPOSITORY(HKT_00000000) MAXWAIT(5,CONTINUE)
/*
```

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 Tools Base 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 Tools Base 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 Tools Base 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 Tools Base IMS Tools Knowledge Base main menu panel.
   
   For example:

   ![Administration menu options](image)

   Figure 26. Administration menu options

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

   For example:

   ![Repositories panel](image)

   Figure 27. 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 Tools Base 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.

---

### Implementing a new Output repository

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

The initial installation of Tools Base IMS Tools Knowledge Base provides a single Output repository (O0000000). All reports that are written to Tools Base 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:

- [“Defining a new Output repository”](#)
- [“Connecting an additional Output repository” on page 75](#)
- [“Changing the repository specification” on page 77](#)

### 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 HKTDREP 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
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:

```bash
//HKTDFREP JOB (&SYSUID,020,990,010), '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. */
/* USE, DUPLICATION OR DISCLOSURE RESTRICTED */
/* BY GSA A&D SCHEDULE CONTRACT WITH IBM CORP. */
/* ---------------------------------------------------------------*/
/* DIRECTIONS: */
/* ---------------------------------------------------------------*/
/* 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. */
/* 2. CHANGE "SRVRNAME" TO THE NAME YOU WILL USE FOR THE IMS TOOLS */
/*    KNOWLEDGE BASE SERVER. */
/* 3. CHANGE "VOLUM1" TO THE VOLUME YOU WILL USE FOR THE PRIMARY */
/*    REPOSITORY DATASETS */
/* 4. CHANGE "VOLUM2" TO THE VOLUME YOU WILL USE FOR THE SECONDARY */
/*    REPOSITORY DATASETS */
/* 5. THE SPACE ALLOCATIONS DO NOT NEED ADJUSTMENT EXCEPT FOR */
/*    THE OUTPUT REPOSITORY (O0000000). 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 */
/* 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.PRID PRIMARY REPOS.INDEX DATA */
/* HLQ2.SRVRNAME.REPOS-TYP.PRMD 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, 0000000 */
/* +---> HIGH LEVEL QUALIFIER */

/* DELETE EXISTING REPOSITORIES BEFORE RE-DEFINING */
DELETE HLQ2.SRVRNAME.O0000001.PRID CLUSTER
DELETE HLQ2.SRVRNAME.O0000001.SRID CLUSTER
DELETE HLQ2.SRVRNAME.O0000001.PRMD CLUSTER
DELETE HLQ2.SRVRNAME.O0000001.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.O0000001.PRID ) -
    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.O0000001.PRID.INDEX ) ) -
    DATA (NAME( HLQ2.SRVRNAME.O0000001.PRID.DATA ) )

/* DEFINE FOR SECONDARY OUT REP. RID (INDEX) CLUSTER REPOSITORY */
DEFINE CLUSTER(NAME( HLQ2.SRVRNAME.O0000001.SRID ) -
    VOL(VOLUM2) /*USER MUST CHANGE*/ -
    REUSE -
    INDEXED -
    KEYS(128 0) -
    CYLINDERS(10 10) /*MATCH VALUE FOR PRID */-
    SHAREOPTIONS (2 3) -
    FREESPACE (10 10) -
    RECORDSIZE (256 256) -
    CONTROLINTERVALSIZE (8192) -
) -
    INDEX (NAME( HLQ2.SRVRNAME.O0000001.SRID.INDEX ) ) -
    DATA (NAME( HLQ2.SRVRNAME.O0000001.SRID.DATA ) )

/* DEFINE FOR PRIMARY OUT REP. RMD (MEMBER) CLUSTER REPOSITORY */
DEFINE CLUSTER(NAME( HLQ2.SRVRNAME.O0000001.PRMD ) -
    VOL(VOLUM1) /*USER MUST CHANGE*/ -
    REUSE -
    INDEXED -
    KEYS(128 0) -
    CYLINDERS(50 50) /*USER MUST CALCULATE*/ -
    SHAREOPTIONS (2 3) -
    FREESPACE (00 20) -
    RECORDSIZE (8185 8185) -
    CONTROLINTERVALSIZE (8192) -
) -
Connecting an additional Output repository

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

About this task

An Output repository must be defined to the Tools Base 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 Tools Base IMS Tools Knowledge Base main menu panel.
   
   For example:

   
   ```
   Administration Help
   1. List Deferred Reports
   2. List Installed Products
   3. List Repositories
   4. List Recon Information
   5. Set retention for sensor data
   ```

   Figure 28. Administration menu options

2. Select option 3 (List Repositories). Press Enter.
   
   The Repositories panel is displayed.
   
   For example:
3. From the **Commands** menu, select option 1 (**Connect Output repository**). For example:

4. Press Enter. The Connect Repository panel is displayed:

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

**Table 23. Connect Repository panel field descriptions**

<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 be numeric. For example: O1234567</td>
</tr>
</tbody>
</table>
Table 23. Connect Repository panel field descriptions (continued)

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Defaults to OUTPUT.</td>
</tr>
<tr>
<td>Auto</td>
<td>Whether the repository is started when the Tools Base 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 you created for this repository.</td>
</tr>
<tr>
<td></td>
<td>These data 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 Tools Base IMS Tools Knowledge Base, 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 Tools Base IMS Tools Knowledge Base main menu panel.
   For example:

   The Installed Products List panel is displayed.

   For example:

   ```
   Figure 33. 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:

   ```
   Figure 34. 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 Tools Base 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 Tools Base IMS Tools Knowledge Base main menu panel.
   
   For example:

   ```
   Administration Help
   1. List Deferred Reports
   2. List Installed Products
   3. List Repositories
   4. List Recon Information
   5. Set retention for sensor data
   
   Figure 35. Administration menu options
   ```

2. Select option 3 (**List Repositories**). Press Enter.
   
   The Repositories panel is displayed.

   For example (2 Output repositories are listed):

   ```
   Commands Help
   SERVER: FPQRDP01 Repositories Row 1 to 4 of 4
   Command ===> Enter a command, select a row action or press End to exit.
   Row actions: I - Information S - Start P - STOP D -Disconnect A - AutoOPEN
   Action Name Type Stopped Auto
   INPUT INPUT  N  Y
   O0000000  OUTPUT  N  Y
   01234567  OUTPUT  Y  Y
   REGISTRY REGISTRY  N  Y
   **************************** Bottom of data ****************************
   
   Figure 36. 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](SERVER: FPQRDP01 Confirmation Command ===> Scroll ===> PAGE
Press ENTER to continue or END to exit.
Warning: ... N Do you really want to disconnect
Repository: 01234567

   Figure 37. 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.

### Setting sensor data retention

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

#### About this task

Sensor data is the 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 Tools Base IMS Tools Knowledge Base Sensor Data repository.

The sensor 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.

You can control the length of time that sensor 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 INITNSNR control statement of member HKTRJINT. You can modify this parameter at a later time using the Administration > Set retention for sensor data drop-down menu of the IMS Tools KB report service user interface.
Table 24. DAYS parameter in the INITSNSR control statement of member HKTJRINT

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DAYS</td>
<td>The minimum number of days that sensor data is retained in the Sensor Data repository. To determine an appropriate value, consider the type and extent of analysis of sensor data you might want to perform (trend analysis, history, comparative analysis). Valid range of values is 1 - 32767 The default value is 365. This parameter is optional.</td>
</tr>
</tbody>
</table>

Procedure

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

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

   For example:

   ```
   1. List Deferred Reports
   2. List Installed Products
   3. List Repositories
   4. List Recon Information
   5. Set retention for sensor data
   ```

   Figure 38. 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:

   ```
   SERVER: FPQSPLEX Set Retention Days for Sensor Data IMS Too...
   Command ==> Type number of days for retaining Sensor Data or press END to exit.
   Retention Days . . . 256
   ```

   Figure 39. 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.

Maintaining repository data sets

The Tools Base 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”
- “Recovering repository data sets” on page 84
- “Reorganizing repository data sets” on page 86
- “Resizing repository data sets” on page 88

**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 HKTBAKUP can be found in the hlq.SHKTSAMP library file.

