IBM IMS High Performance System Generation Tools for z/OS
Version 2 Release 4

User's Guide

IBM
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Version 2 Release 4

User's Guide

IBM
Note:

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

IBM® IMS™ High Performance System Generation Tools for z/OS® (also referred to as IMS HP Sysgen Tools) is an IMS Tools product that provides a comprehensive IMS sysgen management system, including the capability to dynamically alter IMS sysgen application resources.

These topics provide instructions for installing, configuring, and using IMS High Performance System Generation Tools.

To use these instructions, you must have already installed IMS High Performance System Generation Tools by completing the instructions in the Program Directory for IBM IMS High Performance System Generation Tools for z/OS (GI10-8677), which is included with the product media and is also available on the IMS Tools Product Documentation page.

These topics are designed to help database administrators, system programmers, application programmers, and system operators perform the following tasks:
- Understand the capabilities of the functions that are associated with IMS High Performance System Generation Tools
- Install and operate IMS High Performance System Generation Tools
- Customize your IMS High Performance System Generation Tools environment
- Diagnose and recover from IMS High Performance System Generation Tools problems
- Use IMS High Performance System Generation Tools with other IMS products

To use these topics, you should have a working knowledge of:
- The z/OS operating system
- ISPF
- SMP/E
- IMS

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


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

IBM IMS High Performance System Generation Tools for z/OS (also referred to as IMS HP Sysgen Tools) is an IMS Tools product that provides a comprehensive IMS sysgen management system, including the capability to dynamically alter IMS sysgen application resources.

Topics:
• Chapter 1, “IMS High Performance System Generation Tools overview,” on page 3
IBM IMS High Performance System Generation Tools for z/OS (also referred to as IMS HP Sysgen Tools) is an IMS Tools product that provides a comprehensive IMS sysgen management system, including the capability to dynamically alter IMS sysgen application resources.

IMS HP Sysgen Tools provides:
• Easy-to-use interface that allows one person to define a list of changes to be implemented, have the list verified by another person, and be implemented by another person (or scheduled batch job)
• Ability to control which users have the authority to perform each function, providing the necessary control in a shared IMS environment
• An audit log for reviewing all changes made to an IMS system, along with the capability to easily back out individual resource updates

Topics:
• “What's new in IMS High Performance System Generation Tools” on page 4
• “IMS system definition” on page 5
• “What does IMS High Performance System Generation Tools do?” on page 6
• “IMS High Performance System Generation Tools components” on page 8
• “Hardware and software requirements” on page 13
• “Security and auditability” on page 14
• “Service updates and support information” on page 15
• “Product documentation and updates” on page 16
• “Accessibility features” on page 18
What's new in IMS High Performance System Generation Tools

This topic summarizes recent technical changes to IMS HP Sysgen Tools.

SC27-9501-00 (December 2018)

This edition applies to Version 2 Release 4 of IMS HP Sysgen Tools. IMS HP Sysgen Tools V2.4 provides the following major functions:

Installation store/forward
By using the installation store/forward function, you can have resource update lists installed later even if the installation failed because the target IMS was not active when IMS HP Sysgen Tools tried to install the resource update lists.

For more information about the installation store/forward function, see “Configuring installation store/forward” on page 51.

IMSRSC repository support
IMS HP Sysgen Tools now supports DRD-enabled environments that use the IMS resource definition (IMSRSC) repository.

IMS Managed ACBs Activate
By using the IMS Managed ACBs Activate method, you can activate a pending ACB member in the IMS directory staging data set.

For more information about IMS Managed ACBs Activate, see the following topics:
- “Enabling the IMS Managed ACBs Activate method” on page 68
- “Activating a pending ACB member in IMS directory staging data set by using IMS Managed ACBs Activate” on page 153

Batch Search utility (IOHBSRCH)
The Batch Search utility searches definitions of databases, programs, transactions, and routing codes in IMS active system control blocks (CORE) or data sets (MODBLKS, RDDS, or IMSRSC repository) for user-specified search words and generates corresponding sysgen source macros (DATABASE, APPLCTN, TRANSACT, and RTCODE).

For more information about the Batch Search utility, see Chapter 15, “Using the Batch Search utility,” on page 217.

In addition to updates for IMS HP Sysgen Tools V2.4, the following updates have also been made for this edition:
- Documentation changes for APAR PI41969 and PI44598
- Added new messages IOH3210E, IOH3211E, IOH3212E
- Updated messages IOHG306E, IOH4110E, IOH241S
- Added descriptions for running the Resource Update List Create utility (IOHCLIST) with SOURCE=DELETE
- Added descriptions for the storage functions (Option 2 (CSA))
- Removed descriptions about DFSPPUE0 alias
IMS system definition

This topic describes an overview of the standard IMS system generation process. This information helps you understand how IMS HP Sysgen Tools facilitates IMS system management.

An IMS system definition is used by the IMS system generation (sysgen) process to create or modify IMS online and batch environments.

There are several types of system definitions you can use to make changes to an IMS system environment. The type of definition, and subsequent sysgen, depends on the changes you want to implement. Adding new features and functions typically requires a NUCLEUS, ALL, or online sysgen. Making changes to communication definitions typically requires a CTLBLKS type sysgen. Adding or changing application resources (transactions, programs, databases, and route codes) typically requires only a MODBLKS type system definition.

In many environments, periodic IMS sysgens are required to implement changes to the application definitions for each IMS system. These changes can be accomplished with an IMS MODBLKS system definition. Depending on the number of application resources defined to a particular IMS system, the MODBLKS sysgen process can take a significant amount of time, machine resources, and personnel resources. The typical IMS sysgen involves at least 4 jobs, including stage 1, stage 2, security, and installation (possibly with the IMS Online Change utility).

The stage 2 job stream is created by the stage 1 sysgen process, and might have to be edited to conform to installation requirements after the stage 1 job completes.

In addition to an IMS sysgen, if IMS internal Security Maintenance Utility (SMU) security is used in IMS Version 9 or earlier, an IMS security gen is required each time an IMS sysgen is performed. SMU security is used to define the following:

- IMS password security
- Terminal security
- Signon security
- AGN security
- Transaction command authorization
What does IMS High Performance System Generation Tools do?

IMS HP Sysgen Tools delivers a comprehensive IMS sysgen management system.

IMS HP Sysgen Tools allow the following types of IMS sysgen changes:

- Update existing IMS sysgen attributes for database, program, transaction, and fast path route code definitions.
- Add or delete IMS sysgen definitions for databases, programs, transactions, and fast path route codes.
- Rename an existing application resource to a new name, while maintaining attributes and relationships (such as the transactions associated with a renamed program).
- Change IMS SMU security, including AGN, transaction command authorization, and terminal security.
- Reload a specific ACBLIB member, without using ACBLIB online change.
- Reload DEDB randomizer routines.

Once a list of resource updates is created, it can be verified to ensure that there are no resource conflicts and that the updates will install properly in the target IMS system. Installation of the list of resource updates can then be performed, either from a TSO session or via a batch job.

A list of resource updates can be installed in a single IMS system or for a group of IMS systems simultaneously. This feature can be useful in IMSplex environments, ensuring that updates are installed successfully in all IMS systems at the same time, and that resource definitions are kept in sync with other members of the IMSplex.

IMS HP Sysgen Tools include the capability to:

- Display IMS resource definitions – either those currently being used by IMS or as defined in the MODBLKS data set – and all the attributes associated with the definitions.
- Validate IMS sysgen source without running an IMS sysgen.
- Perform an IMS MODBLKS type sysgen without going through the IMS sysgen process. The IMS HP Sysgen Tools Fast Sysgen (also referred as Fastgen) process duplicates the MODBLKS sysgen process using 90% less CPU and elapsed time. The Fastgen process can be run either as a batch job or from the IMS HP Sysgen Tools ISPF panels.
- Re-create IMS sysgen source and/or security gen source from the MODBLKS / MATRIX data sets.
- View IMS control region storage and control blocks, and even zap storage in the IMS control region.
- Use the IMS HP Sysgen Tools history log to review which resources were updated by which userid, and when the update was installed.
- Convert IMS HP Sysgen Tools history log entries to IMS sysgen macros, which can be used to update IMS sysgen source to keep source in sync with the running IMS system.
- Back out one or more resource updates, restoring the definitions to the state they were in before an update was installed.
- Create SMP/E JCLIN source statements from a MODBLKS data set.
- Create an installable list of resource updates to synchronize the running IMS system with the updated IMS sysgen source.
• Compare different MODBLKS data sets to identify any differences in the IMS resource definitions.

The functions provided by IMS HP Sysgen Tools are protected by your security subsystem, and can be customized to work within your local change control procedures.
IMS High Performance System Generation Tools components

IMS HP Sysgen Tools consists of several components.

Topics:
- “ISPF interface”
- “Resource update lists”
- “IMS resource definition” on page 9
- “Installation store/forward” on page 9
- “IMS HP Sysgen Tools utilities” on page 10
- “History log” on page 11
- “JCLIN generator” on page 12

ISPF interface

IMS HP Sysgen Tools provides, through the ISPF interface, various functions related to installation of IMS resources. In addition, it provides several additional functions through the ISPF interface.

IMS commands

From the ISPF interface, you can issue any authorized IMS command. The command response is displayed at your workstation.

JCL generator

The ISPF interface contains a JCL generator for a number of IMS HP Sysgen Tools batch utilities.

The Utilities option on the IMS HP Sysgen Tools main menu provides the capability to generate JCL for batch utilities such as:
- Fast Sysgen utility (Fast MODBLKS sysgen)
- JCLIN generator (Create SMP/E JCLIN)
- Batch Update List utility (Verify, install)
- Resource Update List Create utility (Synchronize, convert)
- Sysgen Compare utility (MODBLKS compare)
- Batch Reverse Sysgen utility (Reverse)
- Batch Search utility (Search)

Resource update lists

A resource update list is a group of IMS sysgen changes that are implemented simultaneously. You can add new resources to a resource update list, or you can edit or delete existing resources. A resource update list can be created in advance by one user and then installed later by a different user.

Resource update list technology provides an incremental sysgen change function. You can create multiple resource update lists in any order and implement them in any order days or weeks later. Each resource update list is installed independently. When a resource update list is installed, only the resources that are specified in the resource update list entries are updated. All other resource definitions remain as they were defined before the installation of the resource update list.
A resource update list can be installed in either a single IMS system or a group of IMS systems. Even if global online change is enabled, a resource update list can be installed for only a single IMS in the global online change configuration. A group can include any combination of local online change, global online change, or IMSplex systems. When verifying or installing a resource update list, you can specify either a specific IMSID to install on a single IMS subsystem, or an IMS HP Sysgen Tools group name to install the update list on multiple IMS systems simultaneously.

**Restriction:** To use the installation store/forward function, the target IMS system must be configured as a local online change. For details, see "Restrictions for using the installation store/forward function" on page 56.

**IMS resource definition**

IMS HP Sysgen Tools enhances the resource definition and maintenance features that are provided by IMS.

By using the IMS online change process, you can define and maintain shared resource definitions among multiple IMS systems. IMS HP Sysgen Tools supports the Global Online Change feature of IMS. You can use IMS HP Sysgen Tools to install a resource update list to a group of IMS systems. Therefore, you can easily maintain duplicate resource definitions among such groups.

By using the IMS dynamic resource definition (DRD), you can dynamically define and maintain IMS resource definitions. IMS HP Sysgen Tools supports DRD-enabled environments that use resource definition data sets (RDDSs) or the IMS resource definition (IMSRSC) repository. You can use resource update lists to stage changes and implement them later as a group.

**Installation store/forward**

If the IMS online system is not active while the resource update list is being installed, installation fails. However, if you use the installation store/forward function, the resource update list is automatically installed later when the IMS become active.

The installation store/forward function consists of two components:

**Store/forward VSAM data set**

If the target IMS is not online at the time of resource update list installation, the IMSID value and the INSTALL command information are stored in this data set.

When you use the installation store/forward function, the data set stores the installation information for the failed IMS regardless of whether you tried to install the resource update list through the ISPF user interface or as a batch job.

**REDO job**

The REDO job starts automatically during IMS startup, reads the installation information from the store/forward VSAM data set, and reruns the installation procedure.

**Important:** To use the store/forward function, you must first create resource update lists by using IMS HP Sysgen Tools.
IMS HP Sysgen Tools utilities

IMS HP Sysgen Tools provides the Fast Sysgen utility, Merge Clone utility, and several other utilities.

Fast Sysgen utility

IMS HP Sysgen Tools provides a Fast Sysgen utility that performs an IMS MODBLKS sysgen in a fraction of the time used by the standard IMS sysgen process or the IMS LGEN process, and is easier to administer.

The Fast Sysgen utility (also referred to as the Fastgen batch utility) runs in batch mode and provides the ability to perform a MODBLKS type IMS sysgen and security gen in a single step job.

IMS HP Sysgen Tools also provides the ISPF interface that allows incremental updates to IMS system definitions. Use the ISPF interface to define a list of IMS sysgen changes, verify that the changes do not cause IMS system conflicts, and implement the changes. Any authorized user can perform the changes at any time after the list of changes is saved.

Additionally, the ISPF interface provides the ability to perform the following IMS sysgen related tasks:

- Review existing resource definitions
- Reverse IMS MODBLKS and MATRIX modules into IMS sysgen and security gen source code
- Validate IMS sysgen source
- Perform a Fast Sysgen
- Review IMS sysgen changes implemented via the HP Sysgen product
- Issue IMS commands

IMS system data set integrity is preserved using the same mechanisms that IMS uses in its sysgen and online change processes. The IMS staging library’s integrity is ensured by using a hardware reserve with the same QNAME as the linkage editor or binder. The active and inactive libraries’ integrity is preserved by using the IMS online change global enqueue process. In addition, you can control which libraries are updated by the batch utility (the staging library, inactive library, or A or B libraries) with a simple parameter in the Fast Sysgen JCL.

Merge Clone utility

The Merge Clone utility can be used to assist in adding new IMS regions to an existing configuration, merging existing IMS regions together, or ensuring APPLCTN, TRANSACT and DATABASE macro definitions remain consistent across all IMS regions in a data sharing environment.

Merging

The merging process takes two or more IMS regions running separate applications and combines the application, transaction, and database definitions together.

A merge results in the same number of IMS regions, but all of them would contain the same number (and names) of APPLCTN, TRANSACT and DATABASE macro definitions. As part of the process, the Merge Clone utility will build the MSC routing definitions for each transaction. It does this by analyzing each PSB from the PSBLIB and determining which IMS system has database access that meets the PSB’s PROCOPT requirements.
Cloning

If you are running an IMS database-level data sharing environment, you can use Merge Clone to add (clone) new IMS regions to your configuration.

By running the Merge Clone process, you can build the entire application, transaction and database definitions for a new region, complete with the MSC routing definitions. Again, the utility will determine the routing by analyzing the PSBs and determining which IMS system has the database access that meets a PSB’s PROCOPT requirements.

If you are running a data sharing environment, you can use Merge Clone to keep your IMS systems synchronized. The process will ensure that all systems have the same applications, transactions, and databases defined. It will also ensure that resources are defined consistently across systems because a resource will be defined with the same parameters in all systems.

Related information:
Chapter 17, “Using the Merge Clone utility,” on page 229

Sysgen Compare utility

The Sysgen Compare utility provides the ability to compare two sets of MODBLKS and MATRIX data sets and determine whether any differences exist, identifying any resource definitions that differ.

Related information:
Chapter 13, “Using the Sysgen Compare utility,” on page 205

Batch Reverse Sysgen utility

IMS HP Sysgen Tools provides a reverse sysgen capability for both IMS sysgen and security gens. You can create source for both IMS features from the MODBLKS, MATRIX, and RESLIB libraries.

Related information:
Chapter 14, “Using the Batch Reverse Sysgen utility,” on page 211

Batch Search utility

The Batch Search utility searches definitions of databases, programs, transactions, and routing codes in IMS active system control blocks (CORE) or data sets (MODBLKS, RDDS, or IMSRSC repository) for user-specified search words. It then generates corresponding sysgen source macros (DATABASE, APPLCTN, TRANSACT, and RTCODE).

Related information:
Chapter 15, “Using the Batch Search utility,” on page 217

History log

IMS HP Sysgen Tools includes a history log for resource changes installed using resource update lists.

You can use the history log to review when resource definitions were changed, and by which user ID. Another report option builds IMS stage 1 macro definitions that can be used to update IMS sysgen source to ensure that gen source matches current resource definitions.
JCLIN generator

The JCLIN generator provides a way to create SMP/E JCLIN input from a MODBLKS data set. This allows you to run a JCLIN before SMP/E maintenance is applied.
Hardware and software requirements

Before you install and configure IMS HP Sysgen Tools, make sure that your environment meets the following minimum hardware and software requirements.

**Hardware prerequisites**

IMS HP Sysgen Tools is designed to operate in any hardware environment that supports any supported release of IMS.

**Software prerequisites**

IMS HP Sysgen Tools is designed to operate with any version of z/OS that supports the version of IMS that you are running. All supported releases of IMS are supported by IMS HP Sysgen Tools.
Security and auditability

IMS HP Sysgen Tools uses the security and auditability features of the z/OS operating system and IMS system under which the tools execute.

You must evaluate, select, and implement security features, administrative procedures, and appropriate controls in application systems and communication facilities.

Use of the Fast Sysgen utility might require changes to the security definitions of some IMS system data sets. These changes are discussed in Chapter 2, "Configuring IMS HP Sysgen Tools,” on page 21.
Service updates and support information

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

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

**Product documentation and updates**

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

**Information on the web**

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


The IMS Tools Product Documentation web page includes:

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

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


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


**Receiving documentation updates automatically**

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To register with the My Notifications service:

2. Enter your IBM ID and password, or create one by clicking register now.
3. When the My Notifications page is displayed, click Subscribe to select those products that you want to receive information updates about. The IMS Tools option is located under Software > Information Management.
4. Click Continue to specify the types of updates that you want to receive.
5. Click Submit to save your profile.
How to send your comments

Your feedback helps IBM to provide quality information. Send any comments that you have about this book or other IMS Tools documentation to comments@us.ibm.com. Include the name and version number of the product and the title and number of the book. If you are commenting on specific text, provide the location of the text (for example, a chapter, topic, or section title).
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 this product enable users to perform the following activities:

- Use assistive technologies such as screen readers and screen magnifier software. Consult the assistive technology documentation for specific information when using it to access z/OS interfaces.
- Customize display attributes such as color, contrast, and font size.
- Operate specific or equivalent features by using only the keyboard. Refer to the following publications for information about accessing ISPF interfaces:
  - z/OS ISPF User’s Guide, Volume 1
  - z/OS TSO/E Primer
  - z/OS TSO/E User’s Guide

These guides describe how to use the ISPF interface, including the use of keyboard shortcuts or function keys (PF keys), include the default settings for the PF keys, and explain how to modify their functions.
Part 2. Configuring IMS HP Sysgen Tools

These topics describe the procedures for configuring IMS HP Sysgen Tools for your installation.

Topics:

• Chapter 2, “Configuring IMS HP Sysgen Tools,” on page 21
• Chapter 3, “Optional product customization,” on page 59
• Chapter 4, “Using the ISPF interface,” on page 69
Chapter 2. Configuring IMS HP Sysgen Tools

Before you start using IMS HP Sysgen Tools, read these topics to configure it.

Topics:

- “Target libraries available after installation” on page 22
- “APPC services” on page 23
- “Setting up the environment” on page 25
- “Configuration procedures” on page 26
- “Defining IMS HP Sysgen Tools options” on page 39
- “Fast Sysgen performance suggestions” on page 46
- “IMS Sysgen source organization” on page 47
- “Configuring installation store/forward” on page 51
Target libraries available after installation

The target libraries are populated when IMS HP Sysgen Tools completes installation.

Software installation is documented in the IMS HP Sysgen Tools Program Directory. When installation is completed, the following target libraries are populated:

- hlq.IOH230.SIOHEXEC
- hlq.IOH230.SIOHLINK
- hlq.IOH230.SIOHMACS
- hlq.IOH230.SIOHMENU
- hlq.IOH230.SIOHPENU
- hlq.IOH230.SIOHSAMP
- hlq.IOH230.SIOHSENU
- hlq.IOH230.SIOHTENU
APPC services

Some ISPF functions call APPC services to retrieve information from or make updates to the IMS control region control blocks.

The options on the Primary Options menu that call APPC services include the following:

0 (Setup)
   Uses an APPC application to extract IMS control region data set names.

1 (View)
   Uses APPC when viewing INCORE definitions.

2 (Edit)
   Creates an IMS resource update list.

3 (Verify)
   Verifies an IMS resource update list.

4 (Install)
   Implements an IMS resource update list.

7 (Reverse)
   Uses APPC when retrieving information for an INCORE request.

C (Command)
   Uses APPC/MVS™ to route the request to the proper MVS system. If APPC/IMS is enabled, may also use APPC/IMS to issue the command.

S (Storage)
   Uses APPC when retrieving or updating IMS storage

Resource update list functionality calls APPC services to retrieve existing resource definition information. The verify and install resource update list functions run primarily in APPC. This means that ISPF functions invoke APPC to schedule IMS HP Sysgen Tools code in the same MVS LPAR in which IMS is running. This allows IMS HP Sysgen Tools to access IMS control blocks even when the TSO user is logged on to another MVS LPAR.

An understanding of how APPC tasks run is helpful when searching for diagnostic information for problems in an APPC environment. APPC schedules IMS HP Sysgen Tools functions in much the same way that JES2 or JES3 schedule jobs. An APPC initiator runs the IMS HP Sysgen Tools code. In order to understand what is running in an APPC initiator, it is important to understand the IOHTPADD job that runs during customization. The following JCL exists in the IOHTPADD job:

```
//SYSIN DD DATA,DLM='QT'
```

This JCL indicates that all card images that follow, up to the statement with 'QT' in the first two columns, are input to the APPC utility that is run in the IOHTPADD job. This includes what appears to be a second job that is included in the IOHTPADD member. Instead of being a second job, however, this input defines to APPC the environment that must be established to run the IMS HP Sysgen Tools application code in the APPC initiator.

The job name, IOHAPPC, is used when the IMS HP Sysgen Tools code processes. This name can be seen just as any other MVS started task or job, in an MVS D A,L command or in the SDSF DA panel. If the APPC code loops, it is canceled by issuing an MVS cancel command for job name IOHAPPC.
**Note:** //STEPLIB DD defines the current SIOHLINK data set. Any maintenance applied to IMS HP Sysgen Tools must be installed in this library in order to have the maintenance used in the APPC environment.

For security error messages, it might also be important to review the MVS syslog. For example, RACF® resources defined in the IOHRACF job are used for validating a user's authority to perform certain functions. If a user does not have access to a resource, the RACF violation occurs in the APPC address space on the MVS system where IMS runs, not where the TSO user is logged in.
Setting up the environment

You need to set up the IMS HP Sysgen Tools before using all of the features.

Procedure

To use all features of IMS HP Sysgen Tools, you must complete the following steps:
1. The SIOHLINK library must be APF authorized.
2. IMS online change must be enabled in all IMS subsystems. This change can either be a local or a global change.
3. Each IMS control region must have unique MODBLKSA, MODBLKSB, MATRIXA, and MATRIXB data sets; that is, the MODBLKS data set cannot be used in both the MODBLKSA and MODBLKSB DD statements.
4. The SIOHLINK library (or the DSN specified for SIOHLINK in the IOHTPADD job) must be APF authorized.
Configuration procedures

In the following topics, the overview of the configuration procedures is followed by detailed descriptions of each configuration procedure.

Overview of configuration procedures

The IMS HP Sysgen Tools does not require changes to the IMS control region JCL or software. It can be configured without impact to the IMS online system. You do not have to stop or restart IMS to install IMS HP Sysgen Tools.

IMS HP Sysgen Tools uses APPC/MVS to run functions on the same MVS system(s) where targeted IMS subsystems are running. APPC/MVS allows a request from a TSO user on one MVS system to start IMS HP Sysgen Tools software on the MVS system where the target IMS subsystem is running. IMS HP Sysgen Tools software that is running on the proper MVS system can then access IMS control blocks by using access registers and common storage. APPC/MVS is required to use IMS HP Sysgen Tools.

IMS HP Sysgen Tools also uses APPC/IMS to issue IMS commands if APPC/IMS is active in the target IMS subsystem. APPC/IMS is not required to use IMS HP Sysgen Tools.

Perform the following steps before starting to use IMS HP Sysgen Tools:

1. If not already active, activate APPC/MVS.
   For more information, see "Step 1. Activate APPC/MVS" on page 27.

2. Find the APPC/MVS base LU name on each MVS system where IMS runs.
   For more information, see "Step 2. Locate the APPC/MVS base LU names" on page 29.

3. Find an appropriate APPC initiator class.
   For more information, see "Step 3. Find an APPC initiator class" on page 29.

4. If not already present, define to APPC/MVS a symbolic destination (SYMDEST) for each MVS image where an IMS control region with IMS HP Sysgen Tools will reside. There is no need to create a separate SYMDEST for IMS HP Sysgen Tools; any existing definition can be used. SIOHSAMP member IOHSIADD provides a sample batch job to define an APPC/MVS symbolic destination.
   For more information, see "Step 4. Define APPC/MVS symbolic destinations" on page 30.

5. Allocate the IOHPDS library, which stores user-created resource update lists, and the IOHOPT library, which stores the options for each IMS control region. Allocate an IOHLOG data sets for each IMS subsystem that does not already have a log data set.
   For more information, see "Step 5. Allocate libraries" on page 30.

6. Define the required APPC/MVS TP profile used by IMS HP Sysgen Tools. See SIOHSAMP member IOHTPADD for an example.
   For more information, see "Step 6. Define APPC/MVS transaction program profile for IMS HP Sysgen Tools" on page 31.

7. Copy SIOHEXEC member IOHXISPF, IOHXEXEC, or both, from the SIOHEXEC library to a CLIST/REXX library accessible to the IMS HP Sysgen Tools users. Update the data set names in the IOHXISPF or IOHXEXEC EXEC to reflect the data set names chosen for the target libraries.
For more information, see “Step 7. Copy IOHXISP or IOHXEXEC to CLIST/REXX library” on page 32.