```plaintext
//HKTBAKUP 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=* 
SYSSIN 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=SYSALLDA,VOL=SER=VOLUM1, ** USER MUST CHANGE ** 
   SPACE=(CYL,(1,1)) ** CHANGE TO SIZE NECESSARY ** 
BAKUPRMD DD DSN=HLQ3.BACKUP.SERVER.REPOSIT.PRM, 
   DISP=(NEW,CATLG),DCB=BLKSIZE=24576, 
   UNIT=SYSALLDA,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=SYSALLDA,VOL=SER=VOLUM1, ** USER MUST CHANGE ** 
   SPACE=(CYL,(1,1)) ** CHANGE TO SIZE NECESSARY ** 
BAKUSRMD DD DSN=HLQ3.BACKUP.SERVER.REPOSIT.SRM, 
   DISP=(NEW,CATLG),DCB=BLKSIZE=24576, 
   UNIT=SYSALLDA,VOL=SER=VOLUM1, ** USER MUST CHANGE ** 
   SPACE=(CYL,(10,10)) ** CHANGE TO SIZE NECESSARY ** 
SYSSIN DD *
/* BACKUP THE PRID (INDEX DATA) OF THE STOPPED REPOSITORY */ 
REPRO INDATASET(HLQ2.SERVER.REPOSIT.PRID) - 
   OUTFILE(BAKUPRID) 
/* BACKUP THE PRMD (MEMBER DATA) OF THE STOPPED REPOSITORY */ 
REPRO INDATASET(HLQ2.SERVER.REPOSIT.PRM) - 
   OUTFILE(BAKUPRMD) 
/* BACKUP THE SRID (INDEX DATA) OF THE STOPPED REPOSITORY */ 
REPRO INDATASET(HLQ2.SERVER.REPOSIT.SRID) - 
   OUTFILE(BAKUSRID) 
/* BACKUP THE SRMD (MEMBER DATA) OF THE STOPPED REPOSITORY */ 
REPRO INDATASET(HLQ2.SERVER.REPOSIT.SRM) - 
   OUTFILE(BAKUSRMD) 
/* 
```

START THE REPOSITORY

```
Determining the frequency of backing up repositories

Each of the Tools Base 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.

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 Tools Base 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
//* ----------------------------------------------------------------
//* 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"
//* 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 reload the repository datasets and start the repository.

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 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 Tools Base 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.

```assemblerc
//HKTREORG JOB
/** ****************************
/** IMS Tools Knowledge Base VERSION 1 RELEASE 2
/** LICENSED MATERIALS - PROPERTY OF IBM
/** 5655-V99 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  "SRVNAME"
/**  ** 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
```
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 HKTDFREP.

Then perform the following procedures:
1. Stop the repository.

   "Starting and stopping repositories (ISPF)" on page 65

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 HKTDFREP 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 65

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.

---

**IMS Tools KB server commands**

Tools Base 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 KB server. For more information, see
the Adding the repositories to the IMS Tools KB server topic in the IBM Tools Base for z/OS Configuration for IMS documentation.

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. For more information, see "Repository data set status types" on page 24.

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:
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:

The ADMIN command DISPLAY option using repository name HKT_INPUT to display the details of the INPUT repository.

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_00000000 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_00000000)
STOP/STO

Stop a repository.

Usage example:

The ADMIN command using option STOP and including the HKT_O0000000 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_O0000000)

Command output:
FPQ2014I - Repository start request initiated: HKT_O0000000 FPQ
BPE0032I ADMIN COMMAND COMPLETED FPQ
FPQ2021I - Repository started: HKT_O0000000

AUDIT

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

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:
FPQ2020I - Repository stop request initiated: HKT_O0000000 FPQ
BPE0032I ADMIN COMMAND COMPLETED FPQ
FPQ2015I - Repository stopped: HKT_O0000000

or

FPQ2103I - Audit level changed from HIGH to 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.

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
FPQ2032I - Audit logging resumed 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
The DUMPSTATS command with option NORESET prints repository server statistics to the DD FPQPRINT data set. The statistic counts are not reset to zero.

Command input:
F PS13SRVJ,DUMPSTATS NORESET

Command output:
BPE0032I DUMPSTATS NORESET COMMAND COMPLETED FPQ

DUMPTRACE
Print dump diagnostics to DD FPQPRINT.

F—server_job_name—DUMPTRACE

For more information, see Chapter 18, “BPE diagnostic trace,” on page 233.

Usage example:
The DUMPTRACE command dumps diagnostics to the DD FPQPRINT data set. For more information, see Chapter 18, “BPE diagnostic trace,” on page 233.

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_O0000000 FPQ
FPQ2017I - Repository closed: HKT_O0000000 FPQ
FPQ2013I - Closing repository: HKT_REGISTRY FPQ
FPQ2017I - Repository closed: HKT_REGISTRY
BPE0007I FPQ BEGINNING PHASE 1 OF SHUTDOWN
BPE0032I SHUTDOWN COMMAND COMPLETED FPQ
Part 3. Report services user 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:

- Finding and viewing reports
- Managing reports
- Product administration
- Report administration
Chapter 7. Finding and viewing reports

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

Topics:
- “Tools Base IMS Tools Knowledge Base main menu”
- “ISPF panel features and functions” on page 100
- “Finding reports by selection criteria” on page 105
- “Finding reports by job” on page 108
- “Finding reports by group” on page 109
- “Finding reports from the all available report list” on page 111
- “Finding reports from the recently viewed report list” on page 112
- “Finding reports by using the quick index number” on page 113
- “Finding related reports” on page 115
- “Viewing and printing reports” on page 117

Tools Base IMS Tools Knowledge Base main menu

You use the Tools Base IMS Tools Knowledge Base main menu to access and manage reports that are stored in the repository.

Administration Help

SERVER: FPQRDP01 Knowledge Base Ver 1.4.0
Option ==>_______________________________________________________________
Select an option or press END to exit.

*Knowledge Base Server Name.... FPQRDP01
Recon ID ................. _________ *History (y/n) Y

Display Database Report Output
1 List of databases with reports
2 List of DDnames with reports
3 List of IMS Systems with reports
4 List of Report jobs
5 List of Report types
6 List of Reports
7 List of Products
8 List reports using selection criteria
9 List of all reports available
10 List of recently viewed reports
11 Exit

Figure 40. Tools Base IMS Tools Knowledge Base main menu panel

Entering the server name

When you first use the Tools Base IMS Tools Knowledge Base main menu panel, you must enter the name of the Tools Base 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 Tools Base 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 . . . . . . . . . . TTREC11

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 Tools Base 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 Tools Base 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 Tools Base 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 KB report repository:
- For report selection criteria descriptions, see Table 25 on page 104.
- For RECON selection criteria descriptions, see Table 26 on page 104.
- For database selection criteria descriptions, see Table 27 on page 104.
Table 25. 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</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 26. 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 Tools Base 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 27. 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</td>
<td>The name of the partition or area associated with this report.</td>
</tr>
<tr>
<td>Part/Area (Partition/Area)</td>
<td></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 Tools Base 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>
</tbody>
</table>
Table 27. Database selection criteria descriptions (continued)

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<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 28. 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 29. 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/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/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/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/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 Tools Base IMS Tools Knowledge Base main menu panel. Press Enter.
   
   The Report Selection Criteria panel is displayed:
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.

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.

   ![Commands menu from the Report Selection Criteria panel](image)

   **Figure 43. Commands menu from the Report Selection Criteria panel**

   The Save Selection Criteria panel is displayed.

   ![Save Selection Criteria panel](image)

   **Figure 44. Save Selection Criteria panel**

   Enter a name and description and press ENTER to save the selection
   criteria or press END to exit.

   *Name......
   Description...

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.

4. From the **Commands** menu of Report Selection Criteria panel, select option 2
   (**Retrieve**). Press Enter.

   ![Commands menu from the Report Selection Criteria panel](image)

   **Figure 45. Commands menu from the Report Selection Criteria panel**

   The Retrieve Selection Criteria panel is displayed.

   For example:
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:

   ![Figure 46. Retrieve Selection Criteria panel](image)

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

   ![Figure 47. Report Selection Criteria panel](image)

---

**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 Tools Base 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

Tools Base 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 Tools Base 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:

```
View Help
SERVER: FPQRDP01 Database List Row 1 from 8
Command ===> Scroll ===> PAGE
Select a row action or press END to exit.
Row actions: S - List
Act Recon ID DBD Name Reports
- MYRECON1 AASTD7 6
- MYRECON1 CCSTD7 6
- MYRECON1 CUSTD7 6
- MYRECON1 DBD0001DA 30
- MYRECON1 SY11 30
- MYRECON2 AASTD7 6
- MYRECON2 CCSTD7 6
- MYRECON2 CUSTD7 6
****************************************************************************** Bottom of data ******************************************
```

Figure 50. 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.
   a.

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:
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 Tools Base 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 Tools Base IMS Tools Knowledge Base main menu panel. Press Enter.
   The Available Reports List panel is displayed:
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 Tools Base 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 Tools Base IMS Tools Knowledge Base main menu panel. Press Enter.
The Available Reports List panel is displayed:

<table>
<thead>
<tr>
<th>Server:</th>
<th>FPQRDP01</th>
<th>Reports List</th>
<th>Row 1 from 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Command</td>
<td>Scrolling</td>
<td>Scroll 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 Product</th>
<th>Product</th>
<th>Report Start</th>
<th>DBD</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDUNLOAD</td>
<td>DB CALL</td>
<td>20070331 22:32:09</td>
<td>AASTD7</td>
</tr>
<tr>
<td>HDUNLOAD</td>
<td>DB STATISTICS</td>
<td>20070331 22:32:58</td>
<td>CUSTD7</td>
</tr>
<tr>
<td>HDUNLOAD</td>
<td>SEGMENT STATISTICS</td>
<td>20070331 22:32:21</td>
<td>CCSTD7</td>
</tr>
</tbody>
</table>

Figure 54. 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 Tools Base 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:
3. Press Enter.