8. Define the required security profiles to limit user capabilities to edit and install resource update lists, issue IMS commands, and review IMS control region storage.
   For more information, see “Step 8. Define security profiles” on page 33.

9. Define the IMS HP Sysgen Tools authorized user ID, and ensure that this new user ID has security authorization to the appropriate data sets and IMS commands.
   For more information, see “Step 9. Create an IMS HP Sysgen Tools authorized user ID” on page 34.

10. Review IMS parameter values for AOIS and CMDMCS values in DFSPBxxx.
    For more information, see “Step 10. Verify IMS requirements” on page 35.

11. Add an APPLCTN definition for IMS HP Sysgen Tools to IMS.
    For more information, see “Step 11. Add APPLCTN for IMS HP Sysgen Tools” on page 35.

12. Optionally, add IMS HP Sysgen Tools to a user ISPF menu.
    For more information, see “Step 12. Optional: Add IMS HP Sysgen Tools to a user menu” on page 35.

13. Ensure that the APPC/MVS security requirements for this environment are in place.
    For more information, see “Step 13. Define resource class APPCLU profiles to your security system” on page 36.

After you completed these configuration steps, use the ISPF interface to define the options for each IMS subsystem that is accessed through this interface. For details, see “Defining IMS HP Sysgen Tools options” on page 39.

**Step 1. Activate APPC/MVS**

Advanced Program-to-Program Communication/MVS (APPC/MVS) must be active on all MVS systems where either IMS runs, or where an IMS HP Sysgen Tools TSO user might log on.

**Before you begin**

Determine whether APPC is active or not by issuing the MVS command `D APPC,LU,ALL`. If APPC/MVS is already active, you can skip this step and go on to “Step 2. Locate the APPC/MVS base LU names” on page 29.

**About this task**

If your installation has not yet implemented APPC/MVS, you can find helpful information in *z/OS MVS Planning: APPC/MVS Management*. This publication describes how to define and manage APPC/MVS and defines parameters specified in the TPADD and Side Information Add (SIADD) processes.

APPC uses a VTAM® SNA network and LU6.2 protocol to communicate between two application programs on the same or two different hosts, such as:

- z/OS
- VM/ESA
- AS/400
- Workstations running OS/2
• Other hosts

Procedure

To set up APPC/MVS:

1. Set up the APPC and ASCH started tasks (started by an operator command).
The APPC address space controls APPC/MVS communication functions. The
ASCH address space is where APPC transaction programs are scheduled.
Here is a sample APPC procedure:

//APPC PROC APPC=00
//APPC EXEC PGM=ATBINITM,PARM='APPC=&APPC',REGION=OK

Here is a sample ASCH procedure:

//ASCHC PROC ASCH=00
//ASCHC EXEC PGM=ASBSCHIN,PARM='ASCH=&ASCH',REGION=OK

2. Set up member ASCHPMxx in SYS1.PARMLIB. This member defines classes
and scheduling characteristics for transaction programs scheduled in the ASCH
address spaces.
Here is a sample ASCHPMxx member:

CLASSADD CLASSNAME(A) MSGLIMIT(1000) MAX(10) MIN(1) RESPGOAL(1)
CLASSADD CLASSNAME(OPERNMVS) MAX(300) MIN(15) RESPGOAL(1)
CLASSADD CLASSNAME(FAST) MAX(10) MIN(2) RESPGOAL(.01)

3. Set up member APPCPMxx in SYS1.PARMLIB. This member defines the
APPC/MVS local logical unit names (LU names) and the data set names of the
APPCTP and SIDEINFO data sets.
Here is a sample APPCPMxx member:

LUADD ACBNAME(MVSLU01) BASE TPDATA(SYS1.APPCTP)
SIDEINFO DATASET(SYS1.APPCSI)

4. Define the APPC/MVS base LU name to VTAM. The ACBNAME defined to
VTAM must match the ACBNAME specified in the APPCPMxx member of
PARMLIB. The VTAM LU name (the label field of the APPL statement) should
be unique within your installation. IMS HP Sysgen Tools require one LU name
for each z/OS MVS system on which an IMS subsystem is running. The LU
name can be any name, and it must be specified not only in the VTAM
definition, but also in the LUADD statement, as shown in step 3 and in the
statements that define the side info entry shown here:
Step 2. Locate the APPC/MVS base LU names

The APPC/MVS base LU names are required for later steps in the ISPF configuration.

Procedure

To find the APPC/MVS base LU names:
1. Issue MVS command D APPC,LU,ALL and find the LLUN (LU name) that has both SCHD=ASCH and BASE=YES for each MVS system where an IMS subsystem runs.
2. Record the LLUN and the TP profile data set name for each MVS system. For example:
   LUADD ACBNAME(data set name) BASE TPDATA(data set name)

   These data set names are used in “Step 6. Define APPC/MVS transaction program profile for IMS HP Sysgen Tools” on page 31.
3. Record the name of the APPC/MVS side info data set name. For example:
   SIDEINFO DATASET(data set name)

   This data set name is used in “Step 4. Define APPC/MVS symbolic destinations” on page 30.

Step 3. Find an APPC initiator class

The APPC initiator class is required for later steps in the ISPF configuration.
Before you begin

The APPC initiator class that you use must be able to concurrently schedule at least 1 more than the number of IMS subsystems on that MVS system. For example, if an MVS system has 3 IMS subsystems executing, the APPC initiator class must be able to schedule at least 4 tasks concurrently (MAX=4).

Procedure

To find an APPC initiator class:

Issue the MVS command **D ASCH,ALL** to list the APPC initiator classes defined on each MVS system. The initiator class name is used in “Step 6. Define APPC/MVS transaction program profile for IMS HP Sysgen Tools” on page 31.

Step 4. Define APPC/MVS symbolic destinations

A symbolic destination (SYMDEST) is required to use the IMS HP Sysgen Tools.

Before you begin

- Each MVS system where an IMS subsystem runs requires a unique SYMDEST. This definition might be shared with other APPC applications, therefore, it does not need to be specific to IMS HP Sysgen Tools.
- **MODENAME SNASVCMG** is not permitted by APPC/MVS.
- The value of the DESTNAME parameter should be chosen to represent an MVS system, not a specific IMS system.
- All IMS subsystems present on an MVS image should use the same destination name.
- The MODENAME parameter should be the same as the DLOGMOD in the APPC/MVS APPL definition.
- The PARTNER_LU name is the name of the MVS base LU name found in “Step 2. Locate the APPC/MVS base LU names” on page 29 for the destination MVS system.
- A SYMDEST definition must be present on every MVS system where IMS HP Sysgen Tools can be used to access an IMS subsystem, including a symbolic destination for an MVS system on that system, itself.

Procedure

To define the symbolic destination name:

Modify the **DESTNAME(symbolic destination name)** parameter in your JCL. For a sample definition, see the IOHSIADD member of the SIOHSAMP library.

Step 5. Allocate libraries

The IOHPDS, IOHOPT, and IOHLOG libraries must be allocated.

Before you begin

Because these data sets are not IMS HP Sysgen Tools release specific, the product release should not be included in the data set names.

The job IOHALCDS in the SIOHSAMP data set contains sample JCL for the allocation of these data sets.
Procedure

Allocate these libraries per shared DASD environment. They can be shared among multiple IMS systems and multiple MVS systems. You can either share one set of IOHPDS and IOHOPT among all IMS and MVS systems, or allocate one set of IOHPDS and IOHOPT for each IMS group that you want to manage.

**IOHPDS**

This data set is used to store resource update lists created by users.

**Important:** Communicate this data set name to end users because they will have to enter it on the IMS HP Sysgen Tools Primary Options menu.

**IOHOPT**

This data set contains the IMS options definitions. This data set is also specified in SIOHSAMP member IOHTPADD, and in REXX EXEC IOHXISPF and IOHXEXEC in the SIOHEXEC library.

**IOHLOG**

This data set contains information about implemented changes to resource definitions. This data set is required for each IMS control region. Each IMS subsystem should have a unique log data set. The sample job IOHALOG in the SIOHSAMP data set contains sample JCL to allocate an IOHLOG data set. Use this sample job to allocate logs for each IMS subsystem.

---

**Step 6. Define APPC/MVS transaction program profile for IMS HP Sysgen Tools**

Each APPC transaction program (TP) has a TP profile defined to APPC/MVS.

**Before you begin**

You must define the TP profile on every MVS system where an IMS subsystem runs that will be accessed by IMS HP Sysgen Tools. In an environment where multiple MVS systems share a single TP profile (APPCTP) data set, this definition needs to be defined only once.

**About this task**

The TP profile definitions are stored in the APPC TP profile data set. You can define a TP profile using a batch job (a sample batch job is provided) or using the APPC/MVS ISPF interface.

IMS HP Sysgen Tools uses one APPC transaction program, which is a batch job to define the required transaction profile included in SIOHSAMP member IOHTPADD. The job contains JCL that is used to run the batch utility and contains JCL in the SYSIN DD DATA input stream.

The data set names included in the SYSIN stream must be customized for your installation. The SYSIN stream includes entities such as the SIOHLINK and IOHOPT library data set names, as well as the APPC TP Profile DSN (obtained in “Step 2. Locate the APPC/MVS base LU names” on page 29) and the APPC initiator class (obtained in “Step 3. Find an APPC initiator class” on page 29).

The SYSIN stream must be modified to include:

- The SIOHLINK and IOHOPT library data set names
• The APPC TP Profile DSN shown in the TPDATA value (obtained in “Step 2.
Locate the APPC/MVS base LU names” on page 29), which is associated with
the APPC/MVS base LU name.
• The APPC initiator class (obtained in “Step 3. Find an APPC initiator class” on
page 29).

A default TP profile name, IOH220.IMS_HP_SYSGEN, is specified in the sample job.
You can change the TP profile name to match an existing TP profile name or to
conform to installation standards.

**Important:** If you change the TP profile name, you must specify the new name in
the APPC/MVS HP Sysgen TPName field option of the IMSID of every IMS
system. For information on setting up the IMSID options and the TP name field,
see “Defining IMS HP Sysgen Tools options” on page 39.

**Procedure**

To define the TP profile name:

Modify the TPNAME(*tp profile name*) parameter in your JCL.
For a sample definition, see the IOHTPADD sample member in the SIOHSAMP
data set.
If this job ends with condition code 8, there is not necessarily an error. If the
TPNAME was not defined previously, the following messages may be generated
by TPDELETE. These can be ignored.

ATB323I Processing of TPDELETE request has begun.
ATB371I Specified TP profile not found.
ATB311I TPDELETE request failed

**Step 7. Copy IOHXISPF or IOHXEXEC to CLIST/REXX library**

The IOHXISPF or IOHXEXEC REXX EXEC must be copied to a CLIST or REXX
EXEC library that is accessible to the IMS HP Sysgen Tools user.

**About this task**

After copying the IOHXISPF or IOHXEXEC REXX EXEC, you can start an IMS HP
Sysgen Tools ISPF session by typing IOHXISPF or IOHXEXEC.

**Important:** To use the functions that are available in IMS HP Sysgen Tools Version
2.4 and later, use IOHXEXEC.

**Procedure**

1. Copy SIOHEEXEC member IOHXISPF, IOHXEXEC, or both, from the
SIOHEEXEC library to a CLIST/REXX library.
2. Customize the EXEC to reflect the appropriate installation data set names for
the IMS HP Sysgen Tools target libraries. The following statements must be
updated:

**For SMP/E target libraries:**

• IOHEEXEC = "hlq.IOH230.SIOHEEXEC"
• IOHLLIB = "hlq.IOH230.SIOHLINK"
• IOHMLIB = "hlq.IOH230.SIOHMENU"
• IOHPPLIB = "hlq.IOH230.SIOHPENU"
• IOHSLIB = "hlq.IOH230.SIOHSENU"
For IOHOPT in the SIOHSAMP IOHALCDS job:

- IOHOPT = "hlq.IOH.IOHOPT"

3. Depending on whether you want to use the installation store/forward function, specify either of the following:
   - If you want to use the installation store/forward function, specify:
     ```
     DSN_IOHSTFWD = "DSN('hlq.IOH.IOHSTFWD')"
     ```
   - Otherwise, specify:
     ```
     DSN_IOHSTFWD = "DUMMY"
     ```
   For details about installation store/forward, see "Configuring installation store/forward" on page 51.

Step 8. Define security profiles

IMS HP Sysgen Tools uses five types of security profiles to determine if a user is permitted to perform a function.

Before you begin

Each IMS subsystem can have a different set of permissions, or all IMS subsystems can share the same definition by using a generic resource profile, for example, IOH.EDIT.*

Each profile includes an IMSID field as the last qualifier of the resource name. If all IMS subsystems have the same access list, a generic profile can be defined instead of multiple profiles for each IMS subsystem on the MVS image.

Access to these resources is checked only on the MVS system where the IMS subsystem runs, not on the MVS system where the TSO user is logged on.

Procedure

Define the following profiles in the FACILITY class:

**IOH.SETUP**

This profile defines which users have the authority to use the Profile and User options in IMS HP Sysgen Tools setup menu. This profile should be restricted to those who administer IMS HP Sysgen Tools.

**IOH.EDIT.imsid**

This profile defines users who can edit resource update lists. Edit capability is checked only when retrieving existing resource definition information from an IMS subsystem.

Access of READ or higher allows the user to edit a resource update list.

Access of NONE causes any requests for IMS resource information to be denied.

**IOH.CHECK.imsid**

This profile defines users who can check resource update lists.

Access of READ or higher allows the user to check a resource update list.

Access of NONE causes any requests to check a resource update list to be denied.
IOH.INSTALL.imsid
This profile defines users who can install resource update lists.
Access of READ or higher allows the user to install resource update lists.
Access of NONE causes any requests to install a resource update list to be denied.

IOH.IMSCMD.imsid
This profile defines users who can use the IMS command option of the IMS HP Sysgen Tools ISPF menu.
Access of READ or higher allows the user to issue IMS commands for the specified IMSID.
Access of NONE causes any requests to issue an IMS command to be denied.

IOH.STORAGE.imsid
This profile defines users who are authorized to view or update IMS storage using the storage Display and Update ISPF option.
Access of UPDATE or higher allows a user to change (zap) IMS storage. Because this could cause significant problems, access to change storage should be limited to authorized personnel.
Access of READ or higher allows a user to display storage used by IMS, but not to update it.
Access of NONE prohibits a user from viewing or updating storage used by the IMS system.

For a sample job that shows how to define resources to RACF and permit users access to the resources, see member IOHRACF in the SIOHSAMP data set.

Step 9. Create an IMS HP Sysgen Tools authorized user ID
If you do not have authorization to the required resources, HP Sysgen provides a special “authorized user ID” that allows you to perform the functions required during the resource update list install process.

Before you begin
• If every HP Sysgen user who has authorization to install a resource update list also has authority to the resources, you can skip the following steps and instead specify an asterisk (*) for the authorized user ID in the IMSID setup options. When an asterisk is specified, HP Sysgen uses the requesting user ID instead of the authorized user ID to perform a resource update list install.
• The authorized user ID is only used in the APPC/MVS initiator address space.

About this task
IMS HP Sysgen Tools allows you to install a resource update list without the required security authorization to update APF-authorized libraries, including the MODBLKS and MATRIX data sets, or IMS commands such as /MODIFY, /START, and /ASSIGN that are used during the resource update list install process.

Procedure
To create an authorized user ID:
1. Define a new user ID and allow the user ID to:
• Issue all IMS commands
• Update the MODBLKS and MATRIX data sets
• Read SIOHLINK, IOHOPT, and IMS RESLIB data sets
• UPDATE access to MODBLKS, MODBLKSA, MODBLKSB, MATRIX, MATRIXA, and MATRIXB
• READ access to the RESLIB, MODSTAT/OLCSTAT, IOHOPT, and SIOHLINK data sets
• UPDATE access to the IOHLOG data set of each IMS system

Recommendation: Use IOHAPPC as the authorized user ID name, because this name matches the job name used in the APPC/MVS initiator.

2. Specify the authorized user ID in the IMSID setup options for each IMS control region.

Step 10. Verify IMS requirements

Verify that IMS HP Sysgen Tools conforms to the IMS requirements.

Procedure

• Ensure that the AOIS parameter value specified in IMS PROCLIB member DFSPBxxx is set to A, C, or R.
• Ensure that the CMDMCS parameter in the IMS PROCLIB member DFSPBxxx does not specify value N. IMS HP Sysgen Tools uses the IMSID command recognition character to issue /MODIFY commands.

Step 11. Add APPLCTN for IMS HP Sysgen Tools

IMS HP Sysgen Tools might require an IMS APPLCTN definition in the IMS sysgen.

About this task

Although a PSB is used only when APPC/IMS is not active, defining this resource provides you with a backup in the event that APPC is not available.

Procedure

Add the following definition to the IMS stage 1 sysgen source:

Use batch Fastgen (or an IMS MODBLDS gen) and online change to install this definition.

APPLCTN GPSB=IOHCMD,PGMTYPE=BATCH,SCHDTYP=PARALLEL

Step 12. Optional: Add IMS HP Sysgen Tools to a user menu

Optionally, you can modify a user menu to include the option to invoke IMS HP Sysgen Tools through the ISPF interface. If you do not update a user menu, you can access the ISPF interface by using TSO command %IOHXISPF or %IOHXEXEC.

Procedure

1. Update the menu to add an option for IBM IMS HP Sysgen Tools.
2. In the &ZSEL section, translate the selection option to CMD(%IOHXISPF) or CMD(%IOHXEXEC).

Chapter 2. Configuring IMS HP Sysgen Tools 35
Step 13. Define resource class APPCLU profiles to your security system

You must set up APPC/MVS LU definitions to provide automatic propagation so that APPC/MVS can propagate the requestor's security user ID from the TSO session (or batch job) to the APPC/MVS initiator where HP Sysgen executes.

Before you begin

If all of the LU definitions in VTAMLST specify SECACPT=ALREADYV (or SECACPT=AVPV), there is no need to define any additional security profiles.

If the SECACPT= values specified in VTAMLST do not already specify ALREADYV or AVPV, you must either change the keyword definitions in the VTAM definition list or define resource class APPCLU profiles to your security system that permit you to override the SECACPT= value for a conversation between two specific LU names.

Important:
- Changing the keyword definitions can potentially affect other APPC applications that are running in your environment.
- Defining APPCLU profiles requires multiple RACF definitions and can be complicated to update when a new MVS LPAR must be added to your environment.

About this task

You can define class APPCLU profiles that allow you to specify SECACPT=ALREADYV (or SECACPT=AVPV).

You can define class APPCLU profiles that permit you to override the SECACPT= value for a conversation between two specific LU names. Defining APPCLU profiles allows you to override the SECACPT= value specified on the VTAM APPL definition. The profile name includes both LU names involved in the session. The format of the profile name is either:

- `net-id.local-lu-name.remote-lu-name`
- `net-id.local-lu-name.net-id.remote-lu-name`

Where:

`net-id` The network ID.

`local-lu-name` The base LU name for APPC/MVS.

`remote-lu-name` The base LU name for IMS APPC LU.

Procedure

To define a security profile:

1. Determine the LU name by issuing a `D APPC,LU,ALL` command. The display output shows all of the LU names defined to APPC on that MVS LPAR.
In this example, the local-lu-name is shown in the line that contains SCHED=ASCH and BASE=YES (in this example, LLUN=MVSLU01). The remote-lu-name is shown in the line that contains SCHED=imsid and BASE=YES (in this example, LLUN=IMS09PPC).

D APPC,LU,ALL
ATB121I 12.05.30 APPC DISPLAY 796
ACTIVE LU'S OUTBOUND LU'S PENDING LU'S TERMINATING LU'S
00006 00000 00006 00000
SIDEINFO=SYS1.APPCSI
LLUN=IMS09PPC SCHED=IMS9 BASE=YES NQN=NO
STATUS=ACTIVE PARTNERS=00001 TLEVEL=SYSTEM SYNCPT=NO
GRNAME=*NONE* RMNAME=*NONE*
TPDATA=SYS1.APPCTP
PLUN=ADCD.MVSLU01

LLUN=MVSLU01 SCHED=ASCH BASE=YES NQN=NO
STATUS=ACTIVE PARTNERS=00004 TLEVEL=SYSTEM SYNCPT=NO
GRNAME=*NONE* RMNAME=*NONE*
TPDATA=SYS1.APPCTP
PLUN=ADCD.IMS9PPC
PLUN=ADCD.IMS0PPC
PLUN=ADCD.IMS9PPC
PLUN=ADCD.MVSLU01

2. Determine the net-id by issuing the command D NET,ID=Luuname.
For example:
D NET,ID=MVSLU01
IST097I DISPLAY ACCEPTED
IST075I NAME = ADCD.MVSLU01, TYPE = APPL 803

The IST075I message in the display output shows the net-id just before the LU name. In this example, the LU name displayed is MVSLU01, so the net-id is ADCD.

3. Determine the format of the profile name by the NQN= value.
   • If the LU names specify NQN=NO, then the profile name used is net-id.local-lu-name.remote-lu-name.
   • If NQN=YES is shown, then the profile name used must include the net-id (network ID) twice, as in net-id.local-lu-name.net-id.remote-lu-name.

a. Optional: Define both forms of the APPCLU profiles. If this is done when the profiles are initially defined, a change in the NQN specification does not require changes in the defined security profiles. For the example:
   • If you specify NQN=NO
     ADCD.MVSLU01.MVSLU01
     ADCD.MVSLU01.IMS9PPC
     ADCD.IMS9PPC.MVSLU01
   • If you specify NQN=YES
     ADCD.MVSLU01.ADCD.MVSLU01
     ADCD.MVSLU01.ADCD.IMS9PPC
     ADCD.IMS9PPC.ADCD.MVSLU01

4. Define the security profiles by specifying a value for SESSION CONVSEC of ALREADYV (or AVPV). If you use the RACF program product, the format of the command to define these profiles is (for an NQN=NO environment):

RDEFINE APPCLU (ADCD.MVSLU01.MVSLU01) UACC(NONE) SESSION(CONVSEC(ALREADYV))
RDEFINE APPCLU (ADCD.MVSLU01.IMS9PPC) UACC(NONE) SESSION(CONVSEC(ALREADYV))
RDEFINE APPCLU (ADCD.IMS9PPC.MVSLU01) UACC(NONE) SESSION(CONVSEC(ALREADYV))

Important: If VERIFY=REQUIRED is specified on the VTAM APPL definitions in VTAMLST, session key definitions might also be required in the RACF.
commands. For additional information on session keys, see z/OS MVS Planning: APPC/MVS Management and z/OS Security Server RACF Command Language Reference.

5. If the APPCLU resource class is RACLISTed on your system, refresh it after defining APPCLU profiles by using the following command:

   SETROPTS RACLST(APPCLU) REFRESH

   This SETROPTS command can be issued even if the APPCLU resource class is not RACLISTed.

   a. Optional: Request that VTAM refresh the profiles it keeps for APPC LUs by issuing the MVS command:

      F vtam-proc-name,PROFILES,ID=lu-name

      Where vtam-proc-name is the name of the started task that executes VTAM, and lu-name is the APPC LU name that you want VTAM to reload security profiles for.

What to do next

If you have multiple IMS subsystems you must create multiple profiles. For each IMS subsystem, you need only create 1 set of profiles for the APPC/IMS LU name and the APPC/MVS base LU name on the MVS LPAR where IMS runs.

If you have multiple MVS LPARs, each LPAR should have a different APPC/MVS base LU name. For example, if you have 2 LPARs, and want to be able to use HP Sysgen from LPAR 1 to access an IMS subsystem that runs on LPAR 2, you would need to create multiple profiles. In the following example, LPAR SYS1 has APPC/MVS base LU name MVSLU01 and LPAR SYS2 has APPC/MVS base LU name MVSLU02, you should create the following profiles (for an NQN=NO environment):

   ADCD.MVSLU01.MVSLU02
   ADCD.MVSLU02.MVSLU01
   ADCD.MVSLU01.MVSLU01
   ADCD.MVSLU02.MVSLU02

   These profiles would allow you to access IMS systems on SYS1 from either SYS1 or SYS2, and IMS systems on SYS2 from either SYS2 or SYS1.
Defining IMS HP Sysgen Tools options

After you complete configuration tasks, IMS HP Sysgen Tools is ready for use. Before performing any other actions, you must enter at least one IMSID in the IMSID Setup, using option 0 of the IMS HP Sysgen Tools main menu.

You can also use batch utility IOHBIMS to create IMSID options, but this method requires that you specify all the required data set names because the batch utility does not use APPC/MVS to obtain the data set names used by the IMS control region. The batch utility was designed for users who do not intend to use the ISPF interface. For additional information on the IOHBIMS batch utility, see Chapter 16, “Using the Batch IMSID Options utility,” on page 221.

When you run the %IOHXISPF or %IOHXEXEC command for the first time, you must enter the name of a valid IOHPDS data set on the IMS HP Sysgen Tools main menu. The data set name must be fully qualified without any quotation marks. ISPF uses this name on each subsequent invocation of the %IOHXISPF or %IOHXEXEC command.

To add a new IMSID, use option 0 from the IMS HP Sysgen Tools Primary Options menu. The IMS HP Sysgen Tools SETUP menu shown in Figure 1 is displayed. The IOHOPT data set name is automatically populated with the DSN specified for the IOHOPT data set that you specified in the IOHXISPF or IOHXEXEC EXEC.

Select option 1 to display the IMSID Setup list.

Figure 1. IMSID options setup menu

After selecting option 1, a list is displayed of all IMSIDs that have options modules. If you have no IMSID options defined, the list is empty, as shown in the following panel:

Figure 2. IMSIDs options modules - Empty list
To add a new IMSID, enter $xxxx$, where xxxx is the IMSID which you want to add. The first of five IMSID setup panels is displayed.

Figure 3. Add IMSID panel 1 of 5

where:

**IMSID**

The IMSID of the subsystem for which you want to create an options member. To proceed to the next setup panel, this IMS subsystem must be running.