The Available Reports List panel is displayed. For example:

```
Figure 55. Report Selection Criteria panel
```

```
3.

The Available Reports List panel is displayed. For example:

```
Figure 56. Available Reports List panel
```

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 Tools Base IMS Tools Knowledge Base main menu panel.
   
   For example:
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:

```
SERVER: FPQRDP01 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 CCSTD7

Figure 57. Available Reports List panel
```

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

Help

Quick Index : AD0389FF121100000002
Product Name : High Performance UnLoad
Report Title : DB CALL STATISTICS
Cmp Code . : 000
RECON ID . : MYRECON1
RECON1 Name . : IMS1.RECON1
IMS ID . . . :
Database . : CUSTD7 Part/Area . : DD Name . :
Group Type . : Group Name . :
System ID . : STLABA6 User ID . . : RDEFA1
Job Name . : RDOADRPT Job Number . : 02833 Step Name . : SWRITE
Job Start . : 20070331 22:32:55
Step Start . : 20070331 22:32:56
Retention Days 0 Versions 0

Figure 58. Report Information panel
```

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 Tools Base IMS Tools Knowledge Base main menu panel.
For example:

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):

   ![Figure 59. Available Reports List panel](image)

<table>
<thead>
<tr>
<th>Act</th>
<th>Product</th>
<th>Report</th>
<th>Report Start</th>
<th>Job Nbr</th>
<th>Area/Part</th>
<th>DD Set</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDUNLOAD</td>
<td>DB</td>
<td>CALL STATISTICS</td>
<td>20070331 22:32:09</td>
<td>AASTD7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HDUNLOAD</td>
<td>DB</td>
<td>STATISTICS</td>
<td>20070331 22:32:58</td>
<td>CUSTD7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HDUNLOAD</td>
<td>SEGMENT</td>
<td>STATISTICS</td>
<td>20070331 22:32:21</td>
<td>CCSTD7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   **Figure 60. Example 1: Available Reports - Job panel**

   Example 2 (job step as column 3):

   ![Figure 60. Example 1: Available Reports - Job panel](image)
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 Tools Base 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 Tools Base IMS Tools Knowledge Base main menu panel.
   For example:
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:

   Figure 63. Available Reports List panel

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:
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:

```
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 . . .
```

Figure 65. Print Report message

```
SERVER: FPQRD01
Available Reports List
Report Printed
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 STATISTICS 20070331 22:32:58 CUSTD7
**************************************** Bottom of data ************************************************
```

Figure 66. Available Reports List panel
Chapter 8. Managing reports

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

Topics:
- “Archiving reports”
- “Deleting reports” on page 123
- “Managing deferred reports” on page 124
- “Importing reports” on page 126
- “Exporting reports” on page 132

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 Tools Base 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 143.

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:
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 Tools Base IMS Tools Knowledge Base main menu panel.
   
   For example:

   ```
   SERVER: FPQRDPO1 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 CCSTD7
   `************** Bottom of data ***************`

   **Figure 68. Available Reports List panel**

   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:
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 Tools Base IMS Tools Knowledge Base main menu panel.
   For example:

   ![Available Reports List Panel]

   **Figure 70. Available Reports List panel**

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.
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 Tools Base 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 Tools Base IMS Tools Knowledge Base ISPF user interface.

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

   ```
   Administration Help
   1. List Deferred Reports
   2. List Installed Products
   3. List Repositories
   4. List Recon Information
   5. Set retention for sensor data
   
   Figure 72. Administration menu options
   ```

   2. Select option 1 (List Deferred Reports). Press Enter.
   
   The Deferred Reports panel is displayed.
   
   For example:

   ```
   Help
   Select a row action or press END to exit.
   Row actions: C - Commit D - Delete
   
   Job Jobnum ID Date/Time Prod Name Rptcnt
   RDEDFR0 00938 C0908F66C6F26369 20070508 10:23:16 HDUNLOAD 1
   RDEDFR0 00938 C0908F67F39B3C69 20070508 10:23:17 HDUNLOAD 1
   RDEDFR0 00938 C0908F68FA315DAC 20070508 10:23:18 HDUNLOAD 1
   
   Figure 73. Deferred Reports panel
   ```

   3. Use the Commit row action (C) to make the reports available from the Tools Base IMS Tools Knowledge Base ISPF user interface. Press Enter.
   
   The Report ID value changes to Committed.
   
   For example:

   ```
   Help
   Select a row action or press END to exit.
   Row actions: C - Commit D - Delete
   
   Job Jobnum ID Date/Time Prod Name Rptcnt
   RDEDFR0 00938 Committed 20070508 10:23:16 HDUNLOAD 1
   RDEDFR0 00938 C0908F67F39B3C69 20070508 10:23:17 HDUNLOAD 1
   RDEDFR0 00938 C0908F68FA315DAC 20070508 10:23:18 HDUNLOAD 1
   
   Figure 74. 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:

```
Importing reports

You can import reports into the Output repository.

Reports generated by products enabled to participate in the Tools Base 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**

```
IMPORT PRODUCTID=xx REPORTID=xx RECON=(xx,xxxxxxx), INDEX=(IMSID=xx)

,,DBD=xx,,PART=xx,,DD=xx,,GRPTYPE=xx,GRPNAME=xx,,OLRSET=xx)

,,USERID=x,,JOBNAME=x,,JOBNUMBER=xxxx,,JOBSTRT=datetime

,,STEPNAME=xxxxxxx,,STEPSTRT=datetime,,RPTSTRT=datetime
```

**Parameter reference for HKTJIMPT**

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

**Table 30. Parameters for EXEC**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITKBSRVR</td>
<td>The name of the Tools Base 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 31. 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 Tools Base IMS Tools Knowledge Base. This parameter is required.</td>
</tr>
</tbody>
</table>

Refer to Table 33 on page 131
### Table 31. 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 Tools Base IMS Tools Knowledge Base for the specified PRODUCTID. This parameter is required.</td>
</tr>
</tbody>
</table>
| RECON=    | Associates this report with a RECON environment.  
  (DSN | DDN | RCN | NONE, value)  
  DSN,value  
  Specifies a 44-character data set name that is used to identify the RECON environment. The data set name must be provided in value.  
  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 32 on page 129. 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 31. Parameters for SYSIN DD (continued)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>JOBSTRT</td>
<td>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.</td>
</tr>
<tr>
<td>STEPNAME</td>
<td>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 STEPFSTRT. This parameter is optional.</td>
</tr>
<tr>
<td>STEPFSTRT</td>
<td>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.</td>
</tr>
<tr>
<td>RPTSTRT</td>
<td>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.</td>
</tr>
</tbody>
</table>

Table 32. 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>
</tbody>
</table>
Table 32. Sub-parameters for INDEX (continued)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
</table>
| GRPTYPE, GRPNAME | Specify only if the report was generated for a specific RECON group type and group name.  
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  
These parameters are optional. If one of these parameters is specified, the other parameter must also be specified. |
| DBD          | The database to associate this report with.  
The value can be a maximum of 8 characters in length.  
This parameter is optional. |
| PART | AREA=xxxxxxxxx | The partition or area to associate this report with.  
The value can be a maximum of 8 characters in length.  
This parameter is optional. |
| DD           | 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. |
| OLRSET       | 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. |

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 33. 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>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

```plaintext
//HKTJIMPT JOB (ASYSUID,020,090,IDIA),'USER NAME',CLASS=A,TIME=10,
// REGION=0M,MSGCLASS=H,MSGLEVEL=(1,1),NOTIFY=ASYSUID
//* ----------------------------------------------------------------
//* 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
//* LIBRARY
//* 3. CHANGE "SRVRNAME" 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'
```
Exporting reports

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

Reports generated by products enabled to participate in the Tools Base 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 34. Parameters for EXEC

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

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

Table 35. 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 Tools Base IMS Tools</td>
</tr>
<tr>
<td></td>
<td>Knowledge Base.</td>
</tr>
<tr>
<td></td>
<td>This parameter is required.</td>
</tr>
<tr>
<td></td>
<td>Refer to Table 36 on page 135</td>
</tr>
<tr>
<td>REPORTID</td>
<td>Two-character ID of the report that is defined to Tools Base IMS Tools</td>
</tr>
<tr>
<td></td>
<td>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</td>
<td>NO</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</td>
</tr>
<tr>
<td></td>
<td>than the DCB attributes of the report. Ensure that the data set has the</td>
</tr>
<tr>
<td></td>
<td>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</td>
</tr>
<tr>
<td></td>
<td>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</td>
</tr>
<tr>
<td></td>
<td>index values. $m$ is specified as $n$. Both $n$ and $m$ must specify relative</td>
</tr>
<tr>
<td></td>
<td>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</td>
</tr>
<tr>
<td></td>
<td>value is 0.</td>
</tr>
<tr>
<td></td>
<td>This parameter is optional.</td>
</tr>
</tbody>
</table>
### Table 35. Parameters for SYSIN DD (continued)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<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>
<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 report.</td>
</tr>
<tr>
<td>GRPNAME=xxxxxxx</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 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 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>
</tbody>
</table>
Table 35. Parameters for SYSIN DD (continued)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PART</td>
<td>AREA=xxxxxxxx</td>
</tr>
<tr>
<td>DD=xxxxxxxx</td>
<td>Specifies the database DD name of the members to be selected for this report. The value can be a maximum of 8 characters. 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 36. 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>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
//* ----------------------------------------------------------------
//* 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.
```
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>Grp</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>ITKBPR12</td>
<td>SYSP12</td>
<td>MYRECON1</td>
<td>IT02</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRT</td>
<td>IMS RE</td>
<td>IMS RE Summary</td>
<td>SY12</td>
<td>ITKBPR12</td>
<td>SYSP12</td>
<td>MYRECON1</td>
<td>IT02</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRT</td>
<td>IMS RE</td>
<td>IMS RE Summary</td>
<td>SY12</td>
<td>ITKBPR12</td>
<td>SYSP12</td>
<td>MYRECON1</td>
<td>IT02</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRT</td>
<td>IMS RE</td>
<td>IMS RE Summary</td>
<td>SY12</td>
<td>ITKBPR12</td>
<td>SYSP12</td>
<td>MYRECON1</td>
<td>IT02</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRT</td>
<td>IMS RE</td>
<td>IMS RE Summary</td>
<td>SY12</td>
<td>ITKBPR12</td>
<td>SYSP12</td>
<td>MYRECON1</td>
<td>IT02</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRT</td>
<td>IMS RE</td>
<td>IMS RE Summary</td>
<td>SY12</td>
<td>ITKBPR12</td>
<td>SYSP12</td>
<td>MYRECON1</td>
<td>IT02</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRT</td>
<td>IMS RE</td>
<td>IMS RE Summary</td>
<td>SY12</td>
<td>ITKBPR12</td>
<td>SYSP12</td>
<td>MYRECON1</td>
<td>IT02</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>HKTJEXPT</td>
<td>HKTJEXPT ended with RC=0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

User's Guide
Chapter 9. Product administration

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

Topics:
- “Removing a product”
- “Removing a product release” on page 139
- “Removing all subscriptions and reports for a product” on page 140

Removing a product

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

Procedure

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

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

   ![Administration Help](image)

   Figure 76. Administration menu options

   The Installed Products List panel is displayed.
   For example:
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:

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 Tools Base 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 Tools Base IMS Tools Knowledge Base environment, complete the following steps:

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

   ![Administration menu options](image)

2. Select option 2 (*List Installed Products*). Press Enter.
   
   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](image)

   **Figure 80. Administration menu options**

   **Figure 81. 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:

   ![Figure 82. Only One Release Found for This Product message]

   **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 82. 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 Tools Base IMS Tools Knowledge Base environment.

**Procedure**

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

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

   ![Figure 83. Administration menu options]

   **Administration Help**
   1. List Deferred Reports
   2. List Installed Products
   3. List Repositories
   4. List Recon Information
   5. Set retention for sensor data

   **Figure 83. Administration menu options**

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

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 Tools Base IMS Tools Knowledge Base main menu to perform report administration tasks.

Topics:
- "Report retention overview"
- "Changing the default report retention values" on page 144
- "Changing the retention values for individual reports" on page 146
- "Resetting report retention values to the product default" on page 148
- "Synchronizing the repository with displayed retention values" on page 150
- "Enabling and disabling report recording" on page 151

Report retention overview

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

IMS Tools products in the Tools Base 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 Tools Base 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 146.

**Procedure**

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

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

   ![Administration menu options](image)

   **Figure 86. 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 87. Installed Products List panel**

3. Use the **Subscriptions** (Sub) 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:
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 Tools Base IMS Tools Knowledge Base.

You can change the product's default report retention values. See "Changing the default report retention values" on page 144

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 Tools Base IMS Tools Knowledge Base main menu panel.

   For example:

The Installed Products List panel is displayed.

For example:

```
<table>
<thead>
<tr>
<th>Act</th>
<th>Product Name</th>
<th>Product Release</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HIGH PERFORMANCE UNLOAD</td>
<td>020200</td>
</tr>
<tr>
<td></td>
<td>IMS HP POINTER CHECKER</td>
<td>020200</td>
</tr>
</tbody>
</table>
```

**Figure 90. 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:

```
<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>** PRODUCT DEFAULTS **</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 91. 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 Tools Base 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 Tools Base IMS Tools Knowledge Base main menu panel.
   
   For example:

   ![Administration Help](image)

   *Figure 92. Administration menu options*

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

   For example:
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:

```
Figure 93. 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:

```
Figure 93. Installed Products List panel
```

```
Figure 94. Report Subscriptions List panel
```

4. From the **Global_Actions** menu, select option 1 (**RESET all retentions to product defaults**).

For example:

```
Figure 95. Global_Actions menu options
```

5. Press Enter.

The panel is refreshed and shows the default product retention values applied to all reports.

```
Figure 96. Report Subscriptions List panel
```

Chapter 10. Report administration 149
Synchronizing the repository with displayed retention values

The retention values that are set for reports are automatically conveyed to the Tools Base 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 Tools Base IMS Tools Knowledge Base main menu panel.
   
   For example:

   ```
   Administration Help
   1. List Deferred Reports
   2. List Installed Products
   3. List Repositories
   4. List Recon Information
   5. Set retention for sensor data
   ```

   Figure 96. Administration menu options

   
   The Installed Products List panel is displayed.
   
   For example:

   ```
   View Help
   SERVER: FPQRDP01 Installed Products List Row 1 to 2 of 2
   Command ==== Scroll == PAGE

   Select a row action or press End to exit.
   Row Actions: S Subs List RP Remove Product RR Remove Release RS Remove Subs

   Act Product Name Product Release
   ___ HIGH PERFORMANCE UNLOAD 020200
   ___ IMS HP POINTER CHECKER 020200
   ***************************************************** Bottom of data ********************************************
   ```

   Figure 97. 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:

   ![Report Subscriptions List panel](image)

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

   For example:

   ![Global_Actions menu options](image)

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 Tools Base 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 Tools Base 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 Tools Base IMS Tools Knowledge Base main menu panel.
   For example:

   Administration Help
   
   1. List Deferred Reports
   2. List Installed Products
   3. List Repositories
   4. List Recon Information
   5. Set retention for sensor data

   **Figure 100. Administration menu options**

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

   View Help
   
   SERVER: FPQRDP01  Installed Products List  Row 1 to 2 of 2
   Command ===>  Scroll ===> PAGE

   Select a row action or press End to exit.
   Row Actions: S Subs List RP Remove Product RR Remove Release RS Remove Subs

<table>
<thead>
<tr>
<th>Act</th>
<th>Product Name</th>
<th>Product Release</th>
</tr>
</thead>
<tbody>
<tr>
<td>___</td>
<td>HIGH PERFORMANCE UNLOAD</td>
<td>020200</td>
</tr>
<tr>
<td>___</td>
<td>IMS HP POINTER CHECKER</td>
<td>020200</td>
</tr>
</tbody>
</table>

   **Figure 101. 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:
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 utilities IMS Tools Knowledge Base utilities.

Topics:
- IMS Tools Discovery Utility
- Import and Export Utility
Chapter 11. IMS Tools Discovery Utility

You can use the IMS Tools Discovery Utility (HKTDISCO) to create an inventory of IMS databases and DBRC groups in the IMS Tools KB 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 or DBRC change for databases or groups.