**Authorized User ID**

The name of the user ID you created previously. IOHAPPC is suggested, as mentioned in “Step 9. Create an IMS HP Sysgen Tools authorized user ID” on page 34. The user ID must be present on the MVS system where the IMSID is currently running. Instead of a user ID, you can also specify this field as an asterisk (*) if all users who will request installation of a resource update list have the authorization required for HP Sysgen install process. See “Step 9. Create an IMS HP Sysgen Tools authorized user ID” on page 34 to see a list of all the authorizations required.

**HP Sysgen PSB Name**

The PSB name you created previously. IOHCMD is suggested, as mentioned in “Step 11. Add APPLCTN for IMS HP Sysgen Tools” on page 35.

**AGN Name for PSB**

This field is optional. If IMS security definitions were updated to require an AGN name for the PSB name, enter one to which all users have access.

**APPC/MVS HP Sysgen TPName**

This field is required and is automatically initialized to the default value of IOH220_IMS_HP_SYSGEN. The name you specify must be 64 characters or fewer and must match the TPName specified in “Step 6. Define APPC/MVS transaction program profile for IMS HP Sysgen Tools” on page 31.
APPC/MVS Symbolic Dest

The name of the APPC symbolic destination for the MVS system where this IMS subsystem is running. This name was created in “Step 4. Define APPC/MVS symbolic destinations” on page 30.

Note: This is not the APPC/IMS LU or symbolic destination name.

When you have completed this panel, press the Enter key to see the second setup panel.

IMS HP Sysgen Tools retrieves data set name information for the current IMS system and includes it in the following panel:

<table>
<thead>
<tr>
<th>SETUP</th>
<th>IMS HP Sysgen Tools - EDIT IMSID IMS1 (Page 2 of 5)</th>
</tr>
</thead>
</table>
| Command: | ===>
| IMS Information: | |
| Suffix | I | (IMS Nucleus Suffix) |
| Online Change | LOCAL | (Global or Local) |
| DRD | ENABLED | (Dynamic Resource Definition) |
| Repository | ENABLED | (IMS resource definition repository) |
| IMS Data Set Names (fully qualified without quotes): | |
| IOHLOG | IMS11.IOH.IOHLOG |
| RESLIB | IMS11.IMS1.SDFSRESL |
| MODSTAT | IMS11.IMS1.MODSTAT |
| IMS MODBLKS Libraries (fully qualified, without quotes): | |
| MODBLKS | IMS11.IMS1.MODBLKS |
| MODBLKSA | IMS11.IMS1.MODBLKSA |
| MODBLKSB | IMS11.IMS1.MODBLKSB |
| User MODBLKS | (Optional) |
| IMS MATRIX Libraries (fully qualified without quotes): | |
| MATRIX | IMS11.IMS1.MODBLKS |
| MATRIXA | IMS11.IMS1.MODBLKSA |
| MATRIXB | IMS11.IMS1.MODBLKSB |
| User MATRIX | (Optional) |

Press Enter to continue to Page 3

Figure 4. Add IMSID panel 2 of 5

where:

**Suffix** The IMS nucleus suffix as defined in the DFSPBxx member of the IMS PROCLIB on the SUF= keyword. This field is populated by IMS HP Sysgen Tools and cannot be changed.

**Online Change** Shows whether this IMS system is defined for local online change or global online change. This field is populated by IMS HP Sysgen Tools and cannot be changed.

**DRD** Shows whether IMS Dynamic Resource Definition (DRD) is enabled or disabled in this IMS system. This field is populated by IMS HP Sysgen Tools and cannot be changed.

**Repository** Shows whether the IMS resource definition (IMSRSC) repository is enabled or disabled in this IMS system. This field is populated by IMS HP Sysgen Tools and cannot be changed.

**IMS Data Set Names** Fully qualified data set names, without quotation marks. MODSTAT is populated by IMS HP Sysgen Tools and cannot be changed. The RESLIB data set is also populated by IMS HP Sysgen Tools and cannot be changed.
It is the library that contains the current DFSVNUCx, DFSISDCx, and DFSVC000 modules that are being used by the IMS control region.

**IOHLOG**
Requires the data set name for the IOHLOG data set as allocated in the IOHALOG member of the SIOHSAMP library.

**IMS MODBLKS Libraries**
MODBLKSA and MODBLKSB are populated by IMS HP Sysgen Tools and cannot be changed.

**MODBLKS**
Requires the name of the staging MODBLKS data set.

**User MODBLKS**
Optional. Allows you to enter a MODBLKS data set name which is updated by the installation of resource update lists. If you want to maintain a backup of the current MODBLKS, you can use this field to enter the name of the backup MODBLKS.

**IMS MATRIX Libraries**
MATRIXA and MATRIXB are populated by IMS HP Sysgen Tools and cannot be changed.

**MATRIX**
Requires the name of the staging MATRIX data set.

**User MATRIX**
Optional. If you want to maintain a backup of the current MATRIX libraries, you can use this field to enter the backup name of the MATRIX libraries.

When you have completed this panel, press Enter. IMS HP Sysgen Tools displays the third of five setup panels as shown in Figure 5 on page 43.

Use this panel to define IMS sysgen source information. Entering data on this panel is optional, and is used only in ISPF option 5, Validation of gen source and option 6, Fastgen. If you do not expect to use these options, this panel and panel 4 can be left blank. If you require these panels later, you can complete them at that time.

To enter your IMS sysgen source information, determine the data set names that identify where your IMS sysgen source is located. You enter information on this panel based on how the sysgen source is organized. Follow instructions on the panel.

All data set names must be fully qualified names with no quotation marks.
You can specify up to 30 data set names on this panel.

**Figure 6** shows a basic configuration of IMS sysgen source. It shows IMS sysgen input present in five members of a gen source PDS.

If IMS gen source will be specified as sequential data set names or as data sets with member names, leave the MEMBER field blank. If the gen source is specified as PDS data sets without member names, enter the member name of the main gen source file (probably containing COPY statements) below.

**Figure 5. Add IMSID panel 3 of 5**

You can specify up to 30 data set names on this panel. **Figure 6** shows a basic configuration of IMS sysgen source. It shows IMS sysgen input present in five members of a gen source PDS.

**Figure 6. IMS sysgen source example 1**

This example could also have a member in IMS910.IMSGEN.CNTL called IMS9COPY, which would consist of the following statements:

```
COPY SYSTEM
COPY DATABASE
COPY PROGRAM
COPY TERMINAL
COPY IMSGEN
```

This member would use the information in **Figure 7 on page 44**.
When you have completed this panel, press Enter twice to display the fourth setup panel as shown in the following figure:

In this panel, you specify the IMS security gen source data sets. Enter security gen source data set names as they appear in the SYSIN DD in the security gen job. You might enter up to 10 data set names.

When you have completed this panel, press Enter twice to display the final setup panel, as shown in the following figure:
The IMS IMS9 Resource Definition Data Set (RDDS) names are listed below. You can use the Up and Down PF Keys to scroll through the RDDS data set names. There will only be RDDS data set names listed if DRD is enabled. If DRD is disabled, no RDDS data set names will be listed.

Press the End Key to SAVE these IMSID options
Enter the Cancel command to exit IMSID setup without saving

Resource Definition Data Set Name

IMS11.IMS9.RDDS1
IMS11.IMS9.RDDS2
IMS11.IMS9.RDDS3

Figure 9. Add IMSID panel 5 of 5

You cannot change the information on this screen. It is shown for informational purposes only.

The fifth Add IMSID panel displays any IMS RDDS names that are defined. If DRD is disabled, the list of RDDS names is blank.

When you have verified that the RDDS names are valid for this IMS system, you can either press PF3 to save the updated IMSID options module, or you can enter the CANCEL command on the command line to discard all changes to the IMSID options on the prior four panels.

IMS HP Sysgen Tools returns to the IMSID selection menu, which now displays the added options member as shown in the following figure:

Figure 10. IMSID selection menu

These options are saved in the IOHOPT data set in member IOH@xxxx, where xxxx is the IMSID. For information about allocating and sharing IOHOPT, see “Step 5 Allocate libraries” on page 30.
Fast Sysgen performance suggestions

Sorting resource names uses the largest amount of computer resources in the traditional IMS sysgen process. Fast Sysgen takes advantage of better sorting techniques to improve IMS sysgen performance.

Presorting IMS resources does not improve Fast Sysgen performance. Although CPU resource consumption can be improved in the standard IMS process by sorting in descending order, this is usually not necessary using Fast Sysgen because the sort techniques it uses are faster than the traditional IMS sysgen.

The steps you can take to improve Fast Sysgen performance are related to I/O processing. You should:

- Consider blocking the MODBLKS and MATRIX data sets at either one-half track blocking or the maximum block size (32760).
- Ensure that all MODBLKS and MATRIX data sets use the same block size (including the staging library as well as the A and B libraries).
- Increase the block size of the sysgen source libraries to either one-half track blocking or the largest reasonable block size.
- Reduce the number of lines of source code in the IMS sysgen source. This can be accomplished by merging short lines of macros; for example, not using a line for each keyword.

The greatest sysgen performance improvement, for Fast Sysgen or traditional IMS sysgen, is achieved by eliminating unused resource definitions from the IMS sysgen source.
IMS Sysgen source organization

This section discusses suggestions for improving Fast Sysgen performance, managing sysgen source and using SCLM to validate sysgen updates.

Topics:
- “Sysgen source organization”
- “Using software configuration and library manager to validate sysgen updates” on page 50

Sysgen source organization

Managing IMS sysgen source requires careful attention. For efficient use of IMS HP Sysgen Tools, you should ensure that a source management process has been implemented for IMS sysgen and security gen source. You can organize sysgen source in a number of ways that are supported by Fast Sysgen.

You can maintain sysgen source in members of a PDS or in one or more sequential data sets. The Fast Sysgen process supports as many as 50 different partitioned or sequential data sets containing sysgen source.

It is important to maintain application independence in case, for example, changes to sysgen source are managed by application programmers or DBAs, while IMS sygsens are performed by IMS system support staff. To ensure independence is maintained, each application can maintain a separate sysgen source data set. This data set could include multiple members in a single PDS. Your installation’s security software can be used to ensure that individuals responsible for different applications are allowed to update only one source data set and read the sysgen source of other applications.

Example: Managing sysgen source for application independence

In this example, assume that there are three applications in an IMS subsystem: payroll, accounts payable and accounts receivable.

In addition, IMS system support maintains the system macros, such as IMSCTRL and IMSCTF, terminal definitions and perhaps application definitions, such as APPLCTN, TRANSACT, and DATABASE macros.

You could implement this configuration as shown in the following series of tables:

The following PDSs could be created:

<table>
<thead>
<tr>
<th>Table 1. Application PDSs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application PDS</td>
</tr>
<tr>
<td>---------------------------</td>
</tr>
<tr>
<td>IMS.SYSGEN.SOURCE</td>
</tr>
<tr>
<td>PAYROLL.SYSGEN.SOURCE</td>
</tr>
<tr>
<td>ACCTPAY.SYSGEN.SOURCE</td>
</tr>
<tr>
<td>ACCTRECV.SYSGEN.SOURCE</td>
</tr>
</tbody>
</table>

The IMS sysgen source data set could contain members such as *imid*COPY, where *imid* is the IMSID of the IMS subsystem. This member would contain Assembler COPY statements for all members used in the sysgen for this IMS subsystem.
Table 2. Source data set members

<table>
<thead>
<tr>
<th>IMS sysgen source data set members</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUPPORT</td>
<td>Contains IMS support macros, APPLCTN, TRANSACT and DATABASE</td>
</tr>
<tr>
<td>MASTER</td>
<td>Contains IMS master terminal definitions</td>
</tr>
<tr>
<td>TERMINAL</td>
<td>Contains terminal definitions</td>
</tr>
<tr>
<td>imidSYS</td>
<td>Contains IMS system macros, such as IMSCTRL and IMSCTF. It cannot contain the IMSGEN macro which must be last in the gen source</td>
</tr>
<tr>
<td>imidGEN</td>
<td>Contains IMSGEN macro</td>
</tr>
</tbody>
</table>

The PAYROLL sysgen source data set could contain members such as the following:

Table 3. PAYROLL sysgen source data set members

<table>
<thead>
<tr>
<th>PAYROLL sysgen source data set members</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAYAPPL</td>
<td>Contains the APPLCTN and TRANSACT macros required for the payroll application</td>
</tr>
<tr>
<td>PAYDBD</td>
<td>Contains the DATABASE macros required for the payroll application.</td>
</tr>
</tbody>
</table>

The ACCTPAY sysgen source data set could contain a member such as the following:

Table 4. ACCTPAY sysgen source data set member

<table>
<thead>
<tr>
<th>ACCTPAY sysgen source data set member</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCTPAY</td>
<td>Contains all the accounts payable application definitions (APPLCTN, TRANSACT and DATABASE).</td>
</tr>
</tbody>
</table>

The ACCTRECV sysgen source data set could contain a member such as the following:

Table 5. ACCTRECV sysgen source data set member

<table>
<thead>
<tr>
<th>ACCTRECV sysgen source data set member</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCTRECV</td>
<td>Contains all the accounts receivable definitions (APPLCTN, TRANSACT and DATABASE).</td>
</tr>
</tbody>
</table>

Given this environment, the sysgen source would be connected using the imidCOPY member in the IMS sysgen source data set. If the IMS subsystem name was DEV5, member DEV5COPY would contain the following:

Table 6. DEV5COPY sysgen source data set member

<table>
<thead>
<tr>
<th>Copy statement</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPY DEV5SYS</td>
<td>SYSTEM MACROS</td>
</tr>
</tbody>
</table>
Table 6. DEV5COPY sysgen source data set member (continued)

<table>
<thead>
<tr>
<th>Copy statement</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPY SUPPORT</td>
<td>SYSTEM TRANSACTIONS</td>
</tr>
<tr>
<td>COPY PAYAPPL</td>
<td>PAYROLL</td>
</tr>
<tr>
<td>COPY PAYDBD</td>
<td>PAYROLL</td>
</tr>
<tr>
<td>COPY ACCTPAY</td>
<td>ACCOUNTS PAYABLE</td>
</tr>
<tr>
<td>COPY ACCTRECV</td>
<td>ACCOUNTS RECEIVABLE</td>
</tr>
<tr>
<td>COPY MASTER</td>
<td>MASTER TERMINAL / BTAM</td>
</tr>
<tr>
<td>COPY TERMINAL</td>
<td>MSC/ISC/Terminals</td>
</tr>
<tr>
<td>COPY DEV5GEN</td>
<td>IMSGEN MACRO</td>
</tr>
</tbody>
</table>

Advantages of this sysgen source environment:

This sysgen source environment functions for both the traditional IMS sysgen process and the Fast Sysgen process. For a traditional IMS sysgen, the following DD statements would be included in the stage 1 sysgen process.

```
//SYSLIB DD DSN=IMS.MACLIB,DISP=SHR
// DD DSN=IMS.GENLIB,DISP=SHR
// DD DSN=SYS1.MACLIB,DISP=SHR
// DD DSN=IMS.SYSGEN.SOURCE,DISP=SHR
// DD DSN=PAYROLL.SYSGEN.SOURCE,DISP=SHR
// DD DSN=ACCTPAY.SYSGEN.SOURCE,DISP=SHR
// DD DSN=ACCTRECV.SYSGEN.SOURCE,DISP=SHR
//SYSIN DD DSN=IMS.SYSGEN.SOURCE(DEV5COPY),DISP=SHR
```

To use the configuration with IMS HP Sysgen Tools Fastgen or ISPF panels, you would code the IMSID setup panel containing IMS sysgen source information (panel 3) as:

```
SETUP IMS HP Sysgen Tools - EDIT IMSID (Page 3 of 5)  Row 1 to 21 of 30
Command ===>
Scroll ===>
CSR

If IMS gen source will be specified as sequential data set names or as data sets with member names, leave the MEMBER field blank. If the gen source is specified as PDS data sets without member names, enter the member name of the main gen source file (probably containing COPY statements) below.

Member ===>

DEV5COPY

Line CMDs: Specify SYSIN data set names for the IMS Stage 1 Sysgen process.

I Insert When finished press enter with no updates to the screen.
D Delete
R Replicate

CMD Data Set Name (Fully qualified DSN without quotes)

- IMS.SYSGEN.SOURCE
- PAYROLL.SYSGEN.SOURCE
- ACCTPAY.SYSGEN.SOURCE
- ACCTRECV.SYSGEN.SOURCE

Figure 11. IMSID setup panel for Fastgen or ISPF panels that contain sysgen source information

This sysgen source environment has the following advantages:

- Application independence can be maintained.
- You can use your existing security system to ensure that only appropriate personnel can update the sysgen source for each application.
• You can easily add or remove applications by making a few changes to JCL and/or control cards.

Using software configuration and library manager to validate sysgen updates

You can use Software Configuration and Library Manager (SCLM) to validate and promote IMS sysgen source changes. Doing so provides benefits of sysgen source validation before allowing sysgen changes to be used in an online or batch sysgen process. These benefits include testing source updates through the Fast Sysgen process before allowing changes.

SCLM provides a structure for updating, promoting and implementing application code changes. As part of the code promotion process, SCLM compiles and links application programs. Similarly, you can configure SCLM to invoke Fast Sysgen to verify that IMS sysgen source is valid before allowing any changes to be promoted to the production version of sysgen source.
Configuring installation store/forward

If an IMS system is not active at the time the resource update list is being installed, installation fails. However, if you use the installation store/forward function, the resource update list is automatically installed later when the IMS become active.

To install the resource update list through the ISPF user interface or as a batch job, the target IMS must be online; otherwise, installation fails. The installation store/forward function enables you to store the failed installation information in the store/forward VSAM data set, categorized by IMSIDs, and to retry the installation later when the IMS becomes active.

Installation store/forward is available only if the store/forward VSAM data set is specified in the batch job (IOHBLIST) or the IOHXSIPF EXEC statement. Installation store/forward supports only INSTALL commands for resource update lists.

Topics:

- “How installation store/forward works”
- “Activating installation store/forward” on page 52
- “Scheduling the REDO job” on page 53
- “REDO job JCL requirements” on page 54
- “Reports generated by installation store/forward” on page 55
- “Restrictions for using the installation store/forward function” on page 56

How installation store/forward works

The process of the installation store/forward function can be divided into two steps: storing the failed installation information and reinstalling it by running the REDO job.

Step 1: Storing the installation information in the store/forward VSAM data set

If any of the following situations occurred during installation of the resource update list, the installation information for the failed IMS is stored in the store/forward VSAM data set:

- The target IMS specified by the IMSID= parameter was configured as a local online change system, and installation of the resource update list failed because that IMS system was not active during installation.
- None of the IMS systems in the group specified by the TARGET= parameter was configured as a global online change system, and installation of the resource update list failed for some of those IMS systems because they were not active.
- In the group specified by the TARGET= parameter, some IMS systems were configured as global online change systems and others were configured as local online change systems. Installation of the resource update list was successful for all the IMS systems that were configured as global online change, but failed for the IMS systems that were configured as local online change and were not active.

If you specified the IMSID= parameter to install the resource update list, one record is written in the store/forward VSAM data set. If you specified the TARGET= parameter to install the resource update list, records are categorized by the IMSIDs and written in the store/forward VSAM data set.
Step 2: Installing the resource update list by running the REDO job

For each of the IMSID whose installation information is stored in the store/forward VSAM data set, a REDO job is invoked when the target IMS starts. The REDO job reads the installation information from the store/forward VSAM data set and runs IOHBLIST to install the resource update list.

If the installation is successful, the respective installation information is removed from the store/forward VSAM data set.

If the installation fails, the installation information stored in the store/forward VSAM data set is not removed. Check the error and take an appropriate action. If the entry is no longer needed, delete it manually by using the TSO ISPF editing function.

Deleting an entry from the store/forward VSAM data set:
1. See the [IOH7603I] message in the REDO job report to identify the key information of the record whose installation information you want to delete.
2. Edit the store/forward VSAM data set on TSO ISPF.
3. Search the data set for the key that was identified in step 1 to locate the record.
4. Delete the record from the data set.

Record format of the store/forward VSAM data set:
The following table illustrates the record format of the IOHSTFWD data set:

<table>
<thead>
<tr>
<th>Keys (80 bytes)</th>
<th>Variable length data (up to 2480 bytes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMSID</td>
<td>Date</td>
</tr>
<tr>
<td></td>
<td>Time</td>
</tr>
<tr>
<td></td>
<td>Command</td>
</tr>
<tr>
<td></td>
<td>IOHPDS data set name</td>
</tr>
<tr>
<td></td>
<td>Group</td>
</tr>
<tr>
<td></td>
<td>(reserved)</td>
</tr>
<tr>
<td></td>
<td>Number of entries</td>
</tr>
<tr>
<td></td>
<td>IOHPDS member list</td>
</tr>
</tbody>
</table>

|               | CL4   | CL8   | CL13  | CL1   | CL44  | CL8   | CL2   | XL2   | 256CL8 |

Activating installation store/forward
To configure the installation store/forward feature, you must prepare the store/forward VSAM data set and activate the REDO job.

Before you begin
1. Allocate and initialize the IMS HP Sysgen Tools store/forward data set by using the sample JCL that is provided in the IOHSTF member of the AIOHSAMP data set. Ensure that you tailor the JCL as described in the sample. For information about allocating enough DASD space, see "How installation store/forward works" on page 51 and the explanation of IOHSTFWD in "REDO job JCL requirements" on page 54.

   Important: Always use this JCL because you must initialize the store/forward VSAM data set by using the IMS HP Sysgen Tools utility IOHSWINI.

2. Allocate the store/forward VSAM data set on a DASD that is being shared among:
   - MVS on which the installation takes place
• MVS on which the REDO job runs
• MVS on which the target IMS operates

3. Edit the IOHXEXEC REXX EXEC that you copied in “Step 7. Copy IOHXSIPF or IOHXEXEC to CLIST/REXX library” on page 32. Specify the name of the store/forward VSAM data set (IOHSTFWD) that you created in step 1 on page 52 as follows:

\[
\text{DSN}_{-}\text{IOHSTFWD} = \text{"DSN('hlq.IOH.IOHSTFWD')"}
\]

Procedure

1. Customize the JCL for the REDO job. Sample JCL is provided in the IOHREDO member of the AIOHSAMP data set. Ensure that you tailor the JCL as described in the sample.

2. Specify any required parameters in the IOHREDO JCL. For detailed descriptions of the required parameters, see “REDO job JCL requirements” on page 54.

Scheduling the REDO job

The REDO job must be scheduled immediately after IMS is started and before the system is opened up for processing.

Before you begin

The REDO job basically runs on the same IMS system that processes the installation of the resource update list. To customize which target IMS systems are processed by the REDO job, specify target IMS systems in the SYSIN control statement.

Procedure

The following steps describe a sample procedure for scheduling the REDO process:

1. Start the IMS control region.

2. Use IMS TCO (time-controlled operations) to start the REDO job immediately at IMS startup.

   In order to use IMS TCO for a REDO job, register the REDO job with the IMS.JOBS data set that is used for the IMS /START REG command.

   When writing a TCO script, note the following:
   • Code the /START REG command for starting the REDO job at the top of the TCO script.
   • Set an interval time between the REDO job startup and the subsequent TCO script startup. Specify an appropriate interval time for your system.
   • In the subsequent script, include a command that activates IMS resources such as /STA DC or /STA REGION.

   In the following example, the REDO job is registered with the IMS.JOBS data set as "IOHREDO". The example assumes that the /STA REG command for starting the REDO job was added to an existing TCO script. The next command will be invoked three minutes after the REDO job is started.
For more information, see the topic "IMS time-controlled operations" in *IMS Operations and Automation*.

**Important:** In an IMS DBCTL environment, you must implement this function without using TCO because of an IMS restriction. For more information, see “Restrictions for using the installation store/forward function” on page 56.

**What to do next**

If the REDO job ends abnormally for some reason, fix the error and rerun the REDO job manually.

**REDO job JCL requirements**

Sample JCL for the REDO job can be found in the IOHREDO member of the AIOHFSAMP data set.

The following DD statements are required for the REDO job JCL:

**REDOCTL**

Specifies the IMSIDs of the target IMS systems on which to reinstall resource update lists. Specify the IMSID= control statement in the following format:

```
IMSID=imsid1,imsid2,imsid3,...
```

The IMSID= statement can be placed anywhere between column 1 and 71. If column 1 is an asterisk (*), that line is treated as a comment line.

Use commas to separate two or more IMSIDs on the same IMSID= statement. An IMSID= statement must be on the same line.

You can specify as many IMSID= control statements as you want, provided that the total number of IMSIDs defined does not exceed 256.

**REDOPT**

Specifies the location for output reports from the installation store/forward function. The location can be a SYSOUT file or a data set.

**IOHSTFWD**

Specifies the store/forward VSAM data set in which the information about reinstalling the resource update list is stored.

The records must be fixed length. The CI (control intervals) size is 2560 bytes. The record format is illustrated in Table 7 on page 52.
Reports generated by installation store/forward

When a REDO job for the installation store/forward completes successfully, the status panel displays the information about installation status.

Installation status report

If the installation of a resource update list fails because the target IMS system is not active, message IOH7150E is issued. However, if the installation store/forward function is enabled and the installation information is stored in the store/forward VSAM data set, message IOHF062I is issued instead of IOH7150E.

If you used a batch job (IOHBLIST) to install resource update lists on two IMS systems and one IMS was not active at the time of installation, the following output is generated:

---

**Figure 12. Installation status report for installation store/forward (batch)**

If you used IMS HP Sysgen Tools to install resource update lists on two IMS systems and one IMS was not active at the time of installation, the following output is generated:

---
SUMMARY OF INSTALL PROCESSING:
IOHF061I STORE/FORWARD ACTIVE DSN=IMS.IOH.IOHSTFWD
IMS8: INSTALLATION SUCCESSFUL
IMS9: ERROR DURING VERIFY, INSTALL COMMAND SAVED IN IOHSTFWD
IMSA: ERROR DURING VERIFY, INSTALL COMMAND SAVED IN IOHSTFWD

STORE/FOREWARD KEY INFORMATION

IOHF062I STORE/FORWARD KEY DSN=IMS.IOH.IOHPDS
IMS10 DATE TIME CMD GROUP

IMS 2018.288 030815.257739 1 GROUPPA
IMSA 2018.288 030815.257788 1 GROUPPA

UPDATING INACTIVE MODBLKS DATASET IMS.IOH.MODBLKSB

<table>
<thead>
<tr>
<th>MODULE</th>
<th>CSECT</th>
<th>ENTRY</th>
<th>SIZE</th>
<th>AMODE</th>
<th>RMODE</th>
<th>ATTRIBUTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFSIDIRI</td>
<td>DFSIDMD0</td>
<td>41890</td>
<td>31</td>
<td>ANY</td>
<td>REUS</td>
<td></td>
</tr>
<tr>
<td>DFSIDIR0</td>
<td>DFSIDIR0</td>
<td>19A60</td>
<td>31</td>
<td>ANY</td>
<td>REUS</td>
<td></td>
</tr>
<tr>
<td>DFSRCETE</td>
<td>DBFIRCT0</td>
<td>90</td>
<td>31</td>
<td>ANY</td>
<td>REUS</td>
<td></td>
</tr>
<tr>
<td>DFSMB0I</td>
<td>DFSSMB00</td>
<td>1E30</td>
<td>31</td>
<td>ANY</td>
<td>REUS</td>
<td></td>
</tr>
</tbody>
</table>

ONLINE CHANGE STATUS BEFORE INSTALLATION: MODBLKSA IMSACBA FORMATA
ONLINE CHANGE STATUS AFTER INSTALLATION: MODBLKSB IMSACBA FORMATA

IOH7204W ACBLIB MEMBER FOR NEW/UPDATED DBD TESTDB212 WAS NOT FOUND
IOH7204W ACBLIB MEMBER FOR NEW/UPDATED DBD TESTDB111 WAS NOT FOUND

MESSAGES FOR IMS IMS8

--- ** END OF CONTROL STATEMENTS ** ---

PROGRAM NAME: IMSACBA

The following figure is an example of the REDO job report:

![Figure 13. Installation status report for installation store/forward (ISPF)](image)

**REDO job report**

The REDO job report summarizes the IMSIDs and the resource update lists that were processed.

The following figure is an example of the REDO job report:

![Figure 14. REDO job report](image)

**Restrictions for using the installation store/forward function**

There are several restrictions in using the installation store/forward function.

- Installation store/forward does not apply to an IMS system that is configured as a global online change system.

- If you try to install resource update lists on a group of IMS systems that consists of global online change and local online change systems, whether installation store/forward applies to local online change systems depends on the results of installation on global online change systems.
If installation of resource update lists was successful for all global online change systems, installation store/forward applies to all local online change systems that were not active during the installation.

If installation of resource update lists was not successful for one or more global online change systems, installation store/forward does not apply to any IMS systems in that group.

- IMSIDs and groups must have been registered in advance with the IOHOPT data set.
- If an IMS system is not active at the time of installation, IMS HP Sysgen Tools refers to IOHOPT to determine whether the target IMS is configured as a global online change or a local online change system. Therefore, if the IMS configuration has been changed, update the IOHOPT data set with the latest information.

For information about how to update IOHOPT, see “Defining IMS HP Sysgen Tools options” on page 39.

- In an IMS DBCTL environment, you must implement a function that schedules a REDO job immediately at IMS startup because IMS does not support TCO in the DBCTL environment. Because a REDO job is an OS batch program, most of the automation tools can be used for REDO job scheduling.
Chapter 3. Optional product customization

This section describes how to perform optional configuration tasks.

Topics:

- “Configuring groups of IMS systems” on page 60
- “Resource update list defaults and attribute authorization” on page 63
- “Enabling the use of IMS ACB member level global online change” on page 67
- “Enabling the IMS Managed ACBs Activate method” on page 68
Configuring groups of IMS systems

IMS HP Sysgen Tools allows you to verify and install resource update lists for either a single IMS system, or for multiple IMS systems concurrently.

In order to use group functionality, you must define an IMS HP Sysgen Tools group. The group simply defines a group name, which can be any eight character name that does not start with IOH and a list of IMS systems that are part of the group.

Anyone can use the IMS HP Sysgen Tools Setup option to create or update a group definition. Your security system can be used to prevent users from making changes to group definitions by only allowing authorized users to update the IOHOPT data set.

Adding, deleting, and updating group definitions

A group is defined by using the IMS HP Sysgen Tools ISPF Setup option.

About this task

Selecting option 0 from the IMS HP Sysgen Tools main menu displays the setup menu, as shown in the following figure:

```
SETUP IMS HP Sysgen Tools - Setup
Option ==>  
1 IMSID Define an IMS Subsystem
2 Group Define a group of IMS Subsystems
3 Profiles Define Authorization Profiles
4 Users Define User Authorization

IOHOPT DSN ==> P390M.IOH.IOHOPT
(Fully qualified DSNAME without quotes)
```

*Figure 15. Setup menu*

On the main Setup menu, you must supply the fully qualified data set name of the IOHOPT data set where IMSID definitions are stored. Then, select option 2 to list the groups defined in the specified IOHOPT data set. After selecting option 2, a list of groups currently defined will be displayed as shown in the following figure:
On the setup groups panel, you can update or delete an existing group by selecting its line with a D for Delete or an S to select the group for editing. To add a new group, you must use the S command on the command line along with the name of the group you want to define. For example, to define a new group called MARKIMS, you would enter

S MARKIMS

on the command line.

When deleting a group, a confirmation panel will ask you to verify the group to be deleted. Press Enter to delete the group, or press the End key (usually PF3) to cancel the delete request.

When selecting a group to add or update, you will see a panel showing a list of all the IMS systems defined in the IOHOPT data set. IMS systems to be included as part of the group are marked with a slash (/).

The following figure shows the definition of group IMS789, which includes three IMS systems: IMS7, IMS8, and IMS9.

Figure 16. Group list

On the setup groups panel, you can update or delete an existing group by selecting its line with a D for Delete or an S to select the group for editing. To add a new group, you must use the S command on the command line along with the name of the group you want to define. For example, to define a new group called MARKIMS, you would enter

S MARKIMS

on the command line.

When deleting a group, a confirmation panel will ask you to verify the group to be deleted. Press Enter to delete the group, or press the End key (usually PF3) to cancel the delete request.

When selecting a group to add or update, you will see a panel showing a list of all the IMS systems defined in the IOHOPT data set. IMS systems to be included as part of the group are marked with a slash (/).

The following figure shows the definition of group IMS789, which includes three IMS systems: IMS7, IMS8, and IMS9.
To change a group definition, simply remove the slash (/) before any IMS you want to remove from the group, or add a slash in front of any IMS system to be added to the group. If you want to add an IMS system that is not listed on the panel, you must define that IMSID in the IOHOPT data set using option 1 of the Setup menu. When you press the End key (typically PF3), the changes you entered are saved in the group definition in the IOHOPT data set.

Figure 17. Group definition panel
Resource update list defaults and attribute authorization

IMS HP Sysgen Tools provides the ability for you to customize resource attribute defaults that appear when adding a new resource, and also provides the ability to limit a specific user’s ability to override the default value of a resource attribute.

Following are examples of how you might specify defaults:

- If your installation does not allow conversational transactions, you can prohibit users from entering a value in the SPA size field, and specify that the default SPA size is blank.
- If all transactions should be defined as MODE=SNGL, instead of using the IMS default of MODE=MULT, you can specify a default value of SNGL and prohibit specific users from updating the new SNGL default value.
- You can update the IMS default value for given users, but allow them to override the default value.

IMS HP Sysgen Tools uses profile and user definitions to define these abilities. A profile defines updated default values for each attribute value, and whether updates to each attribute value are permitted. A user definition associates a specific user ID with a profile name. A profile must be defined before any user definitions can be entered.

In order to view or update profile and user definitions, you must have read access to security profile IOH.SETUP. See sample job IOHRACF for the definition of this resource and how to provide appropriate users with access to this security profile.

Working with profiles

To work with IMS HP Sysgen Tools profile definitions, select option 3 from the Setup menu. A list of profiles defined in the IOHOPT data set is displayed.

About this task

A sample list of profiles is shown in the following figure:

```
PROFLE  IMS HP Sysgen Tools - List of Authorization Profile Row 1 to 5 of 5
Command ====> Scroll ====> CSR

Primary Commands:     Line Commands:
S Edit/Create a Profile D Delete a Profile

Profile  Description
DALE   DALE'S PROFILE
SYSPROG1 SYSTEM PROGRAMMER PROFILE
PROG1   APPLICAITON PROGRAMMER PROFILE
DBA2   DBA PROFILE 2
DBA1   DBA PROFILE 1

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

Figure 18. List of profiles

From the List of profiles panel, you can delete or edit an existing profile by selecting it with a D or S line command. To add a new profile, use the command line to enter S name where name is the name of the profile you want to define.
If you attempt to delete a profile, you will be presented with a panel requesting that you confirm the attempt to delete the profile. Note that if any user definitions are associated with the profile being deleted, the delete request will fail.

When editing a profile, you are presented with a panel showing all attributes for database, program, transaction, and route code definitions. With each attribute, you can specify an updated default value used in the profile and whether the profile allows users to change the value of the attribute. A sample profile screen is shown as follows:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Default Value</th>
<th>Allow Updates</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATABASE</td>
<td></td>
<td></td>
<td>More: +</td>
</tr>
<tr>
<td>RESIDENT</td>
<td>NO</td>
<td>Y</td>
<td>DMB is retained in storage (NO or YES)</td>
</tr>
<tr>
<td>Access</td>
<td>EX</td>
<td>Y</td>
<td>Subsystem access intent (RO, RD, UP, or EX)</td>
</tr>
<tr>
<td>PROGRAM</td>
<td></td>
<td></td>
<td>Options</td>
</tr>
<tr>
<td>RESIDENT</td>
<td>NO</td>
<td>Y</td>
<td>PSB to remain resident in storage (YES or NO)</td>
</tr>
<tr>
<td>DOPT</td>
<td>NO</td>
<td>Y</td>
<td>Reload PSB for each execution (YES or NO)</td>
</tr>
<tr>
<td>GPSB</td>
<td>NO</td>
<td>Y</td>
<td>Generic PSB (YES or NO)</td>
</tr>
<tr>
<td>FPATH</td>
<td>NO</td>
<td>Y</td>
<td>Fast Path Exclusive Program (YES or NO)</td>
</tr>
<tr>
<td>LANG</td>
<td>NO</td>
<td>Y</td>
<td>GPSB Language (ASSEMBLY, COBOL, PASCAL, PL/I, JAVA)</td>
</tr>
<tr>
<td>PGMTYPE</td>
<td>TP</td>
<td>Y</td>
<td>Program Type (BATCH or TP)</td>
</tr>
<tr>
<td>SCHEDTYP</td>
<td>SERIAL</td>
<td>Y</td>
<td>Schedule Type (SERIAL or PARALLEL)</td>
</tr>
<tr>
<td>TRANSACT</td>
<td></td>
<td></td>
<td>Options</td>
</tr>
<tr>
<td>DCLWA</td>
<td>YES</td>
<td>Y</td>
<td>DC Log WriteAhead (YES or NO)</td>
</tr>
<tr>
<td>Edit Case</td>
<td>UC</td>
<td>Y</td>
<td>Upper Case (UC) or Upper/Lower Case (ULC)</td>
</tr>
<tr>
<td>EDIT Name</td>
<td>NO</td>
<td>Y</td>
<td>Transaction Edit Routine Module Name</td>
</tr>
<tr>
<td>FPATH</td>
<td>NO</td>
<td>Y</td>
<td>Fast Path Specification (NO, YES or I2-30720)</td>
</tr>
<tr>
<td>INQUIRY</td>
<td>NO</td>
<td>Y</td>
<td>Inquiry Mode (NO or YES)</td>
</tr>
<tr>
<td>RECOVER</td>
<td>NO</td>
<td>Y</td>
<td>Recoverable Transaction (RECOVER or NORECOV)</td>
</tr>
<tr>
<td>MAXRGN</td>
<td>0</td>
<td>Y</td>
<td>Maximum regions (0-2555)</td>
</tr>
<tr>
<td>MODE</td>
<td>MULT</td>
<td>Y</td>
<td>Mode (SNGL or MULT)</td>
</tr>
<tr>
<td>MSGTYPE</td>
<td>MULTSEG</td>
<td>Y</td>
<td>Segments (SNGLSEG or MULTSEG)</td>
</tr>
<tr>
<td>RESPONSE</td>
<td>NO</td>
<td>Y</td>
<td>Response mode (NO or YES)</td>
</tr>
<tr>
<td>CLASS</td>
<td>1</td>
<td>Y</td>
<td>Transaction Class (1-999)</td>
</tr>
<tr>
<td>PARLIM</td>
<td>NONE</td>
<td>Y</td>
<td>Parallel Limit Count (NONE or 0-32767)</td>
</tr>
<tr>
<td>COUNT</td>
<td>65535</td>
<td>Y</td>
<td>PROCLIM Count (0-65535)</td>
</tr>
<tr>
<td>SECONDS</td>
<td>65535.00</td>
<td>Y</td>
<td>PROCLIM Time (.01-65535)</td>
</tr>
<tr>
<td>PRIORITY1</td>
<td>1</td>
<td>Y</td>
<td>Normal Priority (0-14)</td>
</tr>
<tr>
<td>PRIORITY2</td>
<td>1</td>
<td>Y</td>
<td>Limit Priority (0-14)</td>
</tr>
<tr>
<td>PRIORITY3</td>
<td>65535</td>
<td>Y</td>
<td>Limit Count (1-65535)</td>
</tr>
<tr>
<td>ROUTING</td>
<td>NO</td>
<td>Y</td>
<td>Routing (NO or YES)</td>
</tr>
<tr>
<td>SCHD</td>
<td>1</td>
<td>Y</td>
<td>Scheduling Option (1-4)</td>
</tr>
<tr>
<td>SEGN0</td>
<td>0</td>
<td>Y</td>
<td>Number of Output Segments (0-65535)</td>
</tr>
<tr>
<td>SEGSIZE</td>
<td>0</td>
<td>Y</td>
<td>Size of Output Segments (0-65535)</td>
</tr>
<tr>
<td>SERIAL</td>
<td>NO</td>
<td>Y</td>
<td>Serial Processing of Input Messages (NO or YES)</td>
</tr>
<tr>
<td>SPA SIZE</td>
<td>Y</td>
<td></td>
<td>SPA Size (blank or 16-32767)</td>
</tr>
<tr>
<td>SPA TYPE</td>
<td>Y</td>
<td></td>
<td>SPA Truncation Option (blank, RTRUNC, STRUNC)</td>
</tr>
<tr>
<td>RMT SYSID</td>
<td>Y</td>
<td></td>
<td>Remote SYSID (blank or 1-2036)</td>
</tr>
<tr>
<td>LCL SYSID</td>
<td>Y</td>
<td></td>
<td>Local SYSID (blank or 1-2036)</td>
</tr>
<tr>
<td>WFI</td>
<td>NO</td>
<td>Y</td>
<td>Wait for Input (NO or YES)</td>
</tr>
<tr>
<td>AOI</td>
<td>NO</td>
<td>Y</td>
<td>Automated Operator (NO, YES, TRAN, CMD)</td>
</tr>
<tr>
<td>RCODE</td>
<td></td>
<td></td>
<td>Options</td>
</tr>
<tr>
<td>Inquiry</td>
<td>NO</td>
<td>Y</td>
<td>Inquiry Mode (NO or YES)</td>
</tr>
</tbody>
</table>

**Figure 19. Profile authorizations**

When you add a new profile, IMS HP Sysgen Tools populates the profile with the IMS default values for each of the attribute fields. You can accept the IMS default values or update selected values with new defaults. Following is an explanation of other actions you can perform on this panel:
Description
This field appears near the top of the panel. You can provide comments to be displayed next to each profile parameter.

Default Value
The default value for each resource attribute is shown in this column. The value can be updated to any valid value, which will then be used when a new resource is added. If the Allow Updates flag is set to N for an attribute, the value in the Default Value column will be enforced for any added or updated resource.

Allow Updates
The Allow Updates column defines whether a user is permitted to change the default value of each attribute. When specified as Y, the user is permitted to change the value associated with the attribute. When specified as N, the user cannot update the value of the attribute.

If a user is prohibited from updating an attribute value, any resource update lists created by this user will force the new specified default value to be used. This applies even to updating an existing resource. For example, suppose that a profile is defined which has a default SPA SIZE of blank and users associated with the profile are not permitted to update the value. If the user creates a resource update list to update an existing transaction that has SPA SIZE 16, IMS HP Sysgen Tools will force the value of blank to be included in the resource update list. Thus, while the user may have intended to only change the MODE from MULT to SNGL, he or she will also be forced to change the SPA SIZE because the profile forces the SPA SIZE to blank.

Working with user definitions
In order to make a profile effective for a given user ID, a user entry must be created. User entries define which profile name will be used for that user name.

About this task
You can define users by selecting option 4 of the Setup menu. You must be authorized by your security subsystem to have READ access to profile IOH.SETUP in order to view or update user definitions.

The following figure shows a sample list of users presented when selecting option 4 of the Setup menu.

<table>
<thead>
<tr>
<th>Command</th>
<th>Primary Commands:</th>
<th>Line Commands:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Edit/Create a User Profile</td>
<td>Delete User</td>
</tr>
<tr>
<td></td>
<td>Delete a Profile</td>
<td>M Move a user</td>
</tr>
<tr>
<td>User</td>
<td></td>
<td>S Edit a User</td>
</tr>
<tr>
<td>DALE</td>
<td>DALE</td>
<td>A Move After</td>
</tr>
<tr>
<td>DBA####</td>
<td>DALE</td>
<td>I Insert new User</td>
</tr>
<tr>
<td>TIM</td>
<td>DBA2</td>
<td>B Move Before</td>
</tr>
<tr>
<td>IMS#####</td>
<td>SYSPROG1</td>
<td></td>
</tr>
<tr>
<td>SYS1####</td>
<td>SYSPROG1</td>
<td></td>
</tr>
<tr>
<td>#######</td>
<td>PROG1</td>
<td></td>
</tr>
</tbody>
</table>

Figure 20. List of user definitions
User names correspond with TSO user IDs. Generic user entries are permitted so that the number of user entries can be reduced. You can use the pound sign character (#) as a wild card character for exactly one character of a TSO user ID. In this example, user entry DALE will match only a TSO user ID named DALE. The user entry named DBA##### will match any TSO user ID that begins with DBA. The last entry in the example, an entry with all wild card characters, will match any TSO user ID.

The order of user entries in the list is critical because the list is searched from top to bottom for a match for a TSO user ID. For a user ID named DBADALE, entry DBADALE will be found before DBA#####. Therefore, TSO user ID DBADALE will use profile DALE instead of profile DBA1 because user entry DBADALE comes before user entry DBA##### in the list.

You can change the order of user entries in the list by using the line commands M (move) and B (before) or A (after). Use these commands to move a user entry from one place in the list to a new location.

If you choose to delete a user entry, you will be prompted with a confirmation panel to verify that you want to delete the user entry.

To add a new user entry, you can use the I line command to insert a new user entry, or the S username primary command to create a new user entry named username. To update an existing user entry, select the entry with a S line command. When editing or creating a user entry, IMS HP Sysgen Tools displays the User Profile panel, as shown in the following figure:

![User Profile Panel](image)

*Figure 21. Edit user entry panel*

When editing a user entry, you can update the profile field to specify the name of an existing profile, as defined in IMS HP Sysgen Tools Setup option 3. IMS HP Sysgen Tools will validate the profile name you enter and will only allow valid names.
Enabling the use of IMS ACB member level global online change

You can use the IMS ACB member level global online change method to reload an updated IMS ACBLIB member, including a database definition (DBD) for a data entry database (DEDB), and automatically reload any PSB that is affected by a change to a DBD. Enabling the use of IMS ACB member level global online change requires changing the IMS environment.

To use IMS ACB member level global online change, HP Sysgen must be authorized to use the IMS ACB member level global online change commands, such as the IMS type-2 INITIATE OLC PHASE(PREPARE)TYPE(ACBMBR) command.

To enable IMS HP Sysgen Tools to use global online change for member level ACB reloads, the following IMS features must be available.

• The IMS SCI address space must be available on the system where IMS runs.
• An IMS OM address space must be available in the sysplex to process IMS commands for any target IMS systems.
• IMS Security must allow the HP Sysgen authorized user ID to issue the IMS type-2 INITIATE command.
• IMS global online change must be enabled. Enablement includes replacing the MODSTAT data set with the OLCSTAT data set. You can create a global online change environment with only one defined IMS system, even though the environment is normally designed to define all the IMS systems in an IMSplex.
• An IMS staging ACBLIB must be created (or designated).
• The staging ACBLIB data set must either be added to the IMS control region JCL, or an IMS dynamic allocation member must be defined to allow IMS to dynamically allocate the staging ACBLIB when it is needed.
• Changes to IMS PROCLIB members are required to enable global online change.

For more information about enabling IMS global online change, see the IMS System Administration.
Enabling the IMS Managed ACBs Activate method

Use the IMS Managed ACBs Activate method to activate a pending ACB member in the IMS directory staging data set. To enable the IMS Managed ACBs Activate method, you must change the IMS environment.

To use the IMS Managed ACBs Activate method, IMS HP Sysgen Tools must be authorized to use the IMS type-2 `IMPORT DEFN SOURCE(CATALOG)` command.

To enable IMS HP Sysgen Tools to use the IMS Managed ACBs Activate method, the following IMS features must be available:

- The IMS SCI address space must be available on the system where IMS runs.
- An IMS OM address space must be available in the sysplex to process IMS commands for any target IMS systems.
- IMS Security must allow the HP Sysgen authorized user ID to issue the IMS type-2 `IMPORT` command.
- The IMS management of ACBs must be enabled.
- Changes to IMS PROCLIB members are required to enable the IMS management of ACBs. For more information about enabling the IMS management of ACBs, see *IMS System Administration*. 
Chapter 4. Using the ISPF interface

The ISPF user interface allows you to use certain IMS HP Sysgen Tools features.

Topics:
- “ISPF menu options” on page 70
- “Using the ISPF View option to view resources” on page 72
- “Validating IMS stage 1 sysgen source” on page 82
- “Performing a Fastgen MODBLKS gen” on page 83
- “Reversing an IMS sysgen or security gen” on page 84
- “Reviewing the HP Sysgen history log” on page 90
- “Issuing IMS commands” on page 100
- “Dynamic Resource Definition (DRD) status” on page 101
- “Storage functions” on page 102
- “Generating JCL for batch utilities” on page 110
ISPF menu options

The ISPF interface provides IMS HP Sysgen Tools functionality.

Here is the IMS HP Sysgen Tools Primary Options menu, which is presented through the ISPF interface.

```
<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 Setup</td>
<td>IMS Configuration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 View</td>
<td>Display IMS Resource Definitions</td>
<td>06/11/03</td>
<td>21:46</td>
</tr>
<tr>
<td>2 Edit</td>
<td>Create an IMS Resource Update List</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Verify</td>
<td>Verify an IMS Resource Update List</td>
<td>z/OS</td>
<td>01.07.00</td>
</tr>
<tr>
<td>4 Install</td>
<td>Implement an IMS Resource Update List</td>
<td>Sysname</td>
<td>ADCD</td>
</tr>
<tr>
<td>5 Validate</td>
<td>Syntax Check Stage 1 Sysgen Source</td>
<td>JESNode</td>
<td>N1</td>
</tr>
<tr>
<td>6 Fastgen</td>
<td>Perform a Fast IMS Sysgen</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Reverse</td>
<td>Create Stage 1 Source from MODBLKS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 History</td>
<td>Review Historical Log Information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 Command</td>
<td>Issue an IMS Command</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 RDR</td>
<td>Dynamic Resource Definition Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Storage</td>
<td>z/OS Virtual Storage Utilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 Utilities</td>
<td>Generate JCL for HP Sysgen Batch Jobs</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

IOHPDS Data Set Name ====> IMS.IOH.IOHPDS
(Fully qualified DSNAME without quotes)
```

Figure 22. HP Sysgen Primary Options menu

The IOHPDS data set name must be entered on the IMS HP Sysgen Tools Primary Options menu before you can use option 2, 3, or 4.

**View**  
By using the View option, you can view IMS resource definition attributes. You can display either the attributes from the last IMS sysgen (or resource update list installation) by viewing the MODBLKS data set, or you can view the resources and associated attributes from a running IMS control region.

**Validate**  
By using the Validate option, you can validate sysgen source. This option reads the IMS sysgen and security gen source code and provide a list of any errors or warnings.

For more information, see "Validating IMS stage 1 sysgen source" on page 82.

**Fastgen**  
By using the Fastgen option, you can perform an IMS HP Sysgen Tools fastgen and updates MODBLKS and MATRIZ data sets with these definitions. This option reads the IMS sysgen and security gen source code and provides a list of any errors or warnings.

For more information, see "Performing a Fastgen MODBLKS gen" on page 83.

**Reverse**  
By using the Reverse option, you can reverse IMS sysgen and security gens. This option reads the MODBLKS or MATRIX data sets and creates source code that reflects the definitions present in these data sets.

For more information, see "Reversing an IMS sysgen or security gen" on page 84.
History
By using the History option, you can review changes that have been implemented using IMS HP Sysgen Tools. You can view information about changes, reverse updated definitions into IMS sysgen source, or undo installed updates.

For more information, see “Reviewing the HP Sysgen history log” on page 90.

Command
By using the Command option, you can issue IMS commands and view the response.

For more information, see “Issuing IMS commands” on page 100.

DRD
By using the DRD option, you can display the DRD status and the IMSRSC repository status for an IMS control region. If DRD is enabled and the IMSRSC repository is disabled, the data set names of all system RDDSs are shown. If DRD is enabled and the IMSRSC repository is also enabled, the data set name of the IMSRSC repository is shown.

Storage
By using the Storage option, you can display IMS control region storage and control blocks.

For more information, see “Storage functions” on page 102.