Using the Discovery Utility

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

Procedure

1. Copy the HKTDISCO member from smphlq.SHKTSAMP and modify it.

   //HKTDISCO JOB <JOB CARD PARAMETERS>
   //STEP1 EXEC PGM=HKTDISCO,
   //   PARM=ITKBSRVR='yourITKBservername',
   //     'RECONID='yourRECONID',
   //     'FUNC=CREATE|DELETE')
   //STEPLIB DD DISP=SHR,DSN=smphlq.SHKTLIB
   // 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 and RECONs that the utility uses to discover IMS databases 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.

   ins.reslib
   The IMS RESLIB data set name.
2. Submit the job.
Chapter 12. 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” on page 172
- “Scenario: Exporting sensor data from the BSN_SENSOR repository” on page 173
- “Scenario: Exporting all Autonomics Director data from the Autonomics Director repository” on page 174
- “Scenario: Exporting RECON data from the HKT_INPUT repository” on page 175
- “Scenario: Exporting product registration data from the HKT_REGISTRY repository” on page 176
- “Scenario: Trimming a version by using the Import and Export Utility” on page 177

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 IBM Tools Base for z/OS V1.5 compliant. For more information, see Chapter 3, “Configuring an existing installation of IMS Tools KB (migration),” on page 17.
- 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 KB 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:

```jcl
//EXPORT01 EXEC PGM=HKTIMEX0,REGION=0M,
   /P ARM='EXPORT GROUP=srvrname REPOS=NONE'
//STEPLIB DD DISP=SHR,DSN=itkbhlq.SHKTLOAD
//SYSLOG DD SYSOUT=*
   //REPORT
//SYSPRINT DD SYSOUT=*
   //LOGGING
//SYSENBEND DD SYSOUT=*
```

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2. Submit the job.

Import and Export Utility sample JCL

The Tools Base 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 37. 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 BSNSENSOR 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
/*
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 the Import and Export Utility

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

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.

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 Data repository.

HKT_REGISTRY
The Registry repository.

HKT_O
The standard Output repository where \(onn\) is the name of the output repository.

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

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 must adhere to the syntax rules of a keyword or value pair. The comment_statement 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 MAXDSIZE(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. If you do not specify the COMMIT keyword in the JCL, the Import and Export Utility assumes a value of COMMIT=YES.

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.

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.

**FIELD=(keyword1=value1, keyword2=value2, ... keywordN=valueN)**
This optional keyword specifies the FIELD name, where field_name is a maximum 64-character name.

A named entity that can contain the following keyword values:

**AND | OR**
This value specifies the Boolean AND or OR operation. The OR operation takes precedence over the AND operation.

**NAME=field_name**
This required keyword specifies a field name that is either defined in the current or global project. The field_name contains the RID location and the data type to be validated or compared.

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

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

Valid operator_name values are:

**EQUAL**
Test that operators are equal. The EQUAL keyword can be specified as either EQUAL or EQ.

**NOT_EQUAL**
Test that operators are not equal. The NOT_EQUAL keyword can be specified as either NOT_EQUAL or NE.

**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 LESS_THAN_OR_EQUAL or LTE.

**LESS_THAN**
Test that operators are less than each other. The LESS_THAN keyword can be specified as either LESS_THAN or LT.

**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 GREATER_THAN_OR_EQUAL or GTE.
GREATER_THAN
Test that operators are greater than each other. The
GREATER_THAN keyword can be specified as either
GREATER_THAN or GT.

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
cmpared 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 must be defined
as an entry in the RECON registry.

The RECON_DSNAME keyword can be specified as
RECON_DSNAME, RECON_DSN, or RD$.

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

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=

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=

This keyword specifies an overriding length value for string type fields. The length is expressed as a numeric value. The length 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=

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. This 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 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 padded with blanks to make it 40 characters long,
  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` 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. Whether you specify the HISTORY keyword in the JCL, the Import and Export Utility assumes a value of HISTORY=YES.

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.

**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 ISEMP&T; keyword can be specified as either ISEMP&T; or ISEMPT;.

**YES** Verify that the repository is empty before the import operation.

**NO** Do not verify whether the repository is empty before the import operation.

**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.

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 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.

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.
**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.

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” on page 172
- “Scenario: Exporting sensor data from the BSN_SENSOR repository” on page 173
- “Scenario: Exporting all Autonomics Director data from the Autonomics Director repository” on page 174
- “Scenario: Exporting RECON data from the HKT_INPUT repository” on page 175
- “Scenario: Exporting product registration data from the HKT_REGISTRY repository” on page 176
- “Scenario: Trimming a version by using the Import and Export Utility” on page 177
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=SYSDA, SPACE=(CYL,(10)),
      // 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=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:

```/*
**   EXPORT AUTONOMICS DIRECTOR DISCOVERY MEMBERS
**
**EXPORT GROUP=FPQSRVT3 REPOS=IAV_AUTODIR
** HISTORY=NO MAXDSIZE(100)
** PROJECT=DISCOVERY FIELD=(NAME=DISC_MTYPE,STRING=DISC) =('DISC' members)
** FIELD=(NAME=DISC_RECON_STRING,STR=$ADUT3) =('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:
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:

```plaintext
//IMEXFILE DD DSN=EXDDSCN.IMEX.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:

```plaintext
SYSABEND DD SYSOUT=*
```

d. Customize the SYSIN DD statement, which contains the control statements. For example:

```plaintext
EXPORT GROUP=FPQSRVT3 REPOS=BSN_SENSOR
HISTORY=NO MAXDSIZE(1G)
PROJECT=SENSOR_DATA
FIELD=(NAME=DATABASE STRING=DISC)
```

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 that are 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:
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.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) C=(Autonomics Director all types)
   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 Autonomics 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.

   MAXDSIZE(100) Indicates that members that are printed to the SYSPRINT output are limited to 100 GB of RMD data.

   PROJECT=RCNREG Indicates that the PROJECT selected is RCNREG, a PROJECT that selects RECON data.

**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:
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
   //EXEC PGM=HKTIMEX0,REGION=30M,DISP=SHR,DSN=IMSTESTL.TNUC0
   //PARM='EXECUTION,REPOS=HKT_REGISTRY,HISTORY=NO MAXDSIZE(1G),
   //PROJECT=PRODREG'
   //SYSPRINT DD SYSOUT=*
   //IMEXFILE DD DSN=&&TRIM,
   // DISP=(NEW,CATLG),
   ```
3. Submit the job.
4. Verify on the IMS Tools KB 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:
• Troubleshooting and diagnostics
• IMS Tools KB reason codes (FPQ)
• IMS Tools KB error messages (FPQ)
• Report services return and reason codes (HKT)
• Report services and migration error messages (HKT)
• BPE diagnostic trace
• IBM Service Repository abend codes
Chapter 13. Troubleshooting and diagnostics

Troubleshooting and diagnostics information.

Topics:
• **Gathering diagnostic documentation**

Gathering diagnostic documentation

The following information provides guidelines for gathering proper diagnostic documentation when reporting a problem with Tools Base IMS Tools Knowledge Base to IBM Software Support.

Provide the following information for every Tools Base 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 \texttt{user.ITKB.*} where \texttt{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)
Chapter 14. IMS Tools KB reason codes (FPQ)

This reference section provides detailed information about the Tools Base IMS Tools Knowledge Base (FPQ) reason codes.

Any reason code not included in the following table is an internal error that requires assistance from IBM Software Support.

**Table 38. 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 15. IMS Tools KB error messages (FPQ)

The explanations and user responses provided in this error message reference can help you diagnose, troubleshoot, and solve Tools Base IMS Tools Knowledge Base problems.

IMS Tools KB messages have the following format:

`FPQnnnnx text`

Where:

- **FPQ**
  - Indicates that the message was issued by IMS Tools KB.

- **nnnn**
  - Is the message identification number.

- **x**
  - Indicates the severity of the message as follows:
    - A indicates that operator intervention is required before processing can continue.
    - E indicates that the job step is about to terminate abnormally.
    - I indicates that the message is for information only.
    - W indicates that the message is a warning to alert you to a possible error condition.

**Message Variables**

In the message text, there can be lowercase variables (for example, `xxx`). The variables represent values when the message appears such as:

- Data in a data set
- A return code
- An error code

**Message Documentation**

In addition to message number and message text, information for each message includes the following:

- **Explanation:**
  - The Explanation section explains what the message text means, why it occurred, and what its variable entry fields are (if any).

- **System Action:**
  - The System Action section explains what the system will do next.

- **User Response:**
  - The User Response section describes whether a response is necessary, what the appropriate response is, and how the response will effect the system or program.

<table>
<thead>
<tr>
<th>Message Number</th>
<th>Message Text</th>
<th>Explanation</th>
<th>System Action</th>
<th>User Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>FPQ0001E</td>
<td><code>Server terminating due to an error condition.</code></td>
<td>An unsupported error condition has occurred. The server must terminate because its integrity is unknown.</td>
<td>Processing ends unconditionally and the server terminates.</td>
<td>Contact IBM Software Support.</td>
</tr>
</tbody>
</table>
Feedback words: IBM diagnostic and debugging information.

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: See FPQ0010E.

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 I. 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
ACBERFLG=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.

ACBERFLG
The reason code in the ACBERFLG 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.
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 makes 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, Service Repository will terminate.

**User response:** None.

---

**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.thmijtu

**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.

**data_set_type**  
Specifies whether the data set was the primary or secondary, the RID or the RMD.

**System action:** Information message only.

**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 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
  • CSRCESRV 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
System action: The RDS is discarded.

User response: 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 RDS\textsubscript{n} status has been changed to \textit{status}. Repository...: \textit{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:
\textit{RDS\textsubscript{n}} The repository data set number 1, 2, or 3.
\textit{status} The repository data set type SPARE or DISCARD.

System action: The server continues.

User response: None.

FPQ0038I \textit{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 \textit{RDS\textsubscript{n}} has been assigned \textit{status}. Repository...: \textit{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:
\textit{RDS\textsubscript{n}} The repository data set number 1, 2, or 3.
\textit{status} The repository data set type COPY1 or COPY2.

System action: The server continues.

User response: None.

FPQ0040E Repository cannot be started: \textit{reason}. Repository...: \textit{repository\_name} RDS\textsubscript{1} status.: \textit{status} RDS\textsubscript{2} status.: \textit{status} RDS\textsubscript{3} status.: \textit{status}

Explanation: The repository cannot be started due to \textit{reason}.

Where:
\textit{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.

System action: The repository is stopped and cannot be accessed.

User response: Take the appropriate action depending on \textit{reason}:

SPARE RDS required
Reset the discarded data sets and change the associated repository data set status to SPARE.

Tip: If the data sets were discarded because they could not be extended, increase the data sets size.

No COPY1 or COPY2 RDS
Perform the following steps:

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 RDS\textsubscript{1} as COPY1 and RDS\textsubscript{2} as COPY2.

FPQ1001E Configuration error: \textit{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
xxx xxx
Return Code: xxx
Description: xxx

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= xxxx
Explanation:
System action: None.
User response: None.

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:
xxxxxx
Explanation:
System action:
User response: Provide a valid XCF group name.

FPQ1008E  Invalid number of XCF threads specified: xxxx
Valid range is 4 through 99.
Explanation:
System action:
User response: Provide a valid range.

FPQ1009E  Invalid core size specified: xxxx
Valid range is 32 through 4096 (K).
Explanation:
System action:
User response: Provide a valid range.

FPQ1010E  Invalid SAF class name specified: xxxx
Explanation:
System action:
User response: Provide a valid SAF class name.

FPQ1011E  Invalid number of VSAM buffers specified: xxxx
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:
FPQ1013E Invalid TCP/IP port number specified:
xxxxx
Valid range is 0 through 65535.

Explanation: The value specified in the AUDIT_ID server configuration parameter is invalid. The value must be in the range 160 - 255.

Where:

xxxxx 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.

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.

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.

FPQ1017E 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.

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**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: *repository*

**Explanation:** Information message only.

**System action:** None.

**User response:** None.

**FPQ2013I**  Closing repository: *repository*

**Explanation:** Information message only.

**System action:** None.

**User response:** None.

**FPQ2014I**  Repository start request initiated: *repository*

**Explanation:** Information message only.

**System action:** None.

**User response:** None.

**FPQ2015I**  Repository stopped: *repository*

**Explanation:** Information message only.

**System action:** None.

**User response:** None.

**FPQ2016I**  Repository opened: *repository*

**Explanation:** Information message only.

**System action:** None.

**User response:** None.

**FPQ2017I**  Repository closed: *repository*

**Explanation:** Information message only.

**System action:** None.

**User response:** None.

**FPQ2018E**  Unable to open repository.

**Explanation:** Catalog definition member is in use.

**System action:** None.

**User response:** Retry at a later time.
**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:**

- If the message is issued because the Catalog repository is unavailable, the server terminates.
- If the message is issued because of a suppressed ADMIN command, there is no system action.

**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.

---

**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.

**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
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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=IXCMSGORNOTARGETNOTVALID for the IXCMSGO macro in z/OS MVS Programming: Sysplex Services Reference.

FPQ2100I ADMIN DISPLAY repository repository - Last updated date/time: date_time userID 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.
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**FPQ2101I**  
ADMIN DISPLAY repository RDSn:  
- Index (RID) . : RID_data_set_name  
- Member (RMD) . : RMD_data_set_name  
- Status . . . : status  

**Explanation:** This message shows the result of the following console z/OS MODIFY ADMIN command:  
F server,ADMIN DISPLAY(repository)  

This is a supplement to FPQ2100I and is displayed once for each defined repository data set pair.  

In the message text:  
  
RDSn  Indicated 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**  
repository repository_status update_date  
update_userID RDS1_status RDS2_status  
RDS3_status  

**Explanation:** This message shows the result of the following console z/OS MODIFY ADMIN command:  
F server,ADMIN DISPLAY()  

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**  
Audit level changed from old_level to new_level  

**Explanation:** This message shows the result of the following console z/OS MODIFY AUDIT command:  
F server,AUDIT LEVEL(new_level)  

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**  
Audit level unchanged from old_level  

**Explanation:** This message shows the result of the following console z/OS MODIFY AUDIT command:  
F server,AUDIT LEVEL(new_level)  

In the message text:  
  
old_level  Indicates the old audit level of the repository.  

**System action:** Processing continues.  
**User response:** None.  

**FPQ2105I**  
In-core user security profiles refreshed  

**Explanation:** This message shows the result of the following console z/OS MODIFY SECURITY command:  
F server,SECURITY REFRESH  

**System action:** Processing continues.  
**User response:** None.  

**FPQ2106E**  
Security request rejected, CLASS not defined  

**Explanation:** This message shows the result of the following console z/OS MODIFY SECURITY command:  
F server,SECURITY 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.

FPQ3001I  STACKING PC - FPQ SUBSYSTEM INSTALLED

Explanation: The Service Repository subsystem has been installed and its initialization routine FPQCSSI2 has established a stacking PC.

See FPQ3005 description.

System action: None.

User response: None.

FPQ3002E  STACKING PC - FPQ SUBSYSTEM NOT FOUND

Explanation: The subsystem with the subname FPQ could not be located in the systems SSCT.

System action: Subsystem initialization cannot take place. All API calls will fail with a reason code RSN_FPQSS_NOT_FOUND (x'081')

User response: Make sure the correct SUBSYS command has been issued, or the correct entry placed into the parameter library member IEFSSNxx.

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'115')

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'110')

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.

FPQ3101E  ENTER SETPROG DELETE AND ADD COMMANDS, REPLY 'C' WHEN COMPLETED

Explanation: This is the WTOR 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: None.

User response: Analyze the abend dump.

FPQ3101E  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: None.

User response: Analyze the abend dump.

FPQ3101E  XCF SRB FAILURE: FPQSMSRB - TXXXX REASON=xxxxxxxx

Explanation: XCF group exit (FPQSMSRB) hardcoded WTO message. Either an IXCMXGI (XCF input message) or IXCMXGO (XCF output message) macro has failed. This is not expected to occur, so this SRB event is recorded through this WTO.