Utilities
By using the Utilities option, you can generate JCL to run IMS HP Sysgen Tools batch utilities.

For more information, see “Generating JCL for batch utilities” on page 110.
Using the ISPF View option to view resources

You can view existing IMS resource definitions by using IMS HP Sysgen Tools ISPF option 1, the View option.

Such definitions include database, program, transaction, and route codes. You can review the resources as they were defined in the last IMS sysgen (and any changes installed via resource update lists), or you can review the definitions that are currently being used by the online IMS system. If you have Fast Path DEDBs defined in your IMS system, you can also view the DEDB randomizer names that are in use by an IMS system which is currently running.

Note: The online system might include changes in resource definitions that were requested by using IMS commands (such as /ASSIGN or /CHANGE).

Topics:
- “Using the View Menu”
- “Accessing the Loading panel” on page 74
- “Using the ISPF line commands” on page 74
- “Viewing resource and attribute values” on page 75
- “Viewing a DEDB randomizer list” on page 81

Using the View Menu

Use the View panel of the ISPF interface to display resources.

Using the initial View panel

When you select the View option, the View Menu is displayed.

```
VIEW  IMS HP Sysgen Tools - View Menu
Command ==> ________________________________

Option ===> ________________________________
  1 INCORE View resources currently being used in the IMS control region
  2 DASD View resources defined in the current MODBLKS/RDDS/Repository
  3 MODBLKS View resources defined in a user specified MODBLKS Data Set
  4 RDDS View resources defined in a user specified RDDS Data Set

Resource ===> ________________________________
  1 DATABASE View IMS database definitions
  2 PROGRAM View IMS application program definitions
  3 TRAN View IMS transaction definitions
  4 RTCODE View IMS fast path route code definitions
  5 Randomizer View DEDB database randomizer names and associated DBDs

IMSID ===> ___
```

Figure 23. Initial View panel

The IMSID field is required. It specifies which IMS system’s resources will be displayed. The Option field allows you to select which definitions are to be shown. You can select the following options:

**INCORE**

This option shows the resource definitions in IMS control blocks that are being used when you press Enter. IMS must be running to use this option. The resource status will include changes that were made by using
IMS commands such as `/ASSIGN` that might not be in the MODBLKS, RDDS, or IMSRSC repository data sets.

**DASD**

This option shows the resource definitions that are stored in the current MODBLKS, RDDS, or IMSRSC repository data sets, depending on whether DRD is disabled or enabled and whether the IMSRSC repository is disabled or enabled. The values that are shown are used by IMS if IMS is cold started. Changes that are installed through resource update lists are included in the resources that are displayed when you use this option.

**MODBLKS**

This option allows you to specify IMS system data sets (MODBLKS and RESLIB). You can also specify the nucleus suffix that is in those data sets that will be used to retrieve resource definitions. The data sets do not have to be related to any IMS system, and they can be in use or not. For more information, see “Using the MODBLKS option.”

**RDDS**

This option shows the names of the system RDDSs that are used by the selected IMS system. The time stamp and the statuses that are associated with each RDDS are shown. If you select any of the RDDSs, the resource definitions that are present in the selected RDDS are shown. You can also enter the data set name of any valid RDDS if you want to supply your own data set name.

You can select the type of resource that you want to see (database, program, transaction, route code, or DEDB randomizer) by entering the appropriate option in the Resource field.

**Note:** To view DEDB randomizer names, you must specify the INCORE option, and IMS must be active. For more information, see “Using the RDDS option” on page 74.

**Using the MODBLKS option**

If you select the MODBLKS option, IMS HP Sysgen Tools prompts you to enter data set names and the IMS nucleus suffix that are used to retrieve resource definitions. The following figure shows the fields for entering the specifications for the MODBLKS option.

```
VIEW IMS HP Sysgen Tools - View User Specified MODBLKS Data Set
Command ==> ____________________________________________________________

To view the resources defined in a MODBLKS data set, you need to supply a consistent set of libraries (MODBLKS and RESLIB), along with the IMS nucleus suffix.

IMS Suffix ==> 
MODBLKS DSN ==> 
RESLIB DSN ==> ____________________________

(Fully qualified DSNAMES without quotes)
```

Figure 24. View MODBLKS specification panel.

All three fields on the panel are required. The IMS suffix is the SUFFIX= value that is specified on the IMSGEN macro during the IMS sysgen process. The IMS release that is present in the RESLIB must match the IMS release that is used to create the IMS resource definitions in the MODBLKS data set.
Specify values in these fields and press Enter to display the requested resource definitions.

**Using the RDDS option**

If you select the RDDS option, IMS HP Sysgen Tools shows the system RDDSs that are used for the selected IMS system. An example is shown in the following figure.

**Figure 25. View RDDS specification panel**

On the View RDDS specification panel, you can specify an RDDS name of your choosing, or you can select one of the system RDDSs that are shown in the table. Select the RDDS by using the $ command next to the one that you want to use.

Specify or select an RDDS and press Enter to display the requested resource definitions.

**Accessing the Loading panel**

If you select the DASD or MODBLKS options, a status panel, as shown in the following figure, is displayed while the resource definitions are loaded from the MODBLKS data set. After the definitions are loaded, press Enter to continue to the display panel. If you selected the INCORE option, the status panel is bypassed, and the resource definitions are displayed as soon as they are prepared.

**Figure 26. Resource definitions loaded from MODBLKS data set**

**Using the ISPF line commands**

The View panels of this product use the following ISPF line commands: P, S, and T.
Depending on the resource type being displayed, the line commands cause specific panels to display. A summary is provided as follows:

P

- If you are viewing a transaction list, a panel is displayed showing the IMS sysgen macro that created the definition of the program associated with the selected transaction, as well as any other transactions and route codes associated with that program. Figure 36 on page 80 is an example of such a panel.
- If you are viewing a route code list, a panel is displayed showing the IMS sysgen definition of the program associated with the selected route code, as well as any other transactions and route codes associated with that program. Figure 39 on page 81 is an example of such a panel.

S

- If you are viewing a database list, a panel is displayed showing the IMS sysgen macro that created the definition, as well as descriptions of the columns displayed in the database list panel. Figure 28 on page 76 is an example of such a panel.
- If you are viewing a program list, a panel is displayed showing the IMS sysgen macro that created the definition, as well as descriptions of the columns displayed in the program list panel. See Figure 29 on page 77 and Figure 30 on page 77 for examples of a program list and subsequent definition panel.
- If you are viewing a transaction list, a panel is displayed showing the IMS sysgen macro that created the transaction definition. See Figure 32 on page 78, Figure 33 on page 79, Figure 34 on page 79, and Figure 35 on page 80 for examples of a multipart transaction list and subsequent definition panel.
- If you are viewing a route code, a panel is displayed showing the IMS sysgen macro that created the resource definition, as well as descriptions of the columns displayed in the route code list panel. Figure 38 on page 81 is an example of such a panel.

T

- If you are viewing a program list, and you select a program using the T line command, a panel is displayed showing the IMS sysgen macro that created the definition for the program and all associated transaction codes and route codes. Figure 31 on page 77 shows an example of such a panel.

Viewing resource and attribute values

After the resource definitions are prepared for display, an ISPF table displays resources and attribute values. You can scroll lists using the UP and DOWN ISPF commands. The LOCATE command allows you to skip to a specific value in the table. The table can also be sorted on any displayed column.

For example, consider the following scenario:

When displaying database definitions, the SORT ACCESS command could be used to sort the table by the value of the ACCESS= keyword specified on the DATABASE sysgen macro. The LOCATE command could then be used to skip to a particular ACCESS value; for example, the L RO command would skip to the first database defined with the ACCESS attributed defined as RO. Command L R would locate any database ACCESS value that begins with R, which would probably be an ACCESS of RD.
Viewing a database list and attribute value

A database list shows all defined databases and their attributes.

The following figure shows an example of a database list.

```
Figure 27. Database list created from IMS sysgen macros
```

The following figure shows the macro that was used to create the database definition.

```
Figure 28. Macro used to create a database definition
```

Viewing a program list and attribute values

A program list shows all defined programs and their attributes.
Figure 29. Programs created from IMS sysgen macros

Figure 30. Macro used to create a program definition

Figure 31. Macro used to create a definition for program and associated codes and route codes
Viewing a transaction list and attribute values

A transaction list shows all defined transactions and their attributes.

Because transaction definitions have a large number of attributes, the attributes for each transaction are split across three panels. Use the RIGHT and LEFT commands (typically PF10 and PF11) to scroll to the second transaction list panel (Figure 33 on page 79) and the third transaction list panel (Figure 34 on page 79).

Use the S line command to display the IMS sysgen source macro that was used to create the transaction, as well as the list of attributes and values. Figure 35 on page 80 shows the results of using the S line command.

Use the P line command to display the IMS sysgen source for the program that is associated with the selected transaction, as well as the sysgen source for all of the transactions and route codes that are associated with that program. Figure 36 on page 80 shows the results of using the P line command.

![Figure 32. Transaction list created from IMS sysgen macros (part 1)](image-url)
Figure 33. Transaction list created from IMS sysgen macros (part 2)

Figure 34. Transaction list created from IMS sysgen macros (part 3)
Viewing a route code list

A route code list shows all defined routing codes and their attributes.

The following figure shows an example.
Viewing a DEDB randomizer list

A DEDB randomizer list shows the names of all active DEDB randomizers and the names of all DEDB databases using the randomizer.

The following figure shows an example of a DEDB randomizer list. Note that there are no line commands available in a randomizer list.

---

**Figure 37. Route code list**

---

**Figure 38. Route code definition**

---

**Figure 39. Macro used to create a program definition associated with a route code**

---

**Viewing a DEDB randomizer list**

A DEDB randomizer list shows the names of all active DEDB randomizers and the names of all DEDB databases using the randomizer.

The following figure shows an example of a DEDB randomizer list. Note that there are no line commands available in a randomizer list.

---

**Figure 40. DEDB randomizer list example**
Validating IMS stage 1 sysgen source

Use option 5 of the Primary Options menu (see Figure 22 on page 70) to perform syntax validation of IMS sysgen macros. You can validate either IMS stage 1 sysgen source, or both IMS sysgen source and the security source.

To perform a gen source validation, an existing data set name must be specified which will contain IMS HP Sysgen Tools messages and the gen source listing. The data set must meet the following requirements:

- Must be a sequential data set (or a PDS with a member name specified)
- Allocation with DCB attributes of RECFM=FBA and LRECL=133
- Data set name must be entered on the panel shown in the following figure:

```
VALIDATE IMS HP Sysgen Tools - Validate IMS Gen Source
Command ===> __________________________________________________________
Option ===> ________________________
1 SYSGEN  IMS Sysgen
2 SECURITY Both IMS Sysgen and IMS Security Gen
IMSID ===> ______
Output DSN ===> SYSGEN.OUTLIST
```

Figure 41. Initial panel for validating IMS gen source

In addition to entering the output DSN, you must select option 1 or 2 (for stage 1 or stage 1 and security gen validation), and enter the IMSID for which the gen source is to be validated.

The IMS sysgen source data set name information is obtained from the IMS Configuration information for the IMSID, which is set by selecting option 0 from the Primary Options menu.

The Fastgen process reads the gen source, builds interim control block in storage, and, if requested, reads security gen source and creates interim security control blocks. While the definitions are not written to any MODBLKS or MATRIX data sets, the process ensures that IMS sysgen source is valid, and that any security gen source has correct syntax and is consistent with the IMS sysgen source.

When the validation process completes, an ISPF browser panel provides the opportunity to review the Fastgen reports. The output of the validation process is the same as the output of the Fastgen batch process. It will contain source statement listings for all source that was read and any warning or error messages associated with the input. The reports of resource definitions are also included in the validation report.
Performing a Fastgen MODBLKS gen

Select option 6 of the IMS HP Sysgen Tools Primary Options menu, Figure 22 on page 70 to perform a MODBLKS IMS sysgen under ISPF. Depending on the size of the gen source, it might be easier to run the Fastgen process in batch (for more information, see Chapter 11, “Using the Fast Sysgen utility,” on page 183).

To perform a Fastgen, an existing data set name must be specified which will contain IMS HP Sysgen Tools messages and the gen source listing. The data set must meet the following requirements:

- Must be a sequential data set (or a PDS with a member name specified)
- Allocation with DCB attributes of RECFM=FBA and LRECL=133
- Data set name must be entered on the panel shown in the following figure

In addition to entering the output DSN, you must select option 1 or 2 (for stage 1 or stage 1 and security gen), and enter the IMSID for which the gen is to be performed. In addition, you must select one or more target libraries which will be updated by the Fastgen process. The libraries selected refer to the MODBLKS and, if option 2 is selected, the MATRIX data set. You can choose to update either the staging libraries (MATRIX and MODBLKS data sets), the inactive libraries (the A or B versions of the MATRIX/MODBLKS libraries, whichever is inactive as determined by the MODSTAT or OLCSTAT data set), or both sets of libraries.

The IMS sysgen source data set name information is obtained from the IMS Configuration information for the IMSID, which is set by selecting option 0 from the Primary Options menu.

When the Fastgen process completes, an ISPF browse panel provides the opportunity to review the Fastgen reports. It will contain source statement listings for all source that was read and any warning or error messages associated with the input. The reports of resource definitions are also included in the validation report. At the end of stage 1 and at the end of the security gen reports, Fastgen link edit reports are generated showing which libraries and members were affected by the sysgen process.
Reversing an IMS sysgen or security gen

Use the reverse IMS sysgen and security gen processes to re-create IMS stage 1 sysgen or security gen source.

The reverse security gen source uses the MATRIX, MODBLKS, or RESLIB data sets to re-create IMS security gen source. The reverse sysgen process can use the MODBLKS or RESLIB data sets, the RDDS, the IMSRSC repository, or the IMS control region control blocks that are in memory to re-create the IMS sysgen source.

The reverse sysgen process re-creates only the application definitions DATABASE, APPLCTN, TRANSACT, and RTCODE macros. IMS control macros and terminal/MSC related macros are not generated.

The reverse security gen process re-creates all security gen source although it might not be in the same sequence as the security gen source that created the MATRIX data set.

Select option 7 of the IMS HP Sysgen Tools Primary Options menu, Figure 22 on page 70 to access the reverse functions. The following panel is displayed.

**Reverse sysgen**

Use the reverse IMS sysgen process to re-create IMS stage 1 sysgen source. The reverse sysgen process uses the MODBLKS or RESLIB data set, the RDDS, the IMSRSC repository, or the IMS control region control blocks that are in memory to re-create the IMS sysgen source.

Selecting a reverse sysgen displays the panel in Figure 44 on page 85 for specifying reverse sysgen options.

The Output DSN field is required and must specify the data set name of an existing sequential data set (or member of a PDS) where the generated IMS sysgen source will be written. DCB attributes are required to be RECFM=FB and LRECL=80.

**Attention:** Do not specify your existing sysgen source DSN. If you do, the specified data set will be replaced with IMS sysgen source code that was generated from the MODBLKS data set.
Choose the source that you want to use for the reverse sysgen with the following options:

**INCORE**

This option uses the IMS control region storage to obtain information from the control blocks of the running IMS system. The running control blocks might be affected by commands such as `/ASSIGN` or `/STA DB` with the `ACCESS=` keyword. These commands will change your generated IMS sysgen source.

**DASD**

This option uses the active MODBLKS, RDDS, or IMSRSC repository data set as the source of the IMS resource definitions. This option creates source that matches IMS definitions as if IMS was cold started. If you use IMS sysgen, this option re-creates the source from your last IMS sysgen. This source is updated to include any IMS resource update lists that are installed.

**MODBLKS**

This option allows you to specify the data set names of MODBLKS and RESLIB data sets and to specify an IMS nucleus suffix. IMS HP Sysgen Tools uses the specified libraries as the source for the resource definitions.

**RDDS**

The RDDS option allows you to specify an RDDS name or to select one of the system RDDSs that are defined for the target IMS system. The data set is used as the definition source from which IMS sysgen source is generated.

For the INCORE and DASD options, you only need to specify the IMSID of the IMS system for which gen source should be re-created. The MODBLKS and RDDS options prompt you for the data set names that are used for IMS system definitions.

You can also choose to re-create only source for DATABASE macros, or only the source for APPLCTN, TRANSACT, and RTCODE macros. You can also choose both sets of macro definitions to re-create all of the gen source in a single file.

<table>
<thead>
<tr>
<th>REVERSE</th>
<th>IMS HP Sysgen Tools - Reverse Sysgen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Command ==&gt;</td>
<td>________________________________</td>
</tr>
<tr>
<td>Option ==&gt;</td>
<td>_</td>
</tr>
<tr>
<td>1 INCORE Generate IMS Sysgen source from active incore control blocks</td>
<td></td>
</tr>
<tr>
<td>2 DASD Generate IMS Sysgen source from the current MODBLKS/RDDS/Repository</td>
<td></td>
</tr>
<tr>
<td>3 MODBLKS Generate IMS Sysgen source from user specified MODBLKS</td>
<td></td>
</tr>
<tr>
<td>4 RDDS Generate IMS Sysgen source from user specified RDDS</td>
<td></td>
</tr>
<tr>
<td>IMSID ==&gt;</td>
<td>____</td>
</tr>
<tr>
<td>Select resource type(s) to include in Reverse:</td>
<td></td>
</tr>
<tr>
<td>_ Database</td>
<td></td>
</tr>
<tr>
<td>_ Program / Transaction / Route Code</td>
<td></td>
</tr>
<tr>
<td>Output Data Set for Reverse Sysgen Process:</td>
<td></td>
</tr>
<tr>
<td>Output DSN ==&gt;</td>
<td>___________</td>
</tr>
</tbody>
</table>

*Figure 44. Initial panel for performing reverse sysgen*
To specify MODBLKS information, enter the IMS nucleus suffix, which is specified in the SUF= parameter of the DFSPBxxx member of PROCLIB or in the SUFFIX= keyword of the IMSGEN macro in the IMS sysgen source. In addition, specify the IMS MODBLKS data set name and the IMS RESLIB data set name. The MODBLKS and RESLIB must have consistent sysgen information.

Specify the required information and press Enter. If you chose the MODBLKS option on the Reverse Sysgen panel, the MODBLKS data set panel is displayed, as shown in Figure 45. If you chose the RDDS option on the Reverse Sysgen panel, the user RDDS panel is displayed, as shown in Figure 47.

When IMS HP Sysgen Tools reads a MODBLKS data set to retrieve IMS system definitions, this panel in Figure 46 is displayed while the MODBLKS modules are loaded and placed into tables. This panel shows the number of resources that are defined in the MODBLKS data set and the length of time that was spent loading the modules and tables.

The IMS IMS1 RDDS data set names are listed below. You can select one of listed data sets or enter a data set name of your choosing here.

Figure 46. Loading MODBLKS definitions

Figure 47. User RDDS panel
In the User RDDS panel, you can enter an RDDS name in the **RDDS DSN** field, or you can select one of the system RDDS names that is used by the IMS system. Press Enter to display the reverse sysgen source panel, such as the one that is shown in Figure 48.

After the sysgen source is re-created, an ISPF browse session shows the generated sysgen macros. An example of reverse MODBLKS is shown in Figure 48. Note that a comment is inserted at the beginning of the generated source to identify the date and requesting user ID of the reverse sysgen.

The data that is displayed in the browse session has already been written to the Output DSN as specified on the request panel. The output data set can be edited or used as input to an IMS sysgen or an HP Sysgen Fastgen process.

---

**Figure 48. Generated IMS sysgen macro statements**

This output has been written to the specified gen source data set and can be edited at any time. Press the End key (usually, **PF3**) to return to the reverse sysgen menu.

### Reverse security gen

The reverse security gen process re-creates all security gen source although it might not be in the same sequence as the security gen source that created the MATRIX data set.

If you select the reverse security gen option, the panel in the following figure is displayed:
The **Output DSN** field is required and must specify the data set name of an existing sequential data set (or member of a PDS) that the generated IMS sysgen source will be written to. DCB attributes are required to be RECFM=FB and LRECL=80.

**Attention:** Do not specify your existing sysgen source DSN. If you do, the specified data set will be replaced with IMS security gen source code that was generated from the MATRIX data set.

Choose the source you want to use for the reverse security gen from the following two options:

**MATRIX**

This option uses the active MATRIX data set as the source of the IMS security definitions. Use this option to re-create your last IMS security gens source, updated to include any changes from resource update lists that were installed. You must specify only the IMSID of the IMS system for which security gen source should be re-created.

**USER**

This option allows you to specify the data set names of the MATRIX, MODBLKS, and RESLIB data sets, and specify an IMS nucleus suffix. IMS HP Sysgen Tools uses the specified libraries as the source for the security definitions. You must supply the names of the MATRIX, MODBLKS, and RESLIB data sets, and the IMS nucleus suffix from which security gen source will be re-created.

After the security gen source is re-created, an ISPF browse session shows the generated security gen macros. An example of reverse MATRIX is shown in the following figure. Note that a comment is inserted at the beginning of the generated source to identify the date and requesting user ID of the reverse security gen.
Figure 50. Generated IMS security gen source statements

The data displayed in the browse session has already been written to the Output DSN as specified on the request panel. You can edit the output data set or you can use it as input to an IMS security gen or an HP Sysgen Fastgen process.
Reviewing the HP Sysgen history log

The IMS HP Sysgen Tools log contains an audit trail of all changes to the environment introduced by the ISPF interface. The log shows all commands entered using the ISPF interface (except /DISPLAY commands), shows storage zaps performed, changes to IMS resource or security definitions, and ACBLIB reloads. The log contains the time of each activity, as well as the resource update list name (where appropriate), and the user ID that performed the change or installed the resource update list.

Option 8 from the IMS HP Sysgen Tools Primary Options menu, Figure 22 on page 70, allows you to review and act upon entries in the log.

<table>
<thead>
<tr>
<th>LOG</th>
<th>IMS HP Sysgen Tools - HP Sysgen Log</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option ====&gt;</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td>1 View</td>
<td>View HP Sysgen Update Log</td>
</tr>
<tr>
<td>2 Reverse</td>
<td>Create IMS Macro Definitions from the HP Sysgen Log</td>
</tr>
<tr>
<td>3 Maintain</td>
<td>Remove Old LOG Entries</td>
</tr>
<tr>
<td>4 Undo</td>
<td>Undo One or More Resource Updates</td>
</tr>
</tbody>
</table>

Figure 51. HP Sysgen history log menu

**View**
Use this option to review log entries that document each individual resource change and IMS command in the log. Use the Gen Source feature to update the log to show which resource updates have been included in the IMS sysgen source.

**Reverse**
Use this option to reverse log entries into IMS sysgen source and to generate macros and comments that can be used to update IMS sysgen source to make it consistent with the current system definition.

**Maintain**
Use this option to remove entries from the log that are no longer needed.

**Undo**
Use this option to create a resource update list that will reverse user-selected individual resource updates.

**Topics:**
- “Synchronizing IMS sysgen source with IMS resource definitions”
- “Viewing the log” on page 91
- “Reversing log entries” on page 93
- “Maintaining the log” on page 95
- “Reversing changes (undo)” on page 97

**Synchronizing IMS sysgen source with IMS resource definitions**

By using IMS HP Sysgen Tools, you can make changes to your IMS sysgen resources without actually running an IMS sysgen. However, doing this can cause problems when an IMS sysgen needs to be performed for maintenance or terminal definitions. There are two ways to manage your IMS sysgen source when you are using IMS HP Sysgen Tools to dynamically change IMS resource definitions.

One way to ensure that your IMS sysgen source is in sync with your executing IMS control region is to use Generate to create new IMS sysgen source every time
you want to perform an IMS sysgen. IMS HP Sysgen Tools provides the capability to reverse your MODBLKS data set and create a full set of IMS sysgen source that will ensure that your sysgen source is in sync with your executing IMS system. When you use this option, however, any comments that you have in your IMS sysgen source are lost when the source is re-created from the MODBLKS data set.

Another way to maintain your IMS sysgen source is to update your sysgen source with each individual update that was performed by IMS HP Sysgen Tools in response to user-installed resource update lists. IMS HP Sysgen Tools provides two tools that can help manage sysgen source maintenance when using this method.

**History log**

The History log tracks that each resource update in the log was reflected by changing your IMS sysgen source. After your IMS sysgen source is updated for an entry in the log, use the Y line command on that log entry to update the GEN SRC flag to show that the update is included in your IMS sysgen source. For more information, see "Viewing the log."

**Reverse log entry function**

Use the IMS HP Sysgen Tools log reverse function to create IMS sysgen macros that will update your IMS sysgen source and track which resource update entries in the log are already included in your gen source. This method determines if there are any log entries that are not included in your IMS sysgen source. For more information, see "Reversing log entries" on page 93.

**Viewing the log**

Use the View option to review log entries that document each individual resource change and IMS command in the log. You can use the Gen Source feature to update the log to show which resource updates have been included in the IMS sysgen source.

**About this task**

Complete the following steps to view the log:

1. Select option 1 from the IMS HP Sysgen Tools history log menu to display an empty log view panel. A valid IMSID is required to retrieve and display log entries.

![Figure 52. Empty log view panel](image-url)
After the IMSID is entered, log entries from the associated log are displayed. The entries are presented in descending time order, as shown in the following figure:

![Log entries](image)

Figure 53. Panel with Log entries

2. Sort the log entries by using the **SORT** primary command followed by the column name. You can sort the log by any column name on the panel. For example, to sort the log entries by the user ID which installed each entry, enter **SORT USERID**.

3. For IMS HP Sysgen Tools resource entries, you can track whether IMS sysgen source has been updated to reflect the change represented by a log entry. Enter the **Y** line command to change the **GEN SRC** field to YES for a sysgen update entry. You can use this to indicate that the sysgen source has been updated for this log entry. You can also use the **N** line command to change the **GEN SRC** field back to NO.