System action: None.

User response: Check with Systems Programming, Increase XCF control blocks.

FPQ3101E  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 FRPMSRB (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.
User response: Check that the client and the server are both running at the same maintenance level. Contact IBM Software Support.

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: Verify that the client and the server are both running at the same maintenance level. Contact IBM Software Support.

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.

Explanation: While attempting client FPQ client object cleanup, the FPQ client-side RESMGR exit (FPQCRMGR) issued an FPQ stacking PC (FPQCXCF2) request, but this request failed.

In the message text:

rc Indicates the return code for this error.
rsn Indicates the reason code for this error.
fc Indicates the CSSP function code. This code is not defined in an API macro and is only of value to IBM Software Support.

xxxxxxx Indicates the feedback that was captured for diagnostic purposes.

System action: RESMGR processing attempts to continue.

User response: Contact IBM Software Support.

Explanation: While attempting client FPQ object cleanup, the FPQ client-side RESMGR exit (FPQCRMGR) failed in its attempt to delete the RESMGR for the task.

In the message text:

rc Indicates the return code from the RESMGR macro.

xxxxxxx Indicates the TCB of the task where the RESMGR is running.

System action: RESMGR processing attempts to continue.

User response: Contact IBM Software Support.

Explanation: Service repository API function xxxxx failed with reason code xxx.

rc Indicates the return code for this error.
rsn Indicates the reason code for this 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 xxxxxx 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.
System action: Processing is stopped at the point of error.
User response: Try resubmitting batch commands from the one in error.

FPQ4006E The FPQ server is busy, try again later
Explanation: 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.

FPQ4000E 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 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 xxxx 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 xxxx 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 xxxx 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 The parameter 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 and resubmit job.

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. Refer to the FPQ configuration parameter member to see which data sets are in use by the catalog.

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.
FPQ4732W  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.

FPQ4733W  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.

FPQ4734W  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.

FPQ4735E  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.

FPQ4736I  The catalog is empty
Explanation: There are no repositories defined in the catalog.
System action: None.
User response: None.

FPQ4737I  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.

FPQ4739W  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.

FPQ4740W  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.

FPQ4741W  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 • FPQ8001E**

**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 `xxxx`

**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 16. Report services return and reason codes (HKT)

This reference section provides detailed information about the report services (HKT) return and reason codes reported by IMS Tools products.

Errors not listed in this table are internal errors and should be reported to IBM Software Support.

Table 39. Return and reason codes reported by IMS Tools

<table>
<thead>
<tr>
<th>Return code</th>
<th>Reason code</th>
<th>Message text</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 (04)</td>
<td>27 (1B)</td>
<td>HKT2300E No RECON entries in the registry</td>
</tr>
<tr>
<td>28 (1C)</td>
<td>12 (0C)</td>
<td>HKT2301E Unable to connect – incorrect server name</td>
</tr>
<tr>
<td>32 (20)</td>
<td>01 (01)</td>
<td>HKT2302E Insufficient access authority to repository</td>
</tr>
<tr>
<td>4 (04)</td>
<td>38 (26)</td>
<td>HKT2303E Report defined as RECORD=N</td>
</tr>
<tr>
<td>8 (08)</td>
<td>105 (69)</td>
<td>HKT2304E RECON not found</td>
</tr>
<tr>
<td>12 (0C)</td>
<td>37 (25)</td>
<td>HKT2305E Product not defined</td>
</tr>
<tr>
<td>12 (0C)</td>
<td>40 (28)</td>
<td>HKT2306E Report not defined</td>
</tr>
<tr>
<td>12 (0C)</td>
<td>76 (4C)</td>
<td>HKT2307E Product not defined to record reports</td>
</tr>
<tr>
<td>12 (0C)</td>
<td>42 (02a)</td>
<td>HKT2309E Connection to I/O repository failed</td>
</tr>
</tbody>
</table>
Chapter 17. Report services and migration error messages (HKT)

The explanations and user responses provided in this error message reference can help you diagnose, troubleshoot, and solve Tools Base IMS Tools Knowledge Base report services problems.

IMS Tools KB report services messages have the following format:

\texttt{HKTnnnxx text}

Where:

\texttt{HKT}

Indicates that the message was issued by IMS Tools KB.

\texttt{nnnn}

Is the message identification number.

\texttt{x}

Indicates the severity of the message as follows:

- \texttt{A} indicates that operator intervention is required before processing can continue.
- \texttt{E} indicates that the job step is about to terminate abnormally.
- \texttt{I} indicates that the message is for information only.
- \texttt{W} indicates that the message is a warning to alert you to a possible error condition.

\textbf{Message Variables}

In the message text, there can be lowercase variables (for example, \texttt{xxx...}). The variables represent values when the message appears such as:

- Data in a data set
- A return code
- An error code

\textbf{Message Documentation}

In addition to message number and message text, information for each message includes the following:

\textbf{Explanation:} The Explanation section explains what the message text means, why it occurred, and what its variable entry fields are (if any).

\textbf{System Action:} The System Action section explains what the system will do next.

\textbf{User Response:} The User Response section describes whether a response is necessary, what the appropriate response is, and how the response will effect the system or program.

\begin{itemize}
  \item \textbf{HKTD470E} HKTRERD I-call failed
  \textbf{Explanation:} The Discovery Utility made an I-call to HKTRERD and received a non-zero return code.
  \textbf{System action:} The job abends with U4075.
  \textbf{User response:} Contact IBM Software support and provide the job log.
  \item \textbf{HKTD471E} No RECONID found in ITKB
  \textbf{Explanation:} The Discovery Utility made an I-call to
\end{itemize}
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.

---

**HKTD472E HKTRERD G-call failed**

**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 nnnnnnn parameter not found**

**Explanation:** The required nnnnnnn 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:** Contact IBM Software support and provide the job log.

---

**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 DBDDLIR-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:


nnnnnn
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:


nnnnnn
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 GPTIKB-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.

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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.

Explanation: The execution parameter has been omitted from the HKTJIMPT job stream.

User response: Add the execution parameter that specifies the ITKBSRVR parameter.

HKT2004I  EXEC parameter specified - xxxxxx

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.

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(nn).

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(nn) value in the message lists the count of the index parameters in the input.

HKT2017E  Group type/name must be specified together. INDEX(nn).

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. 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, JOB START must all be specified.

Explanation: One of the following parameters was specified without the others: USERID, JOBNAME, JOBNUM, or JOBSTRT.

User response: Ensure that USERID, JOBNAME, JOBNUM, and JOBSTRT are all specified.

HKT2022E  JOB start date is greater than today's date or has an invalid format.

Explanation: The specified JOBSTRT value is incorrect.

User response: Ensure that the JOBSTRT 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 STEPSTRT parameter was found without the other. Both parameters must be specified.

User response: Ensure that both the STEPNAME and STEPSTRT parameters are specified.

HKT2024E  STEP start date is greater than today's date or has an invalid format.

Explanation: The specified STEPSTRT value is incorrect.

User response: Ensure that the STEPSTRT 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 RPTSTRT value is incorrect.

User response: Ensure that the RPTSTRT 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.

**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 file 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.

**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.

**HKT2039E**  The xxx 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  nnmnnnn REPORT
records written  nnmnnn

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 - 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 HKTJIMPT.

HKT2062E  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 HKTJIMPT.

HKT2063E  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.

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 - 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.

HKT2066E  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 that was
specified is within the allowable range.

HKT2067E  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 correctly
specified.

HKT2068E  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 the value that was
specified is one of the allowed values.

HKT2069E  Keyword parameter specified more than
once - xxxxxx

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.

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 - xxxxxx

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=xx

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=xx; PRODUCTID=xx

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=xxxxxx

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=xxxxxx

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.

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**HKT2127E**

**Internal error, bad return - container list sizing; R15=xxxxxx; RSN=xxxxxx**

*Explanation:* This is an internal error.

*User response:* Contact IBM Software Support.

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**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.

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**HKT2132E**

**Bad return from get next report; R15 = xxxxxx; RSN = xxxxxx**

*Explanation:* This is an internal error.

*User response:* Contact IBM Software Support.

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**HKT2133E**

**Internal error, bad get 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.

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**HKT2136E**

**Bad return code from add product; R15 = xxxxxx; RSN = xxxxxx**

*Explanation:* This is an internal error.

*User response:* Contact IBM Software Support.

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**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=xxxxxxx; RSN=xxxxxxx**

*Explanation:* This is an internal error.

*User response:* Contact IBM Software Support.

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**HKT2139E**

**Incorrect message requested message xxx not found**

*Explanation:* This is an internal error.

*User response:* Contact IBM Software Support.

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**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:*

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**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 sever 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=xxxxxx
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 SYSTEM 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 REPORTID specified is invalid; REPORTID=xxxxxxxx
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=xxxxxxx; R0=xxxxxxx
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:** The IBM-generated internal table could not be located.

**User response:** Add this module to the execution library.

**HKT2177E**  Connect failed for requested REPOSITORY; REPOSITORY=xxxxxx

**Explanation:** A connection attempt was made with the specified REPOSITORY and it was unsuccessful.

**User response:** If the REPOSITORY requested is correct, 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 HKTRIAX

**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.
<table>