4. Select a log entry by using the **S** line command to display the details of the change. The panel in Figure 54 on page 93 shows an example of a sysgen resource change, including the IMS sysgen macro that reflects the updated resource definition and the old and new values of the resource attributes. Similar information is displayed for other resource updates. Security changes, IMS commands, Resource Update List commands (LIST-CMD entries), ACB reloads, and storage zaps display similar information about the updated information, including before and after values of attributes wherever appropriate.
Reversing log entries

When an IMS sysgen is required for maintenance, a new release, or TM configuration changes, IMS application source macros (DATABASE, APPLCTN, TRANSACT, and RTCODE statements) should be updated to reflect the current configuration.

About this task

Complete the following steps to update the IMS application source macros:

1. Select option 7 from the IMS HP Sysgen Tools Primary Options menu, Figure 22 on page 70

   A complete replacement of application IMS sysgen source macros is generated. To maintain existing IMS sysgen source, with comments intact, the reverse log entry function provides a report showing changes required to update IMS sysgen source to reflect all changes installed through resource update lists.

2. Select option 2 from the IMS HP Sysgen Tools history log menu to define the requirements for the IMS sysgen source report. The Create sysgen source from log panel is displayed.
3. Select option 1 to select log entries to reverse by date or select option 2 to select log entries by the setting of the GEN Source flag.

4. Specify the IMSID of the log that is to be used to select entries.

5. Specify an Output DSN. The Output DSN must be an existing data set with LRECL=80 and RECFM=FB.

6. If you selected option 1, specify a date range.
   If you select entries by date, you must specify a start and stop date for the entries. These dates must be Julian dates with a 4-digit year (for example, 2017.001 for January 1, 2017). The current Julian date is always shown on the panel.

   After processing input entered on the Create IMS Sysgen Source from Log panel, IMS HP Sysgen Tools populates the data set with a report showing all resource adds, deletes, and updates that would be required for IMS sysgen source to reflect the online configuration.

   The report, which is generated in IMS sysgen source format, shows each resource definition and comments reflecting information about all changes to the resource. DATABASE macros are listed first, and are sorted by the database name. Next, APPLCTN (program) resources are listed (in PSB name order), along with any associated transactions or route codes that were also updated. After all APPLCTN macros are listed, any TRANSACT or RTCODE macros changed by resource update lists, but not associated with a program definition that was updated by a resource update list, are shown.

   Figure 56 on page 95 shows an example of the format of a sysgen report. An asterisk is used in column 1 to designate a comment to the high level assembler, the utility that processes an IMS stage 1 sysgen. This means that comment lines can be included in the IMS sysgen source as shown in the report to reflect historical information about who changed a resource definition and when.
Resources that were deleted by installation of a resource update list have three asterisks beginning in column 1.

In Figure 56 the first entry includes comments about the deletion of database AAA, and the user ID and time stamp of the installation of the resource update list that performed the deletion. You can retain these report comments, which include an asterisk in column 1, in the IMS sysgen source as presented because the asterisk makes them a comment within the IMS gen source. Because the first entry in the report is a delete of database AAA, the macro is preceded by three asterisks, making this line a comment in the IMS sysgen source, as well.

The second entry shows a database, DBSHR0, which was updated in two resource update lists. It shows the user ID that installed each resource update list, as well as the time stamp when the resource update list was installed. The DATABASE macro that follows the comments shows the database as it should be defined to reflect the original definition and the two updates.

The first APPLCTN entry shows an example of an updated program definition. The two comments show the update user and time stamps, and the definition that follows shows how the APPLCTN macro should be coded to reflect the changes made in the two resource update lists that were installed. Following the APPLCTN macro is a TRANSACT definition for transaction A. This transaction appears in this location because it must follow the APPLCTN definition for the prior APPLCTN macro. The comment immediately preceding the TRANSACT macro for transaction A states that the transaction must be associated with PSB DFSSAM01, the prior PSB name in the report.

Following the comments is the TRANSACT macro, itself, as it should appear in the sysgen source.

**Maintaining the log**

The IMS HP Sysgen Tools log data set might become filled with resource update list entries. Also, you might want to remove entries from the log when the IMS sysgen source is updated to reflect the entries in the log. To remove log entries, use the log maintenance function.
About this task

Because the IMS HP Sysgen Tools log is used only for historical reporting, there is no requirement to maintain log entries for any reason other than the reporting functions documented in this section. The log is not used by IMS or IMS HP Sysgen Tools to maintain the sysgen definitions.

To remove entries from the log:
1. Select option 3 (Maintain) from the IMS HP Sysgen Tools History Log menu. The IMS HP Sysgen Tools log maintenance panel is displayed:

2. Select a method for determining which log entries are to be deleted. You can either delete entries based on their date, or you can delete entries based on the setting of the GEN SRC flag.

   1 (DATE)
   
   Option 1 allows you to specify start and stop dates for log entries to be deleted.
   
   If you select entries by date, you must specify the type of log entries to be deleted. Select any or all of the three types of log entries by placing a non-blank character next to the record type description. You must also specify a start and stop date for entries to be deleted. These dates must be Julian dates with a 4-digit year (for example, 2015.001 for January 1, 2015). The current Julian date always appears on the panel for reference.

   2 (GEN SRC)
   
   Option 2 allows you to delete only database, program, transaction, or route code add/delete/update records which have the GEN SRC field set to Yes (indicating that IMS sysgen source has been updated to reflect the change indicated by the log entry).
   
   If you select option 2, you need only to populate the IMSID field.
   
   No Command, Reload, Zap, or IMS Security records are deleted.

3. The IMSID field is required for both options 1 and 2. Enter a valid IMSID, which defines the HP Sysgen log data set to be updated by the maintenance process.

4. Press Enter.
The Log Status panel is displayed, which shows the number of log records before and after the log maintenance and the number of log entries that were removed.

![Log Status panel](image)

**Reversing changes (undo)**

You can use IMS HP Sysgen Tools to reverse changes to IMS resource and security definitions. By using the IMS HP Sysgen Tools history log, you can select specific resource or security updates, and generate a resource update list that reverses the effects of the selected log entries.

**About this task**

To use the UNDO function:

1. Select option 4 from the IMS HP Sysgen Tools History Log menu.

   The IMSID selection panel for undo is displayed:

   ![IMSID selection panel](image)

   **UNDO**
   
   **Command ==>**
   
   IMS HP Sysgen Tools - Select Resource Updates to Undo

   The UNDO option allows you to select History Log entries used to create a Resource Update List which will reverse the effects of the selected entries.

   **IMSID ==>** IMS9

   Enter the IMSID of the IMS system for which History Log entries will be displayed. You will then be presented with a list of History Log entries, from which you can mark entries with a "U" to create undo entries.

   When finished marking entries to undo, you will specify a Resource Update List name which will be used to hold the undo entries you selected.

   ![The IMSID selection panel for Undo](image)

   **Figure 59. The IMSID selection panel for Undo**

2. Enter the IMSID for the resource updates that are to be backed out, and press Enter.

   The Selecting Log Entries to Undo panel is displayed:
Select entries to undo with a U and press Enter with no changes to continue.

Primary Commands:
- SORT Sort the Log Entries
- L Locate a Log Entry
- U Create an UNDO Entry

Line Commands:
- S View Entry Details
- Create a new resource update list
- UNDO Roll the log back

<table>
<thead>
<tr>
<th>CMD</th>
<th>Function</th>
<th>Resource</th>
<th>Name</th>
<th>List</th>
<th>Userid</th>
<th>Time</th>
<th>GEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>UPDATE</td>
<td>TRANSACTION</td>
<td>ADDINV</td>
<td>ADDINV</td>
<td>P390M</td>
<td>2015.296</td>
<td>09:45:31</td>
<td>NO</td>
</tr>
<tr>
<td>ADD</td>
<td>DATABASE</td>
<td>ZZZ</td>
<td>DBADD</td>
<td>P390M</td>
<td>2015.277</td>
<td>12:49:16</td>
<td>NO</td>
</tr>
<tr>
<td>ADD</td>
<td>DATABASE</td>
<td>LAB1</td>
<td>DBADD</td>
<td>P390M</td>
<td>2015.277</td>
<td>12:49:16</td>
<td>NO</td>
</tr>
<tr>
<td>ADD</td>
<td>DATABASE</td>
<td>LAB2</td>
<td>DBADD</td>
<td>P390M</td>
<td>2015.277</td>
<td>12:49:16</td>
<td>NO</td>
</tr>
<tr>
<td>ADD</td>
<td>DATABASE</td>
<td>MMM</td>
<td>DBADD</td>
<td>P390M</td>
<td>2015.277</td>
<td>12:49:16</td>
<td>NO</td>
</tr>
<tr>
<td>ADD</td>
<td>DATABASE</td>
<td>MMM</td>
<td>DBADD</td>
<td>P390M</td>
<td>2015.251</td>
<td>06:53:09</td>
<td>NO</td>
</tr>
<tr>
<td>ADD</td>
<td>DATABASE</td>
<td>ZZZ</td>
<td>DBADD</td>
<td>P390M</td>
<td>2015.251</td>
<td>06:53:09</td>
<td>NO</td>
</tr>
<tr>
<td>ADD</td>
<td>DATABASE</td>
<td>AAA</td>
<td>DBADD</td>
<td>P390M</td>
<td>2015.215</td>
<td>06:53:09</td>
<td>NO</td>
</tr>
<tr>
<td>ADD</td>
<td>DATABASE</td>
<td>MMM</td>
<td>DBADD</td>
<td>P390M</td>
<td>2015.196</td>
<td>19:44:15</td>
<td>NO</td>
</tr>
<tr>
<td>ADD</td>
<td>DATABASE</td>
<td>ZZZ</td>
<td>DBADD</td>
<td>P390M</td>
<td>2015.196</td>
<td>19:44:15</td>
<td>NO</td>
</tr>
<tr>
<td>ADD</td>
<td>DATABASE</td>
<td>AAA</td>
<td>DBADD</td>
<td>P390M</td>
<td>2015.196</td>
<td>19:44:15</td>
<td>NO</td>
</tr>
<tr>
<td>UPDATE</td>
<td>TRANSACTION</td>
<td>IMSCMD</td>
<td>IMSCMD2</td>
<td>P390M</td>
<td>2015.196</td>
<td>11:41:09</td>
<td>NO</td>
</tr>
<tr>
<td>UPDATE</td>
<td>TRANSACTION</td>
<td>IMSCMD</td>
<td>IMSCMD2</td>
<td>P390M</td>
<td>2015.196</td>
<td>09:50:05</td>
<td>NO</td>
</tr>
</tbody>
</table>

**Figure 60. Selecting log entries to undo**

This panel contains a table of history log entries of IMS resource updates that have been installed for the selected IMS subsystem. It also shows an example of a history log undo list. This panel is the same as the view log panel, except that IMS command entries are not included in the display, because those entries cannot be undone.

3. Use the S line command to view details of a log entry such as which attributes were changed and what the old and new values are.

4. Use the U line command to mark a log entry for undo processing.

You can continue to scroll through the list of log entries, select entries to review the details of a change, and mark entries for undo processing.

The marked entries will be used to create a new resource update list, which will have the effect of reversing the entries that you marked. Because a resource update list can have only a single entry that affects a given resource, make sure that you select only one log entry for a given resource. For example, the last two entries show updates to transaction IMSCMD. You should not select both of these entries to undo because this will generate two transaction updates in the resource update list that will be created. If you try to install the new resource update list, an error will result because transaction IMSCMD has two updates in the resource update list.

When multiple entries occur in the log, make sure that you select the correct entry to undo. For example, in Figure 60, there are two entries in the panel that update transaction IMSCMD. Selecting the IMSCMD update entry with time stamp 11:41:09 will back out only that log entry. The IMSCMD update entry with time stamp 09:50:05 becomes the new entry because that definition of IMSCMD was active when the 11:41:09 entry was installed. If, however, you choose the 09:50:05 entry to back out, both the 09:50:05 and the 11:41:09 updates to transaction IMSCMD would be backed out, reverting the definition to the way it was before the 09:50:05 install.

5. Press Enter.

6. Press Enter again.

If you press Enter again without making any changes or scrolling, you will set the entries to be backed out and will proceed to the next panel, where you
specify the name of the resource update list to be created.

7. Specify a resource update list name where the undo entries will be created.

The member name that you specify must be a new member name in the IOHPDS data set. If an existing member name is entered, a warning message will be displayed, and you must change the member name to a name that is not already in use.

After you specify a valid member name, the edit panel is displayed:

8. Review the entries that were generated by the undo process and make changes to the entries, or add and delete entries from the update list.

9. Press End (PF3) to save the new resource update list.

You can now verify and install the update list or leave the update list for installation at a later time.

---

Figure 61. Specify the undo resource update list member name

Figure 62. Editing the undo resource update list
Issuing IMS commands

IMS HP Sysgen Tools allows you to enter an IMS command and receive the output of the command.

Use option C from the Primary Options menu, Figure 22 on page 70 to enter IMS commands. Specify an IMSID and an IMS command to see results displayed as in the following figure:

```
<table>
<thead>
<tr>
<th>CMD</th>
<th>Line 00000000 Col 001 080</th>
</tr>
</thead>
<tbody>
<tr>
<td>Command ==&gt; ____________________________________________</td>
<td>Scroll ==&gt; CSR</td>
</tr>
<tr>
<td>IMSID ==&gt; IMS9</td>
<td>IMS CMD ==&gt; /DIS A</td>
</tr>
<tr>
<td>________________________________________________________</td>
<td></td>
</tr>
</tbody>
</table>

Enter an IMSID and IMS Command to issue a command. To refresh a command, type GO on the Command line.

********************************************************************** Top of Data **********************************************************************
/DIS A
REGID JOBNAME TYPE TRAN/STEP PROGRAM STATUS CLASS
  1 IMS90001 TP WAITING 1, 2, 3, 4
  JMPRGN JMP NONE
  JBRGON JBP NONE
  BATCHRG BMP NONE
  DBTRGN DBT NONE
  IMS9DBC DBRC
  IMS9DC DBRC
VТАМ ACB OPEN -LOGONS ENABLED
IMSLI=P990.IMS9PPC APPC STATUS-ENABLED TIMEOUT= 0
OTMA GROUP=OTMAGRP9 STATUS=ACTIVE
APPC/OTMA SHARED QUEUE STATUS - LOCAL=INACTIVE GLOBAL=INACTIVE
APPC/OTMA RRS MAX TCBS - 40 ATTACHED TCBS - 1 QUEUED RRSWKS - 0
APPLID=IMS9 GRSNAME= STATUS=DISABLED
LINE ACTIV-IN - 1 ACTIV-OUT - 0
NODE ACTIV-IN - 0 ACTIV-OUT - 0
+05296/191856*

Figure 63. Command output

You can scroll the output by using standard ISPF scroll keys. You can enter another command on the panel. The output of that command will replace that of the initial command.

To re-issue the previous command, enter the GO command on the command line and press Enter. The updated results are displayed. Any IMS commands that are issued this way (other than /DISPLAY commands) are logged in the HP Sysgen log for the specified IMSID.
Dynamic Resource Definition (DRD) status

By using the ISPF panel provided by IMS HP Sysgen Tools, you can query the status of the Dynamic Resource Definition (DRD) and the IMS resource definition (IMSRSC) repository, as well as information about the system RDDSs or the IMSRSC repository that IMS uses.

If you select this ISPF option and specify an IMS system that has DRD disabled, the DRD status panel will indicate that DRD is disabled. If you specify an IMS system that has DRD enabled, the DRD status panel will list all the system RDDSs or the IMSRSC repository. The panel shows a list of the status and the last update time stamp for each RDDS or IMSRSC repository.

To display the DRD status panel, select option D (DRD) from the IMS HP Sysgen Tools main menu. Complete the prompt to enter an IMSID that is known to IMS HP Sysgen Tools.

If DRD is enabled and IMSRSC repository is not enabled, the following panel is displayed:

<table>
<thead>
<tr>
<th>Resource Definition Data Set Name</th>
<th>Status or Timestamp</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMS1.IMS1.RDDS1</td>
<td>2018.107 22:31:35.479699-UTC</td>
</tr>
<tr>
<td>IMS1.IMS1.RDDS2</td>
<td>2018.102 16:57:32.556037-UTC</td>
</tr>
<tr>
<td>IMS1.IMS1.RDDS3</td>
<td>2018.102 17:26:30.258770-UTC</td>
</tr>
</tbody>
</table>

Figure 64. DRD Status panel example 1

If DRD and IMSRSC repository are both enabled, the following panel is displayed:

<table>
<thead>
<tr>
<th>IMSRSC Repository Name</th>
<th>Timestamp</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMS1.REPO.IMSPRI.RMD</td>
<td>2018.107 22:31:34.479699-UTC</td>
</tr>
</tbody>
</table>

Figure 65. DRD Status panel example 2
Storage functions

IMS HP Sysgen Tools provides functions that address use of MVS virtual storage. By using these functions, you can:

- Review MVS virtual storage area boundaries and use, and receive information such as private area sizes and CSA utilization.
- Review CSA utilization by subpool and key.
- View virtual storage being used by an IMS control region, and change that storage.

Access to these functions is provided by selecting option S (Storage) of the Primary Options menu, (see Figure 22 on page 70). Selecting option S displays the menu shown in the following figure:

```
STORAGE    IMS HP Sysgen Tools - Virtual Storage Utilities
Option ==>-------------------------------------------
  1 Map     Virtual Storage Map for this MVS system
  2 CSA     Common Storage allocation by subpool and key
  3 Storage  IMS Control Region Storage Display/Alter
```

Figure 66. Storage menu

The following options are available:

1. Provides access to virtual storage boundaries and usage.
2. Provides access to CSA usage by subpool and key.
3. Provides access to the virtual storage Display and Alter function.

Topics:

- “Option 1. Virtual storage map for this MVS system”
- “Option 2. CSA map for this MVS system” on page 103
- “Option 3. Virtual storage display and alter” on page 104
- “Storage display panel” on page 106
- “Storage Zap panel” on page 107
- “Zap Verify panel” on page 108

Option 1. Virtual storage map for this MVS system

Option 1 of the Storage menu provides information about MVS virtual storage configuration for the system where the TSO user is logged on. It provides the length of storage areas as well as the starting and ending addresses of those areas. For CSA and SQA areas of storage, it also provides information about the percent utilization of the area of storage.

Figure 67 on page 103 shows an example of the information displayed when you select option 1.
This panel shows the virtual storage areas, the length of each area, and the starting and ending virtual storage addresses. For common storage pools (CSA, ECSA, SQA, and ESQA), the panel shows the percent of the area in use.

The **Pct Alloc** column shows the percent of the storage area that is allocated and used. Common areas are always allocated in 4K storage areas, even if an application requests 1K area of the pool. The percent allocated column shows only the storage actually being used. In this case, it would show that 3K of the 4K area is free.

This information can be useful for determining private area sizes that are available to applications, as well as showing the utilization of the CSA and ECSA storage areas. IMS uses significant amounts of both CSA and ECSA; therefore, this information might be useful when reviewing IMS tuning parameters.

### Option 2. CSA map for this MVS system

Option 2 of the Storage menu provides information about common storage area (CSA) and extended common storage area (ECSA) storage allocated by subpool and storage protect key.

The following figure shows an example of the displayed information when you select option 2:
Figure 68. CSA utilization by subpool and key

This panel shows four CSA subpools and any overflow SQA allocated from CSA storage. In the center of the panel, you can see one set of subpools above and one set below the 16 megabyte line. The subpools above the 16M line are in the ECSA storage, and the subpools shown below the 16M line are in the CSA storage.

In addition, the total size of ECSA and CSA, along with the amount and percentage of the storage areas, are shown at the top of the panel.

Option 3. Virtual storage display and alter

Option 3 of the Storage menu provides access to the IMS control region storage Display and Alter function. This option allows you to display contents of storage in the IMS, DLISAS, or DBRC address spaces.

Storage request panel

The storage request panel allows you to display storage in one of the IMS address spaces.

When option 3 of the Storage menu is selected, the Storage Request panel is displayed, as shown in the following figure:
The storage request panel allows you to display storage in one of the IMS address spaces. You can specify a request by using the five entry fields in the panel. These fields are described as follows:

**IMSID**

The IMSID of an IMS subsystem that is defined to IMS HP Sysgen Tools and is currently active.

**Address Space**

The address space that contains the storage to be displayed. This must be specified as IMS DLISAS, or DBRC.

**Address**

The address of the storage to be displayed. IMS HP Sysgen Tools allows you to use symbolic values when specifying the address. For details on how to specify an address, see “Specifying an address.”

**Length**

The length of storage to be displayed. If you specify the address as a symbolic address, IMS HP Sysgen Tools determines the length of the control block or module you request. If you want IMS HP Sysgen Tools to determine the length to be displayed, leave the **Length** field blank.

**Comment**

This is an optional field that you can use to document the storage being displayed. It is saved in Past Storage Display Information in the bottom portion of the panel.

You can use Past Storage Display Information entries in the following ways:

- Select one of the entries and retrieve storage from the requested IMS system.
- Delete entries in the table by entering a /D line command.
- Update the **Comments** field by entering or updating the information in the **Comments** field.

**Specifying an address**

You can specify the **Address** field of the Storage Request panel as a hexadecimal address or as a symbolic address.
IMS HP Sysgen Tools supports symbolic values that can be used in the Address field. The following symbolic names are supported:

Table 8. Valid symbolic values for Address field of Storage Request panel

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVT</td>
<td>Displays the MVS communication vector table</td>
</tr>
<tr>
<td>SCD</td>
<td>Displays the IMS system contents directory</td>
</tr>
<tr>
<td>MOD (name)</td>
<td>Displays the specified module name</td>
</tr>
<tr>
<td>CLB(name) or NODE(name)</td>
<td>Displays the CLB for the node name entered</td>
</tr>
<tr>
<td>CNT(name) or LTERM(name)</td>
<td>Displays the CNT for the LTERM name entered</td>
</tr>
<tr>
<td>SMB(name) or TRAN(name)</td>
<td>Displays the SMB for the transaction name entered</td>
</tr>
<tr>
<td>DDIR(name) or DBD(name)</td>
<td>Displays the DDIR for the database name entered</td>
</tr>
<tr>
<td>PDIR(name) or PSB(name)</td>
<td>Displays the PDIR for the PSB name entered</td>
</tr>
<tr>
<td>RCTE(name)</td>
<td>Displays the RCTE for the route code name entered</td>
</tr>
<tr>
<td>LINK(number)</td>
<td>Displays the LLB for the MSC link number entered</td>
</tr>
<tr>
<td>MSPLINK(name)</td>
<td>Displays the LCB for the MSPLINK name entered</td>
</tr>
<tr>
<td>MODLIST</td>
<td>Displays a list of all modules loaded in the target address space</td>
</tr>
</tbody>
</table>

In addition to the symbolic names in this table, you can include offsets and indirection. An offset is specified by adding a plus (+) or minus (-) after an address followed by a hexadecimal number. Indirection causes the four bytes at the specified address to be used as the address to be displayed. The percent sign (%) indicates that the four-byte address is to be treated as a 24-bit address, while a question mark (?) indicates that the four-byte address is to be treated as a 31-bit address.

Combining the symbolic address with offset and indirection allows the Address field to become a powerful storage tool. For example, address SCD+1D8? causes IMS HP Sysgen Tools to find the IMS SCD, go to offset 1D8 of the SCD, and then use the 31-bit address at offset 1D8 as the starting address of storage to be displayed. In an IMS Version 13 environment, this would display the first PDIR control block defined in the last IMS sysgen.

**Storage display panel**

After a valid request is entered on the Storage Request panel, storage is displayed, and the panel shows hexadecimal and text format displays of the storage requested, as well as the address and offset on each line.

You can also use the indirection operators (% for a 24-bit address or ? for a 31-bit address) on any fullword on the panel to display the storage at the address in that fullword.

The following figure shows the Storage Display panel:
The panel shows the address of the storage in the first column and the offset from the beginning of the display in the second column. The next four columns are 16 bytes of storage at that address. The last column is the EBCDIC text representation of the 16 bytes of storage.

Preceding each hexadecimal word of storage is a column where an indirection operator can be placed. Placing a percent sign (%) before a word causes that word to be treated as a 24-bit address, and causes the storage at that address to be displayed.

From the storage display panel, you can press the End key (typically PF3) to return to the Storage Request panel, or enter the /ZAP command on the Command line. The /ZAP command allows you to change the storage currently displayed.

**Storage Zap panel**

The Storage Zap panel allows you to update storage displayed on the panel.

The Storage Zap panel, shown in [Figure 71 on page 108](#) allows you to type over any of the hexadecimal storage values. This is the first step in the storage alter process.
To update the storage that IMS is using, simply type over the current values displayed on the Zap panel with new values. Entering the values on this panel does not cause the storage to be updated until you verify the updates on the next panel.

You can press the End key (typically, PF3) to return to the storage display panel, or update one or more hexadecimal values on the panel, and enter the /GO command on the Command line. The /GO command provides a summary of the changes made and allows you to verify them before installing the changes to the storage values.

### Zap Verify panel

The Zap Verify panel shows all changes that were entered on the Zap panel. It allows you to verify that the changes were what you intended.

An example of the Zap Verify panel is shown in the following figure:

**Figure 71. Storage zap panel**

To update the storage that IMS is using, simply type over the current values displayed on the Zap panel with new values. Entering the values on this panel does not cause the storage to be updated until you verify the updates on the next panel.

You can press the End key (typically, PF3) to return to the storage display panel, or update one or more hexadecimal values on the panel, and enter the /GO command on the Command line. The /GO command provides a summary of the changes made and allows you to verify them before installing the changes to the storage values.

### Zap Verify panel

The Zap Verify panel shows all changes that were entered on the Zap panel. It allows you to verify that the changes were what you intended.

An example of the Zap Verify panel is shown in the following figure:

**Figure 72. Zap verify panel**

The Zap Verify panel displays old and new values for each storage change that was entered on the Storage Zap panel. This panel shows the address and offset as well as the old and new hexadecimal and text values of all updated storage values.
You should carefully review the information displayed on the Zap Verify panel. If there are unintended or incorrect updates, use the End key (typically, PF3) to return to the Storage Display panel. If the changes are correct, enter the /ZAP command on the Command line to update the storage values.

**Attention:** If you change a storage value, the results may be unpredictable. Be sure that you understand all implications of a storage change before you update storage values.
Generating JCL for batch utilities

The IMS HP Sysgen Tools ISPF interface includes a function that can be used to generate JCL for many of the IMS HP Sysgen Tools batch utilities.

Option U (Utilities) on the IMS HP Sysgen Tools Primary Options menu provides access to this function.

As shown in the following figure, the JCL Generator menu shows the batch utilities that are available through this process.

![JCL Generator Menu](image)

Figure 73. Utilities menu for generating JCL for running batch utilities

**Topics:**

- [“Setting up to use the JCL generator”](#)
- [“Using the JCL generator” on page 111](#)

**Setting up to use the JCL generator**

Before using any of the other options, you should use option 0 to specify a JOB card and provide the data set name of the SIOHLINK library which should be used by the generated jobs. Select option 0 to provide this required information to IMS HP Sysgen Tools.

If you select a different option before selecting option 0, the Setup panel will be displayed before you can proceed.

The following figure shows an example of a completed setup screen:

![JCL Generator Setup Screen](image)

Figure 74. JCL generator setup screen for running batch utilities
When initially displayed, the Setup panel has no JOB card JCL or the data set name for the load library. You should enter valid JOB card information on the four lines provided, and enter the fully-qualified data set name of the SIOHLINK data set. Press the Save key (usually PF3) to save this information in your ISPF profile, where it will be retained for future use.

**Using the JCL generator**

To use the JCL Generator, return to the JCL Generator menu shown in Figure 73 on page 110.

To create JCL, simply specify the IMSID for which you want to create JCL, and then select the option number corresponding to the batch utility you want to run.

The IMSID must be defined for use by IMS HP Sysgen Tools through the IMSID Setup process.

The batch utilities for which the JCL Generator will produce JCL include the following:

**Fastgen**

The Fast IMS sysgen utility, which performs a single step IMS MODBLKS stage 1, stage 2, and security gen.

**JCLIN**

The IMS HP Sysgen Tools JCLIN generator, which generates an IMS stage 2 job stream that can be used by the SMP/E JCLIN function.

**Verify**

The batch Resource Update List utility, which verifies a resource update list.

**Install**

The batch Resource Update List utility, which installs a resource update list.

**Synchronize**

The stage 1 convert utility for converting sysgen macro to resource update list, which synchronizes your IMS stage 1 sysgen source with a running IMS subsystem.

**Convert**

The stage 1 convert utility for converting sysgen macro to resource update list, which converts a subset of IMS sysgen source into a resource update list.

**Compare**

Compares two sets of MODBLKS and MATRIX data sets.

**Reverse**

Generates IMS sysgen source from either an active IMS system or from the active MODBLKS, RDDS, or IMSRSC repository data set for an IMS subsystem.

**Search**

Searches definitions of databases, programs, transactions, and routing codes in active IMS system control blocks (CORE) or data sets (MODBLKS, RDDS, or IMSRSC repository) for user-specified search words, and generates corresponding sysgen source macros (DATABASE, APPLCTN, TRANSACT, and RTCODE).

When you select a function and press Enter, IMS HP Sysgen Tools displays a batch job in an ISPF Edit session. You can use the **CREATE** or **REPLACE** ISPF command to
save the generated JCL, make changes to the JCL using standard ISPF Edit commands, or use the ISPF SUBMIT command to submit the batch job for processing.

When you are finished with the generated JCL, press the End key (usually, PF3) to return to the JCL generator menu.

**Important:** You must use the CREATE or REPLACE ISPF command to save the generated JCL, or it is discarded.

It is recommended that you always review generated JCL before submitting it. In the example in Figure 75 on page 113, Fastgen JCL was created by the JCL generator. All data set names were retrieved from the IMSID options for the selected IMS subsystem, but in some jobs, certain data set names may not be stored in the IMSID options. In such cases, the JCL generator typically creates JCL symbols, which are placed at the top of the JCL. Options that can be documented as JCL symbols are also placed at the top of the job, such as the **TARGET= JCL symbols** shown in Figure 75 on page 113.

When control card input is required for a utility, the JCL generator typically places question marks in a control card that requires user input. You should always review any control cards in generated JCL to ensure that the options you want to process are specified.

An example of generated JCL is shown as follows:
EDIT
Command ==> Scroll ==> CSR
****** ******************************************** Top of Data ********************************************
000001 //IOHJOB JOB (ACCT#),MARKA,CLASS=A,MSGCLASS=X,NOTIFY=P390M,
000002 // REGION=4M
000003 /*
000004 /*
000005 /* ********************************************
000006 /*
000007 /* IMS SYSGEN FASTGEN BATCH JCL FOR IMS IMS9
000008 /*
000009 /* SPECIFY THE FOLLOWING VARIABLES:
000010 /*
000011 // SET TARGET=S TARGET LIBRARIES TO BE UPDATED (S,I,A,B)
000012 /*
000013 /* ********************************************
000014 //FGEN EXEC PGM=IOHFGEN,PARM='IMSID=IMS9,TARGET=(&TARGET)' 
000015 //STEPLIB DD DSN=IMS.IOH230.SIOHLINK,DISP=SHR
000016 // DD DSN=IMS910.SDFSRESL,DISP=SHR
000017 //IOHOPT DD DSN=P390M.IOH.IOHOPT,DISP=SHR
000018 //IOHPRINT DD SYSOUT=
000019 //IMSGEN DD SYSOUT=
000020 //SECGEN DD SYSOUT=
000021 //IMSRPT DD SYSOUT=
000022 //SECRPT DD SYSOUT=
000023 //SYSABEND DD SYSOUT=
000024 //OCLSTAT DD DSN=IMS910.OCLSTAT,DISP=SHR
000025 //MODBLKS DD DSN=IMS910.MODBLKS,DISP=SHR
000026 //MODBLKSA DD DSN=IMS910.MODBLKSA,DISP=SHR
000027 //MODBLKSB DD DSN=IMS910.MODBLKSB,DISP=SHR
000028 //MATRIX DD DSN=IMS910.MATRIX,DISP=SHR
000029 //MATRIXA DD DSN=IMS910.MATRIXA,DISP=SHR
000030 //MATRIXB DD DSN=IMS910.MATRIXB,DISP=SHR
000031 //IOHGEN DD DSN=IMS910.IMSGEN.CNTL(IMS9MACS),DISP=SHR
000032 //IOHSEC DD DSN=IMS910.IMSGEN.CNTL(SECURITY),DISP=SHR
000033 //
****** ******************************************** Bottom of Data ********************************************

Figure 75. Sample generated JCL for running batch utilities

Related information:
Chapter 9, “Creating resource update list entries in batch,” on page 169
Chapter 10, “Using the Batch Update List utility,” on page 177
Chapter 11, “Using the Fast Sysgen utility,” on page 183
Chapter 12, “Using the JCLIN generator,” on page 201
Chapter 13, “Using the Sysgen Compare utility,” on page 205
Chapter 14, “Using the Batch Reverse Sysgen utility,” on page 211
Part 3. Resource update list

The IMS HP Sysgen Tools resource update list provides the capability to create a group of IMS sysgen changes to be implemented simultaneously.

A resource update list is a group of IMS changes and commands that are implemented simultaneously and that provide incremental sysgen changes.

Topics:

- Chapter 5, “Managing a resource update list,” on page 117
- Chapter 6, “Editing a resource update list,” on page 119
- Chapter 7, “Verifying a resource update list,” on page 155
- Chapter 8, “Installing a resource update list,” on page 161
- Chapter 9, “Creating resource update list entries in batch,” on page 169
- Chapter 10, “Using the Batch Update List utility,” on page 177
Chapter 5. Managing a resource update list

A resource update list is created by one user and then, later, installed by a different user. Each resource update list entry defines an action to be taken when the resource update list is installed.

The types of actions that can be performed by the resource update lists include:
- Adding, deleting, updating, or renaming an IMS resource (database, program, transaction, or route code) definition
-Reloading an IMS ACBLIB member
- Reloading a Data Entry Database (DEDB) randomizer module
- Issuing an IMS command
- Updating an IMS terminal security for an LTERM
- Updating an IMS Application Group Name (AGN) definition

To create a resource update list, you can use the IMS HP Sysgen Tools ISPF interface.

The Edit function allows you to define up to 32,000 individual resource update list entries. Each entry defines an action to be taken when the resource update list is installed. You can perform several types of updates, including the following:
- Add, delete, update, or rename an IMS resource (database, program, transaction, or route code) definition
- Reload an IMS ACBLIB member
- Reload a Data Entry Database (DEDB) randomizer module
- Issue an IMS command
- Update IMS terminal security for an LTERM
- Update an IMS Application Group Name (AGN) definition
- Update IMS Transaction Command security

You can use the editor to view and update existing definitions. After all related IMS resource changes are defined, the entries are saved as a single resource update list.

You can verify that the changes that are defined in a resource update list are compatible with a specified IMS system or group of IMS systems. When you use the Verify option, checks are performed to ensure that the entries in a resource update list are compatible with the target IMS subsystem(s); for example, to ensure that remote and local MSC SYSIDs are valid. In fact, a single resource update list can be verified and installed in multiple IMS subsystems without any changes to the resource update list. Verification of an update list is optional. The installation process performs an internal verification prior to making any changes.

Installation of a resource update list is initiated through the ISPF Install option. However, the actual installation runs in an APPC/MVS initiator on the MVS system where each IMS subsystem is running. The IMS subsystem must be active for a resource update list to be installed.

The installation process follows these procedures:
1. IMS HP Sysgen Tools verifies that all entries in the resource update list can be installed on the target IMS subsystem.

2. After verification has completed, any IMS commands (with sequence "before") are issued.

3. Existing MODBLKS/MATRIX definitions are read from the active data sets, updated to reflect entries in the resource update list, and written to the inactive MODBLKS/MATRIX data sets.

4. After inactive libraries are updated, IMS resource definitions in memory are dynamically updated by HP Sysgen Tools.

5. IMS HP Sysgen Tools coordinates an IMS online change to bring the updated MODBLKS data set into sync with the already updated IMS control blocks, to add or delete any IMS resource definitions and to install any IMS security updates requested in resource update list entries.

6. After the online change completes, any IMS ACBLIB reload entries are processed.

7. Any IMS command (with sequence "after") are issued.

While it uses online change to make the changes permanent, this resource list installation process implements almost all resource updates dynamically before the online change occurs. This process makes the online change much less likely to encounter problems that might cause the online change process to fail. This online change assist is used only when installing a resource update list.
Chapter 6. Editing a resource update list

A resource update list is a group of IMS sysgen changes that are to be implemented simultaneously. The features of a resource update list are introduced in “Resource update lists” on page 8. Use option 2 of the IMS HP Sysgen Tools Primary Options menu to create a resource update list.

The IMS HP Sysgen Tools Primary Options menu contains a field for the IOHPDS data set name. The IOHPDS data set is where resource update lists are stored. Each resource update list comprises a member of the IOHPDS data set. Each user can have his or her own IOHPDS data set, or the IOHPDS data set can be shared. The data set name on the Primary Options menu is carried across ISPF sessions, so there is no need to remember the name between IMS HP Sysgen Tools uses.

Topics:
- “Starting an edit session” on page 120
- “Selecting a resource update list” on page 121
- “Performing an edit” on page 124
- “Updating an AGN definition” on page 146
Starting an edit session

Before selecting option 2 from the Primary Options menu, you must enter a valid data set name in the IOHPDS Data Set Name field.

About this task

See an example in the following figure:

```
0 Setup     IMS Configuration                  User  P390M
1 View      Display IMS Resource Definitions  Date  06/11/03
2 Edit      Create an IMS Resource Update List Time 21:46
3 Verify    Verify an IMS Resource Update List z/OS   01.07.00
4 Install   Implement an IMS Resource Update List Sysname ADCD
5 Validate  Syntax Check Stage 1 Sysgen Source JESNode N1
6 Fastgen   Perform a Fast IMS Sysgen Sysplex ADCDPL
7 Reverse   Create Stage 1 Source from MODBLKS
8 History   Review Historical Log Information
C Command   Issue an IMS Command
D DRD       Dynamic Resource Definition Status
S Storage   z/OS Virtual Storage Utilities
U Utilities Generate JCL for HP Sysgen Batch Jobs

IOHPDS Data Set Name ===> IMS.IOH.IOHPDS
  (Fully qualified DSNAME without quotes)
```

Figure 76. HP Sysgen primary options menu
Selecting a resource update list

After you enter the IOHPDS data set name and select option 2, the existing members, if any, of the IOHPDS data set are displayed.

The following panel shows existing members of the IOHPDS data set, also called the existing resource update lists.

<table>
<thead>
<tr>
<th>Name</th>
<th>Target</th>
<th>Status</th>
<th>Lines</th>
<th>Created</th>
<th>Updated</th>
<th>Upd-ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>#TERMSE4</td>
<td>IMS9</td>
<td></td>
<td>1</td>
<td>2016/03/17</td>
<td>2017/05/06</td>
<td>P390M</td>
</tr>
<tr>
<td>A</td>
<td>IMS7</td>
<td></td>
<td>20</td>
<td>2016/02/02</td>
<td>2017/05/06</td>
<td>P390M</td>
</tr>
<tr>
<td>ADDINV</td>
<td>IMS7</td>
<td>VERIFY</td>
<td>1</td>
<td>2015/09/04</td>
<td>2017/05/06</td>
<td>P390M</td>
</tr>
<tr>
<td>ANDREW1</td>
<td>IMS7</td>
<td></td>
<td>1</td>
<td>2015/11/17</td>
<td>2017/05/06</td>
<td>P390M</td>
</tr>
<tr>
<td>ANDREW2</td>
<td>IMS7</td>
<td></td>
<td>6</td>
<td>2015/11/17</td>
<td>2017/05/06</td>
<td>P390M</td>
</tr>
<tr>
<td>ANDREW3</td>
<td>IMS7</td>
<td></td>
<td>2</td>
<td>2015/11/20</td>
<td>2017/05/06</td>
<td>P390M</td>
</tr>
<tr>
<td>ANDREW4</td>
<td>IMS7</td>
<td></td>
<td>2</td>
<td>2015/11/20</td>
<td>2017/05/06</td>
<td>P390M</td>
</tr>
<tr>
<td>ANDREW5</td>
<td>IMS7</td>
<td></td>
<td>3</td>
<td>2015/11/20</td>
<td>2017/05/06</td>
<td>P390M</td>
</tr>
<tr>
<td>A1</td>
<td>IMS9</td>
<td>*EDIT</td>
<td>6</td>
<td>2016/03/12</td>
<td>2017/05/06</td>
<td>P390M</td>
</tr>
<tr>
<td>BCMIVPS1</td>
<td>IMS7</td>
<td></td>
<td>1</td>
<td>2015/09/14</td>
<td>2017/05/06</td>
<td>P390M</td>
</tr>
<tr>
<td>CCFAOGP4M</td>
<td>IMS9</td>
<td>VERIFY</td>
<td>3</td>
<td>2016/06/29</td>
<td>2017/05/06</td>
<td>P390M</td>
</tr>
<tr>
<td>CLISTIM56</td>
<td>IMS9</td>
<td>VERIFY</td>
<td>1</td>
<td>2016/06/16</td>
<td>2017/05/06</td>
<td>P390M</td>
</tr>
<tr>
<td>CLISTIM57</td>
<td>IMS7</td>
<td></td>
<td>152</td>
<td>2016/09/16</td>
<td>2017/05/06</td>
<td>P390M</td>
</tr>
<tr>
<td>CLISTIM59</td>
<td>IMS9</td>
<td></td>
<td>5</td>
<td>2016/06/16</td>
<td>2017/05/06</td>
<td>P390M</td>
</tr>
<tr>
<td>CMD1</td>
<td>IMS7</td>
<td>VERIFY</td>
<td>2</td>
<td>2016/01/28</td>
<td>2017/05/06</td>
<td>P390M</td>
</tr>
</tbody>
</table>

Figure 77. Screen 1 of sample list of data set members in resource update list

After the Update List Selection screen is displayed, you can scroll right and left to view the three screens of summary information on the update lists. The first screen shows the following fields:

Name    The member name of the resource update list.

Target  The last target IMSID or group name that was used with the resource update list.

Status  The last action taken with the resource update list. A status of VERIFY or INSTALL is carried across ISPF sessions. A status of *VERIFY, *INSTALL, or *EDIT also appears when these actions have occurred during the edit session of this resource update list.

Lines   Shows the number of entries in the resource update list.

Created The date (yyyy/mm/dd) on which this resource update list was created.

Updated The time stamp when this resource update list was last updated.

Upd-ID   The user ID that last updated the resource update list.

You can scroll the panel by using the ISPF RIGHT command or by pressing PF11. An example of the second screen is shown in the following figure:
The second screen shows the following fields:

**Installed**

The time stamp showing when this resource update list was last installed.

**Inst-ID**

The user ID that last installed this resource update list.

The third screen can be displayed using the **RIGHT** command or by pressing **PF11** a second time. An example of the third screen is shown in the following figure:

![Figure 78. Screen 2 of sample list of data set members in resource update list](image)

The third screen shows the following fields:

**Name**

**Updated**

**Upd-ID**

**Installed**

**Inst-ID**

![Figure 79. Screen 3 of sample list of data set members in resource update list](image)

The third screen shows the following field:
Comments
A comment field that can be edited using a resource update list editor.

Sorting the list
The Update List Selection panel can be sorted on any column.

The default is to sort by the **Name** field. To sort on any other column, simply enter **SORT** and the column name on the command line. For example, to sort by creation date, enter **SORT CREATED**.

You can scroll through the resource list names using the typical UP and DOWN commands or PF keys. You can also use the **L** (Locate) command to automatically scroll to a specific entry. The Locate command works based on the current SORT column, or the Name column if no sort has been requested. In the default sort order, the **L MAA** command would scroll down to the first entry beginning with MAA. To find the first resource update list created in 2015, enter **SORT CREATED** and then **L 2015**.

Additional command line functions
The **D** and **R** line commands allow you to delete or rename, respectively, resource update list names.

The **S** primary command allows you to create a new resource update list that has a new member name. For example, on the command line you could enter **S NEWLIST**.

You can also use **S** in the CMD column to edit an existing update list. Simply enter **S** next to the name you choose. IMS HP Sysgen Tools then displays the existing entries defined in that resource update list.

You can also verify or install an existing resource update list from the Update List Selection panel. Use the **V** or **I** line commands to verify or install a single resource update list.
Performing an edit

When an existing resource update list is selected, the entries in the list are displayed.

The example in Figure 80 contains three entries; in this case, they are all ADDs for databases. The database names to be added are AAA, ZZZ, and MMM. The last update information is also shown for each entry in the resource update list, showing the last user ID which updated the update list entry as well as the time stamp the entry was updated.

The following primary commands are available while you are editing a resource update list:

Ins  Inserts a new entry in the resource update list. You can abbreviate this command by entering an I on the command line or you can use the I line command.

COPY Copies the contents of another resource update list into this resource update list. You can specify a member name on the command (for example, COPY LIST1), or you can enter the COPY command without any other operands to display the names of the update lists in the IOHPDS data set that you are currently editing.

CAN Cancels any changes that you have made to this resource update list during this edit session.

The following line commands are available from the Update List Entries panel:

D  Deletes a resource update list entry.

I  Inserts a new entry in the resource update list. This command can be used as either a line command or as a primary command on the command line.

R  Replicates and existing entry and displays the attributes of the new entry so that changes can be made.

S  Allows an entry to be edited.

<table>
<thead>
<tr>
<th>CMD</th>
<th>Function</th>
<th>Resource</th>
<th>Name</th>
<th>Updated</th>
<th>ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>ADD</td>
<td>DATABASE</td>
<td>AAA</td>
<td>2017/05/06 14:36:23</td>
<td>P390M</td>
</tr>
<tr>
<td>-</td>
<td>ADD</td>
<td>DATABASE</td>
<td>ZZZ</td>
<td>2017/05/06 14:36:30</td>
<td>P390M</td>
</tr>
<tr>
<td>-</td>
<td>ADD</td>
<td>DATABASE</td>
<td>MMM</td>
<td>2017/05/06 14:36:42</td>
<td>P390M</td>
</tr>
</tbody>
</table>

Figure 80. Edit command for data set members in resource update list

Inserting a new entry

When you insert a new entry in a resource update list, you must select a resource type and action.
The following figure shows an example of the panel for selecting the resource type and action.

```
EDIT  IMS HP Sysgen Tools - Insert a new Update List DBADD (IMS9)
Command ==> 

<table>
<thead>
<tr>
<th>Resource</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 DATABASE</td>
<td>Perform action on an IMS Database Definition</td>
</tr>
<tr>
<td>2 PROGRAM</td>
<td>Perform action on an IMS Program definition</td>
</tr>
<tr>
<td>3 TRAN</td>
<td>Perform action on an IMS Transaction definition</td>
</tr>
<tr>
<td>4 RTCODE</td>
<td>Perform action on an IMS Fast Path Route Code Definition</td>
</tr>
<tr>
<td>5 AGN</td>
<td>Update resources defined in an IMS Application Group Name (AGN)</td>
</tr>
<tr>
<td>6 TCOMMAND</td>
<td>Update IMS Transaction Command SMU Security</td>
</tr>
<tr>
<td>7 TERMSEC</td>
<td>Update IMS Terminal (LTERM) SMU Security</td>
</tr>
<tr>
<td>8 Command</td>
<td>Issue an IMS Command as part of the Resource Update List</td>
</tr>
<tr>
<td>9 Randomizer</td>
<td>Reload a DEDB Randomizer Routine</td>
</tr>
<tr>
<td>A ACB</td>
<td>Reload an IMS ACBLIB member (PSB or DBD)</td>
</tr>
</tbody>
</table>

Action ==> (for Resource types 1, 2, 3, and 4 only)
1 UPDATE | Modify an existing IMS definition |
2 ADD | Add a new IMS definition |
3 DELETE | Delete an existing IMS definition |
4 RENAME | Rename an existing IMS definition |