<thead>
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<th>Message</th>
<th>Explanation</th>
<th>User Response</th>
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<td>HKT2211E</td>
<td>Storage overflow for SYSIN data.</td>
<td>An internal error occurred in the parser.</td>
<td>Contact IBM Software Support.</td>
</tr>
<tr>
<td>HKT2212E</td>
<td>Unable to connect to ITKB repository server.</td>
<td>The specified IMS Tools KB server is not active.</td>
<td>Ensure that the name of an active IMS Tools KB server is specified. Check the job log for any additional messages.</td>
</tr>
<tr>
<td>HKT2213E</td>
<td>Required parameter EXPORT not found, xxxx was found.</td>
<td>The required control statement verb EXPORT was not found. The character string that was found is displayed in the message.</td>
<td>Ensure that EXPORT is specified on the first control statement.</td>
</tr>
<tr>
<td>HKT2214W</td>
<td>No Reports selected.</td>
<td>There are no reports that match the specified parameters.</td>
<td>Change the report selection parameters to be less specific.</td>
</tr>
<tr>
<td>HKT2215E</td>
<td>Both RECON1 and RECONID are specified. Only one can be specified.</td>
<td>Both RECON1 and RECONID were specified. Only one can be specified.</td>
<td>Ensure that only RECON1 or RECONID is specified.</td>
</tr>
<tr>
<td>HKT2216E</td>
<td>INITIAL failed (LP) (nn,nn).</td>
<td>An internal error occurred in the IMS Tools KB.</td>
<td>Contact IBM Software Support.</td>
</tr>
<tr>
<td>HKT2217E</td>
<td>Group type/Group name must be specified together.</td>
<td>A GRPTYPE or GRPNAME parameter was found without the other. Both parameters must be present.</td>
<td>Ensure that both the GRPTYPE and GRPNAME parameters are specified.</td>
</tr>
<tr>
<td>HKT2218E</td>
<td>Invalid group type given. Types are CA or DBDS.</td>
<td>The value that was specified for the GRPTYPE parameter was not one of the allowed values.</td>
<td>Change the GRPTYPE value to one of the allowed values.</td>
</tr>
<tr>
<td>HKT2219E</td>
<td>Both PART and AREA are specified. Only one can be specified.</td>
<td>Both the PART and AREA parameter were specified. Only one can be specified.</td>
<td>Ensure that only the PART or AREA parameter is specified.</td>
</tr>
<tr>
<td>HKT2220W</td>
<td>One or more of the Output Repositories are not available.</td>
<td>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.</td>
<td>Ensure that all repositories are online when exporting reports.</td>
</tr>
<tr>
<td>HKT2221E</td>
<td>No output repositories.</td>
<td>HKTJEXPT determined that there are no output repositories available at this time.</td>
<td>Notify the IMS Tools KB administrator.</td>
</tr>
<tr>
<td>HKT2223E</td>
<td>Input registry not available, verify that server mnn is active.</td>
<td>HKTJEXPT determined that the input registry is not available at this time.</td>
<td>Ensure that the specified server is available and if so, notify the IMS Tools KB administrator.</td>
</tr>
<tr>
<td>HKT2226E</td>
<td>Report open failed, verify that all parameters are valid. (nn,nn).</td>
<td>The report selected failed to open.</td>
<td>Contact IBM Software Support.</td>
</tr>
<tr>
<td>HKT2228E</td>
<td>Product xx not defined.</td>
<td>The value that was specified for the PRODUCTID parameter was not defined.</td>
<td>Ensure that the product has been registered with the IMS Tools KB server.</td>
</tr>
</tbody>
</table>
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.

HKT2230E  RECONID reconid not defined.
Explanation: The value that was specified for the RECONID parameter was not defined.
User response: Ensure that this RECONID value has been defined with the IMS Tools KB server.

HKT2231E  RECON1 dsn not defined.
Explanation: The value that was specified for the RECON1 parameter was not defined.
User response: Ensure that this RECON1 value has been defined with the IMS Tools KB server.

HKT2233W  nnn reports were selected which exceeds MAXREPORTS.
Explanation: The number of reports selected exceeds the value specified for the MAXREPORTS parameter.
User response: None required. Only the number of reports specified by the MAXREPORTS parameter will actually be printed.

HKT2234E  Repository read error (nn,nn)
Explanation: An internal error occurred in the IMS Tools KB.
User response: Contact IBM Software Support.

HKT2235W  Some report records were truncated while being written to the PRINT dd.
Explanation: Some of the records in the report were longer than allowed for SYSOUT.
User response: Ensure that the record length of the report file is 133 bytes or shorter.

HKT2236E  The first version number is greater than the second.
Explanation: The first version number is greater than the second.
User response: Ensure that when a version number range is specified that the first version is less than the second.

HKT2237E  There are no RECON entries in the registry.
Explanation: HKTJEXPT determined that no RECON entries are present in the IMS Tools KB repository.
User response: Notify the IMS Tools KB administrator.

HKT2238W  STARTAFTER specified without MAXREPORTS, the STARTAFTER will be ignored.
Explanation: A STARTAFTER parameter was found without a MAXREPORTS parameter. STARTAFTER requires MAXREPORTS.
User response: Ensure that when STARTAFTER is specified that the MAXREPORTS parameter is also specified.

HKT2239E  No SYSIN control statements found.
Explanation: No SYSIN control statements were found.
User response: Ensure that the SYSIN DD statement is correctly specified.

HKT2240W  Report printing bypassed because of mixed attributes, RECFM=FBA or FBM.
Explanation: 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.
User response: Change the selection criteria to eliminate the mixed attribute types.

HKT2241W  Invalid value for MAXREPORTS, 1 assumed.
Explanation: The value specified was not in the allowable range. The range of valid values for this parameter is 1 to 2147483647.
User response: Ensure that the correct parameter value is specified.

HKT2242W  Invalid value for STARTAFTER, 0 assumed.
Explanation: The value specified was not in the allowable range. The range of valid values for this parameter is 0 to 2147483647.
User response: Ensure that the correct parameter value is specified.
HKT2243E  VERSION parameter exceeds range.
Explanation: The value specified was not in the allowable range. The range of valid values for this parameter is 0 to 32767.
User response: Ensure that the correct parameter value is specified.

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.

HKT2301E  Unable to connect – incorrect server name

Explanation:  The server that you specified is either not available or the name is incorrect.

User response:  Check the server name that was specified. If it is correct, make sure the server initialized successfully. The FPQ subsystem is required on the system that you are executing on to enable communication with the IMS Tools KB server; ensure it initialized correctly.

HKT2302E  Insufficient access authority to repository

Explanation:  Your access control system prevented access to one or more repositories.

User response:  Determine which repository is affected and request the necessary authority.

HKT2303E  Report defined as RECORD=N

Explanation:  The report is currently defined not to be recorded (this is similar to DD DUMMY).

User response:  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 List action of the ISPF user interface.

HKT2304E  RECON not found

Explanation:  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.

User response:  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.

HKT2305E  Product not defined

Explanation:  The product is not registered to IMS Tools KB.

User response:  Use the product administration utility (HKTAPRA0) to register the product.

HKT2306E  Report not defined

Explanation:  The report is not registered to IMS Tools KB.

User response:  Use the product administration utility (HKTAPRA0) to register the product.

HKT2307E  Product not defined to record reports

Explanation:  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.

User response:  Re-register the product and its reports.

HKT2308E  Report index busy

Explanation:  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.

User response:  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.

HKT2309E  Connection to I/O repository failed

Explanation:  The Output repository is not available and is likely stopped.

The repository might have been stopped intentionally or stopped because of an error. A likely error is an out-of-space condition.

User response:  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.

Analyze the error reported to the server JOBLOG to determine possible solutions to the problem.

HKT2401I  The program HKTRINIT ended with highest RC=xxxxxx

User response:  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.

HKT2402I The HKTLOG DD failed to open, so logging does not occur for the job.

Explanation: LOG=NO 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.

HKT2404I EXEC parameter specified - xxxxx

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.

HKT2406E 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.

HKT2407E Errors found in EXEC parameters.

User response: This message is displayed with other messages. Refer to these messages for more diagnostic information.

HKT2408E Unable to add xxxxxxxx due to system contention. Please try again later.

Explanation: System contention prevented the operation.

User response: Try the action later.

HKT2409E 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 TTKBSRVR=xxxxxxx, where xxxxxxx is the XCF group name that is associated with an active IMS Tools KB server.
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.

HKT2417E RECON xxxxxxx 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 xxxxxxx added.

Explanation: The RECON name listed has been added.

User response: None. This is an informational message only.

HKT2420W RECON xxxxxxx 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 xxxxxxx.

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 xxxxx 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 INITSNSR 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 INITSNSR function was previously run. Currently set to DAYS=nn.

Explanation: The INITSNSR function was previously run, so the current request to run INITSNSR is ignored.

The current value of the DAYS parameter is listed.

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:

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 nnnnn 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.

User response: Internal error, contact IBM Software Support.
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:
$nnnnnn$
  One of the following:
  * ACB1 - The VSAM GENCB failed for a VSAM ACB for the target RID data set.
  * ACB2 - The VSAM GENCB failed for a VSAM ACB for the source RID data set.
  * ACB3 - The VSAM GENCB failed for a VSAM ACB for the source RMD data set.
  * ACB4 - The VSAM GENCB failed for a VSAM ACB for the target RMD data set.
  * RPL1 - The VSAM GENCB failed for a VSAM RPL for the target RID data set.
  * RPL2 - The VSAM GENCB failed for a VSAM RPL for the Source RID data set.
  * RPL3 - The VSAM GENCB failed for a VSAM RPL for the Source RMD data set.
  * RPL4 - The VSAM GENCB failed for a VSAM RPL for the target RMD data set.
  * EXLST1 - The VSAM GENCB failed for a VSAM EXLST for the Source RMD data set.
  * MODCB1 - The VSAM MODCB failed for a VSAM EXLST of the Source RID data set.
$dddddddd$
  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.

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.

HKT2461E  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.

HKT2462E  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.

HKT2463E  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.

HKT2464E  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 - 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.

HKT2466E  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.

HKT2467E  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.

HKT2468E  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.

HKT2469E  Keyword parameter specified more than once - xxxxx
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 - 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.

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 xxxxxxxx function is processing for IMS Tools KB server xxxxxxx.
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 xxxxxxxx function ended with RC=xxxxx.
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.
Chapter 18. 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
  /SM590000/SM590000Fserver_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 19. 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.
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