Name ==> (Optional) Name of existing resource. For an ADD request, this name will be used as a model for the resource to be added.
```

*Figure 81. Edit a Resource Update List panel*

To add a new entry to the resource update list, you must select the resource type, the action to perform (depending on the resource type chosen), and optionally a resource name.

First you must select the resource type to be acted upon. There are several types of resources from which to choose. You can select an IMS sysgen resource: database, program, transaction, or route code. For an IMS Version 9 or earlier IMS environment, there are also several IMS security gen resources, including AGN, TCOMMAND, and terminal security. There is also an option to include an IMS command as part of the installation of a resource update list. Finally, there are two additional resource types that allow changes to non-sysgen resources. You can reload a DEDB randomizer load module or reload an ACBLIB member (PSB or DBD).

If you select an IMS Sysgen resource (DATABASE, PROGRAM, TRAN, or RTCODE), you must select the action to perform. You can select UPDATE to update an existing resource definition, ADD, to add a new resource definition, DELETE, to delete an existing definition, or RENAME to change the name of an existing resource.

If you select an IMS security gen resource (AGN, TCOMMAND, or TERMSEC), you need not specify an action. The action to be performed is always an update to the security definition. If you select the COMMAND option, you need not specify an action because the command is the action that will be performed. In addition, the actions of the randomizer reload and ACB reload always update existing resources.

Optionally, you can specify a resource name. Depending on the action that you select, the name is used as follows:
Update
The name of the resource to be updated. You can also enter this name while you are editing the attribute values for the resource.

Add
The name of an existing resource whose definition will be used to initially populate the attribute values of the resource to be added. If not specified on this panel, you can use the COPY command on the resource definition screen (for example, on the panel shown in Figure 82) to populate attribute values from an existing resource definition.

Delete
The name of the resource to be deleted. You can also enter this name while you are editing the attribute values for the resource.

Rename
The name of the existing resource that is to be renamed. You can also enter the resource name while you are editing the attribute values for the resource.

Specifying attribute values
Attribute value specifications for an IMS resource are specified when a resource update list entry is edited.

Figure 82 shows a typical panel for specifying how a resource definition would be changed. The example shows a resource update list entry that changes the definition of program DFSSAM01 from schedule type serial to schedule type parallel. The Current column shows the current definition of the program, while the New column shows what the value will be after the resource update list is installed. The Parameter column shows the IMS sysgen macro keyword parameter, documented in the IMS Installation for your installed version of IMS, which provides a reference for further information about the parameter. Additional information about each parameter is also available by placing the cursor in the New column for a parameter, and pressing the Help key (usually, PF1).

Note that, depending on your installation options (IMS HP Sysgen Tools Profile and User definitions), some resource attributes may be protected. If your administrator has chosen to restrict access to some resource attributes, those attribute fields will show on the panel as display only fields which means the fields cannot be updated. In addition, the value that is displayed in the New column is the default value specified for your user profile and cannot be changed.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>New</th>
<th>Current</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSB Name</td>
<td>DFSSAM01</td>
<td>DFSSAM01</td>
<td>PSB (or GPSB) Name</td>
</tr>
<tr>
<td>RESIDENT</td>
<td>NO</td>
<td>NO</td>
<td>PSB to remain resident in storage (YES or NO)</td>
</tr>
<tr>
<td>DOPT</td>
<td>NO</td>
<td>NO</td>
<td>Reload PSB for each execution (YES or NO)</td>
</tr>
<tr>
<td>GPSB</td>
<td>NO</td>
<td>NO</td>
<td>Generic PSB (YES or NO)</td>
</tr>
<tr>
<td>FPATH</td>
<td>NO</td>
<td>NO</td>
<td>Fast Path Exclusive Program (YES or NO)</td>
</tr>
<tr>
<td>LANG</td>
<td>GPSB Language (ASSEM, COBOL, PASCAL, PL/I, JAVA)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PGMOTYPE</td>
<td>BATCH</td>
<td>BATCH</td>
<td>Program Type (BATCH or TP)</td>
</tr>
<tr>
<td>SCHDTYP</td>
<td>PARALLEL</td>
<td>SERIAL</td>
<td>Schedule Type (SERIAL or PARALLEL)</td>
</tr>
</tbody>
</table>

Figure 82. Edit a Resource Update List panel
Each time a Resource List Entry is edited, the current definitions are retrieved from the IMS control region. Thus, the current definitions are always the actual values in use by IMS.

You can use the New column to specify values that determine how the resource definition will be changed. The values are checked to verify that they are valid IMS values, but they are not validated for any specific IMS control region environment. For example, the value for the FPATH parameter could be changed to YES, which would be accepted as valid input. But, when the resource update list is verified, the entry would be rejected if Fast Path is not defined in that IMS control region. Similarly, JAVA could be specified for the LANG parameter, but if the resource update list is checked against an IMS Version 7 subsystem, the value will be rejected as invalid for that IMS release.

In summary, values entered on the panel are only checked for syntax validity when editing the list entry. Validation for a specific IMS subsystem environment is not done until the resource update list is verified.

**Updating database entries**

Each database list entry panel shows the current and/or new values for each parameter associated with an IMS sysgen database definition.

**Adding database definitions**

To add database definitions, use the Add Database Definition panel.

**About this task**

When an Add Database Definition is initially requested, the panel in Figure 83 is displayed.

Enter a value for the database name, and verify that the other parameter values are correct for this definition, or update the values as appropriate.

- Use the **COPY** command to change parameter values to match the values of an existing database definition.
- Press the Enter key to validate and refresh values on the panel. Press the End key (usually, PF3) to save the list entry and return to the display of all entries in the resource update list.
- Enter the **CANCEL** or **CAN** command to return to the display of all entries in the resource update list without saving the entry being viewed.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME</td>
<td>DBD</td>
<td>DBD name</td>
</tr>
<tr>
<td>RESIDENT</td>
<td>NO</td>
<td>DMB is retained in storage (NO or YES)</td>
</tr>
<tr>
<td>Access</td>
<td>EX</td>
<td>Subsystem access intent (RO, RD, UP, or EX)</td>
</tr>
</tbody>
</table>

*Figure 83. Add Database Definition panel*

The Add Database Definition panel uses the primary command, **COPY**. To update parameter values to those used by an existing resource of the same type, enter
COPY on the command line, followed by the name of an existing resource. For example, to update parameter values to those currently in use by the DI21PART database, you would enter:

COPY DI21PART

**Updating database definitions**

To update database definitions, use the Update Database Definition panel.

**About this task**

When an Update Database Definition is initially requested, the panel in [Figure 84](#) is displayed. Enter a database name to populate the current values column and to set the Update values column to the current values. If the database name is later changed, the Current and Update values will both be reset to the current values of the parameters.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Update</th>
<th>Current</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME</td>
<td></td>
<td>DI21PART</td>
<td>DBD name</td>
</tr>
<tr>
<td>RESIDENT</td>
<td>NO</td>
<td>NO</td>
<td>DMB is retained in storage (NO or YES)</td>
</tr>
<tr>
<td>Access</td>
<td>UP</td>
<td>UP</td>
<td>Subsystem access intent (RO, RD, UP, or EX)</td>
</tr>
</tbody>
</table>

*Figure 84. Update Database Definition panel (1 of 2)*

After a valid database name is entered, the values in the Current and Update columns are displayed as shown in [Figure 85](#). After the name is entered, you can use the COPY command to change values in the Update column to match values in use by another existing database. You should then update any values that are to be changed and save the list entry by pressing the End key (usually, PF3).

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Update</th>
<th>Current</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME</td>
<td>DI21PART</td>
<td>DI21PART</td>
<td>DBD name</td>
</tr>
<tr>
<td>RESIDENT</td>
<td>NO</td>
<td>NO</td>
<td>DMB is retained in storage (NO or YES)</td>
</tr>
<tr>
<td>Access</td>
<td>UP</td>
<td>UP</td>
<td>Subsystem access intent (RO, RD, UP, or EX)</td>
</tr>
</tbody>
</table>

*Figure 85. Update Database Definition panel (2 of 2)*

The Update Database Definition panel uses the primary command, **COPY**. To update parameter values to those used by an existing resource of the same type, enter **COPY** on the command line, followed by the name of an existing resource. For example, to update parameter values to those currently in use by the DI21PART database, you would enter:

COPY DI21PART
Deleting database definitions
To delete database definitions, use the Delete Database Definition panel.

About this task
The initial Delete Database Definition panel allows you to enter a database name that is to be deleted. An example of the panel is shown in Figure 86.

![Delete Database Definition panel (1 of 2)](image1)

To populate current system definition parameter values for the database, you would enter a database name. With the exception of the database name, you cannot change these values. If the database name is changed, the values are updated on the panel when the Enter key is pressed. The following figure shows an example of a populated panel:

![Delete Database Definition panel (2 of 2)](image2)

Renaming database definitions
To rename database definitions, use the Rename Database Definition panel.

About this task
The initial Rename Database Definition panel (if you do not include a database name on the panel shown in Figure 81 on page 125) allows you to enter the name of an existing database that is to be renamed. An example of the panel is shown in the following figure:
To populate current system definition parameter values for the database, enter the name of the database to be renamed. When the database name is entered or changed, values in the Current column are updated when the Enter key is pressed. The following figure shows an example of a populated panel:

![Figure 88. Rename Database Definition panel (1 of 2)](image)

After the current database attributes are populated, you must enter the new name for the specified database, and you can enter changes for the other attribute values, such as RESIDENT or ACCESS. After the new name and any attribute value changes have been entered, pressing the End key (usually PF3), saves the information and returns you to the list of resource update list entries.

**Special considerations for databases**

The RESIDENT parameter can be changed, and a database with RESIDENT attribute can be added, but the DMB will not be loaded to the resident DMB pool until IMS is shut down and restarted. This is because resident databases have DMBs loaded only at IMS initialization time and cannot be added to the resident DMB pool while IMS is running.

The ACCESS= parameter can be changed for an existing database, but the updated value will not take effect until the next IMS cold start. HP Sysgen does not stop the database and issue the /START DB command with the ACCESS= parameter to cause the access intent to be changed. You must issue IMS commands /STOP DB and /START DB ACCESS=xx to cause the current access intent to be changed.

**Updating program entries**

Each program list entry panel shows the current and/or new values for each parameter associated with an IMS sysgen program definition (APPLCTN macro).
Adding program definitions
To add program definitions, use the Add Program Definition panel.

About this task
When an Add Program Definition is initially requested, the panel in Figure 90 is displayed.

Enter a value for the program name, and verify that the other parameter values are correct for this definition, or update the values as appropriate.
- Use the COPY command to change parameter values to match the values of an existing program definition.
- Press the Enter key to validate and refresh values on the panel. Press the End key (usually, PF3) to save the list entry and return to the display of all entries in the resource update list.
- Enter the CANCEL or CANCAN command to return to the display of all entries in the resource update list without saving the entry being viewed.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSB NAME</td>
<td></td>
<td>PSB (or GPSB) Name</td>
</tr>
<tr>
<td>RESIDENT</td>
<td>NO</td>
<td>PSB to remain resident in storage (NO or YES)</td>
</tr>
<tr>
<td>Access</td>
<td>EX</td>
<td>Subsystem access intent (RO, RD, UP, or EX)</td>
</tr>
<tr>
<td>DOPT</td>
<td>NO</td>
<td>Reload PSB for each execution (No or YES)</td>
</tr>
<tr>
<td>GPSB</td>
<td>NO</td>
<td>Generic PSB (NO or YES)</td>
</tr>
<tr>
<td>FPATH</td>
<td>NO</td>
<td>Fast Path Exclusive Program (YES or NO)</td>
</tr>
<tr>
<td>LANG</td>
<td>GPSB</td>
<td>Language (ASSEM, COBOL, PASCAL, PL/I, JAVA)</td>
</tr>
<tr>
<td>PGMTYPE</td>
<td>TP</td>
<td>Program Type (BATCH or TP)</td>
</tr>
<tr>
<td>SCHEDTYPE</td>
<td>SERIAL</td>
<td>Schedule Type (SERIAL or PARALLEL)</td>
</tr>
</tbody>
</table>

Figure 90. Add Program Definition panel

The Add Program Definition panel uses the primary command, COPY. To update parameter values to those used by an existing program, enter COPY on the command line, followed by the name of an existing program. For example, to update parameter values to those currently in use by the DFSSAM02 program, you would enter:
COPY DFSSAM02

Updating program definitions
To update program definitions, use the Update Program Definition panel.

About this task
When a Update Program Definition is initially requested, the panel in Figure 91 on page 132 is displayed. Enter a program name to populate the Current values column and to set the Update values column to the current values. If the program name is later changed, the Current and Update values will both be reset to the current values of the parameters.
After a valid program name is entered, the values in the Current and Update columns are displayed as shown in Figure 92. After entering the name, you can use the COPY command to change values in the Update column to match values in use by another existing program. You should then update any values that are to be changed and save the list entry by pressing the End key (usually, PF3).

The Update Program Definition panel uses the primary command, COPY. To update parameter values to those used by an existing program, enter COPY on the command line, followed by the name of an existing program. For example, to update parameter values to those currently in use by the DFSSAM02 program, you would enter:

COPY DFSSAM02

Deleting program definitions
To delete program definitions, use the Delete Program Definition panel.

About this task
The initial Delete Program Definition panel allows you to enter a program name that is to be deleted. An example of the panel is shown in the following figure:
To populate current system definition parameter values for the program, you would enter a program name. With the exception of the program name, you cannot change these values. If the program name is changed, the values are updated on the panel when the Enter key is pressed. The following figure is an example of a populated panel:

![Figure 93. Delete Program Definition panel (1 of 2)](image1)

Renaming program definitions

To rename program definitions, use the Rename Program Definition panel.

About this task

The initial program rename panel (if you do not include a program name on the panel shown in Figure 81 on page 125) allows you to enter the name of an existing program which is to be renamed. An example of this panel is shown in the following figure:

![Figure 94. Delete Program Definition panel (2 of 2)](image2)
To populate current system definition parameter values for the program, enter the name of the program to be renamed. When the program name is entered or changed, values in the Current column are updated when the Enter key is pressed. The following figure is an example of a populated panel.

After the program attributes are populated, you must enter the new name for the specified program, and you can enter changes for other attribute values, such as RESIDENT or DOPT. After the new name and any attribute value changes have been entered, pressing the End key (usually PF3) saves the information and returns you the list of resource update list entries.

Note that when you rename a program definition, all transaction and route code definitions associated with the old program name are changed so that they are associated with the new program name when the resource update list is installed.

**Special considerations for programs**

- The RESIDENT parameter can be changed, and a program with RESIDENT attribute can be added, but the PSB will not be loaded to the resident PSB pool until IMS is shut down and restarted. This is because resident programs have PSBs loaded only at IMS initialization time and cannot be added to the resident PSB pool while IMS is running.
In IMS systems that use an ACBLIB, changing the value of the GPSB attribute also requires that an online change for the IMS ACBLIB be performed to implement the change.

The SYSID parameter permitted in the IMS sysgen macro definition is not permitted in HP Sysgen. A remote PSB definition does not generate any control blocks; it is used only to provide default values for the SYSID parameter on all transaction codes associated with the program. HP Sysgen requires that all SYSID values be explicitly defined for each transaction.

**Updating transaction code entries**

Each transaction list entry panel shows the current and/or new values for each parameter associated with an IMS sysgen transaction definition (TRANSACT macro).

**Adding transaction definitions**

To add transaction definitions, use the Add a Transaction Definition panel.

**About this task**

When an Add Transaction Definition is initially requested, the panel in Figure 97 on page 136 is displayed.

Enter a value for the transaction code, and verify that the other parameter values are correct for this definition, or update the values as appropriate.

- Use the COPY command to change parameter values to match the values of an existing transaction definition.
- Press the Enter key to validate and refresh values on the panel. Press the End key (usually, PF3) to save the list entry and return to the display of all entries in the resource update list.
- Enter the CANCEL or CAN command to return to the display of all entries in the resource update list without saving the entry being viewed.
The Add a Transaction Definition panel uses the primary command, COPY. To update parameter values to those used by an existing transaction, enter COPY on the command line, followed by the name of an existing transaction. For example, to update parameter values to those currently in use by transaction PART, you would enter:

COPY PART

**Updating transaction definitions**

To update transaction definitions, use the Update a Transaction Definition panel.

**About this task**

When a Update a Transaction Definition is initially requested, the panel in Figure 98 on page 137 is displayed. Enter a transaction code to populate the Current values column and to set the Update values column to the current values. If the transaction code is later changed, the Current and Update values will both be reset to the current values of the parameters.
After a valid transaction code is entered, the values in the Current and Update columns are displayed as shown in Figure 99 on page 138. After entering the transaction code, you can use the COPY command to change values in the Update column to match values in use by another existing transaction. You should then update any values that are to be changed and save the list entry by pressing the End key (usually, PF3).

---

**Figure 98. Update a transaction definition panel (1 of 2)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Current Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tran Code</td>
<td>Transaction Code</td>
<td></td>
</tr>
<tr>
<td>PSB Name</td>
<td>Associated PSB Name</td>
<td></td>
</tr>
<tr>
<td>DCLWA</td>
<td>DC Log Write Ahead (YES or NO)</td>
<td></td>
</tr>
<tr>
<td>Edit Case</td>
<td>Upper Case (UC) or Upper/Lower Case (ULC)</td>
<td></td>
</tr>
<tr>
<td>EDIT Name</td>
<td>Transaction Edit Routine Module Name</td>
<td></td>
</tr>
<tr>
<td>FPATH</td>
<td>Fast Path Specification (NO, YES or 12-30720)</td>
<td></td>
</tr>
<tr>
<td>INQUIRY</td>
<td>Inquiry Mode (NO or YES)</td>
<td></td>
</tr>
<tr>
<td>RECOVER</td>
<td>Recoverable Transaction (RECOVER or NORECOV)</td>
<td></td>
</tr>
<tr>
<td>MAXRGN</td>
<td>Maximum regions (0-255)</td>
<td></td>
</tr>
<tr>
<td>MODE</td>
<td>Mode (SGL or MULT)</td>
<td></td>
</tr>
<tr>
<td>MSGTYPE</td>
<td>Segments (SGLSEG or MULTSEG)</td>
<td></td>
</tr>
<tr>
<td>RESPONSE</td>
<td>Response mode (NO or YES)</td>
<td></td>
</tr>
<tr>
<td>CLASS</td>
<td>Transaction Class (1-999)</td>
<td></td>
</tr>
<tr>
<td>PARLIM</td>
<td>Parallel Limit Count (NONE or 0-32767)</td>
<td></td>
</tr>
<tr>
<td>COUNT</td>
<td>PROCLIM Count (0-65535)</td>
<td></td>
</tr>
<tr>
<td>SECONDS</td>
<td>PROCLIM Time (0-65535)</td>
<td></td>
</tr>
<tr>
<td>PRIORITY1</td>
<td>Normal Priority (0-14)</td>
<td></td>
</tr>
<tr>
<td>PRIORITY2</td>
<td>Limit Priority (0-14)</td>
<td></td>
</tr>
<tr>
<td>PRIORITY3</td>
<td>Limit Count (1-65535)</td>
<td></td>
</tr>
<tr>
<td>ROUTING</td>
<td>Routing (NO or YES)</td>
<td></td>
</tr>
<tr>
<td>SCHD</td>
<td>Scheduling Option (1-4)</td>
<td></td>
</tr>
<tr>
<td>SEGNO</td>
<td>Number of Output Segments (0-65535)</td>
<td></td>
</tr>
<tr>
<td>SEGSIZE</td>
<td>Size of Output Segments (0-65535)</td>
<td></td>
</tr>
<tr>
<td>SERIAL</td>
<td>Serial Processing of Input Messages (NO or YES)</td>
<td></td>
</tr>
<tr>
<td>SPA SIZE</td>
<td>SPA Size (blank or 16-32767)</td>
<td></td>
</tr>
<tr>
<td>SPA TYPE</td>
<td>SPA Truncation Option (blank, RTRUNC, STRUNC)</td>
<td></td>
</tr>
<tr>
<td>RMT SYSID</td>
<td>Remote SYSID (blank or 1-2036)</td>
<td></td>
</tr>
<tr>
<td>LCL SYSID</td>
<td>Local SYSID (blank or 1-2036)</td>
<td></td>
</tr>
<tr>
<td>WFI</td>
<td>Wait for Input (NO or YES)</td>
<td></td>
</tr>
<tr>
<td>AOI</td>
<td>Automated Operator (NO, YES, TRAN, CMD)</td>
<td></td>
</tr>
</tbody>
</table>
The Update a Transaction Definition panel uses the primary command, COPY. To update parameter values to those used by an existing transaction, enter COPY on the command line, followed by the name of an existing transaction. For example, to update parameter values to those currently in use by transaction PART, you would enter:

```
COPY PART
```

### Deleting transaction definitions

To delete transaction definitions, use the Delete Transaction Definition panel.

### About this task

The initial Delete Transaction Definition panel allows you to enter a transaction code that is to be deleted. An example of the panel is shown in the following figure:

```
EDIT IMS HP Syggen Tools - Update a Transaction Definition
Command ==> ______________________

Primary Commands:
COPY Copy Attributes from an Existing Transaction Definition

+-----------------+-----------------+-------------------+-------------------+
| Parameter       | Value           | Current           | Description       |
| Tran Code       | PART            | PART              | Transaction Code  |
| PSB Name        | DFSSAM02        | DFSSAM02          | Associated PSB Name |
| DCLWA           | YES             | YES               | DC Log Write Ahead (YES or NO) |
| Edit Case       | UC              | UC                | Upper Case (UC) or Upper/Lower Case (ULC) |
| EDIT Name       |                 |                   | Transaction Edit Routine Module Name |
| FPATH           | NO              | NO                | Fast Path Specification (NO, YES or 12-30720) |
| INQUIRY         | YES             | YES               | Inquiry Mode (NO or YES) |
| RECOVER         | NO              | NO                | Recoverable Transaction (RECOVER or NORECOV) |
| MAXRGN          | 0               | 0                 | Maximum regions (0-255) |
| MODE            | SGNL            | SGNL              | Mode (SGNL or MULT) |
| MSGTYPE         | SGNLSEG         | SGNLSEG           | Segments (SGNLSEG or MULTSEG) |
| RESPONSE        | NO              | NO                | Response mode (NO or YES) |
| CLASS           | 1               | 1                 | Transaction Class (1-999) |
| PARLIM          | NONE            | NONE              | Parallel Limit Count (NONE or 0-32767) |
| COUNT           | 65535           | 65535             | PROCLIM Count (0-65535) |
| SECONDS         | 65535           | 65535             | PROCLIM Time (0-65535) |
| PRIORITY1       | 7               | 7                 | Normal Priority (0-14) |
| PRIORITY2       | 10              | 10                | Limit Priority (0-14) |
| PRIORITY3       | 2               | 2                 | Limit Count (1-65535) |
| ROUTING         | NO              | NO                | Routing (NO or YES) |
| SCHD            | 1               | 1                 | Scheduling Option (1-4) |
| SEGNO           | 0               | 0                 | Number of Output Segments (0-65535) |
| SEGSIZE         | 0               | 0                 | Size of Output Segments (0-65535) |
| SERIAL          | NO              | NO                | Serial Processing of Input Messages (NO or YES) |
| SPA SIZE        |                 |                   | SPA Size (blank or 16-32767) |
| SPA TYPE        |                 |                   | SPA Truncation Option (blank,RTRUNC,STRUNC) |
| RMT SYSID       |                 |                   | Remote SYSID (blank or 1-2036) |
| LCL SYSID       |                 |                   | Local SYSID (blank or 1-2036) |
| WFI             | NO              | NO                | Wait for Input (NO or YES) |
| AOI             |                 |                   | Automated Operator (NO,YES,TRAN, CMD) |
```

Figure 99. Update a transaction definition panel (2 of 2)
To populate current system definition parameter values for the transaction, you would enter a transaction code. With the exception of the transaction code, you cannot change these values. If the transaction code is changed, the values are updated on the panel when the Enter key is pressed. The following figure is an example of a populated panel:

![Delete transaction definition panel (1 of 2)](image)

Figure 100. Delete transaction definition panel (1 of 2)

To populate current system definition parameter values for the transaction, you would enter a transaction code. With the exception of the transaction code, you cannot change these values. If the transaction code is changed, the values are updated on the panel when the Enter key is pressed. The following figure is an example of a populated panel:
Renaming transaction definitions
To rename transaction definitions, use the Rename Transaction Definition panel.

About this task

The initial Rename Transaction Definition panel (if you do not include a transaction name on the panel shown in Figure 81 on page 125) allows you to enter the name of an existing transaction which is to be renamed. An example of the panel is shown in the following figure:

```
EDIT IMS HP Sysgen Tools - Delete Transaction Definition
Command ===>

Verify that the following transaction definition is to be deleted.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tran Code</td>
<td>PART</td>
<td>Transaction Code</td>
</tr>
<tr>
<td>PSB Name</td>
<td>DFSSAM02</td>
<td>Associated PSB Name</td>
</tr>
<tr>
<td>DCLWA</td>
<td>YES</td>
<td>DC Log Write Ahead</td>
</tr>
<tr>
<td>Edit Case</td>
<td>UC</td>
<td>Upper Case or Upper/Lower Case</td>
</tr>
<tr>
<td>EDIT Name</td>
<td></td>
<td>Transaction Edit Routine Module Name</td>
</tr>
<tr>
<td>FPATH</td>
<td>NO</td>
<td>Fast Path Specification</td>
</tr>
<tr>
<td>INQUIRY</td>
<td>YES</td>
<td>Inquiry Mode</td>
</tr>
<tr>
<td>RECOVER</td>
<td>NORECOV</td>
<td>Recoverable Transaction</td>
</tr>
<tr>
<td>MAXRGN</td>
<td>0</td>
<td>Maximum regions</td>
</tr>
<tr>
<td>MODE</td>
<td>SNGL</td>
<td>Mode</td>
</tr>
<tr>
<td>MSGTYPE</td>
<td>SNGLSEG</td>
<td>Segments</td>
</tr>
<tr>
<td>RESPONSE</td>
<td>NO</td>
<td>Response mode</td>
</tr>
<tr>
<td>CLASS</td>
<td>1</td>
<td>Transaction Class</td>
</tr>
<tr>
<td>PARLIM</td>
<td>NONE</td>
<td>Parallel Limit Count</td>
</tr>
<tr>
<td>COUNT</td>
<td>65535</td>
<td>PROCLIM Count</td>
</tr>
<tr>
<td>SECONDS</td>
<td>65535</td>
<td>PROCLIM Time</td>
</tr>
<tr>
<td>PRIORITY1</td>
<td>7</td>
<td>Normal Priority</td>
</tr>
<tr>
<td>PRIORITY2</td>
<td>10</td>
<td>Limit Priority</td>
</tr>
<tr>
<td>PRIORITY3</td>
<td>2</td>
<td>Limit Count</td>
</tr>
<tr>
<td>ROUTING</td>
<td>NO</td>
<td>Routing</td>
</tr>
<tr>
<td>SCHD</td>
<td>1</td>
<td>Scheduling Option</td>
</tr>
<tr>
<td>SEGNO</td>
<td>0</td>
<td>Number of Output Segments</td>
</tr>
<tr>
<td>SEGSIZE</td>
<td>0</td>
<td>Size of Output Segments</td>
</tr>
<tr>
<td>SERIAL</td>
<td>NO</td>
<td>Serial Processing of Input Messages</td>
</tr>
<tr>
<td>SPA SIZE</td>
<td>SPA</td>
<td>SPA Size</td>
</tr>
<tr>
<td>SPA TYPE</td>
<td>blank,RTRUNC,STRUNC</td>
<td>SPA Truncation Option</td>
</tr>
<tr>
<td>RMT SYSID</td>
<td></td>
<td>Remote SYSID</td>
</tr>
<tr>
<td>LCL SYSID</td>
<td></td>
<td>Local SYSID</td>
</tr>
<tr>
<td>WFI</td>
<td>NO</td>
<td>Wait for Input</td>
</tr>
<tr>
<td>AOI</td>
<td>Automated Operator (NO,YES,TRAN, CMD)</td>
<td></td>
</tr>
</tbody>
</table>
```

Figure 101. Delete transaction definition panel (2 of 2)
To populate current system definition parameter values for the transaction, enter the name of the transaction code that is to be renamed. When the transaction name is entered or changed and the Enter key is pressed, the values in the Current column are updated. The following figure is an example of a populated panel:

**Figure 102. Rename Transaction Definition panel (1 of 2)**

To populate current system definition parameter values for the transaction, enter the name of the transaction code that is to be renamed. When the transaction name is entered or changed and the Enter key is pressed, the values in the Current column are updated. The following figure is an example of a populated panel:
After the current transaction attributes are populated, you must enter the new name for the specified transaction, and you can enter changes for the other attribute values, such as PSB Name or DCLWA. After the new name and any attribute value changes have been entered, pressing the End key (usually, PF3) saves the information and returns you to the list of resource update list entries.

### Updating route code entries

Each program list entry panel shows the current and/or new values for each parameter associated with an IMS sysgen program definition (APPLCTN macro).

### Adding route code definitions

To add route code definitions, use the Add Route Code Definition panel.

### About this task

When a Add Route Code Definition is initially requested, the panel in Figure 104 on page 143 is displayed.

Enter a value for the route code, and verify that the other parameter values are correct for this definition, or update the values as appropriate.

- Use the COPY command to change parameter values to match the values of an existing route code definition.

**Figure 103. Rename Transaction Definition panel (2 of 2)**

After the current transaction attributes are populated, you must enter the new name for the specified transaction, and you can enter changes for the other attribute values, such as PSB Name or DCLWA. After the new name and any attribute value changes have been entered, pressing the End key (usually, PF3) saves the information and returns you to the list of resource update list entries.
• Press the Enter key to validate and refresh values on the panel. Press the End key (usually, PF3) to save the list entry and return to the display of all entries in the resource update list.

• Enter the CANCEL or CAN command to return to the display of all entries in the resource update list without saving the entry being viewed.

The Add Route Code Definition panel uses the primary command, COPY. To update parameter values to those used by an existing route code, enter COPY on the command line, followed by the name of an existing route code. For example, to update parameter values to those currently in use by the DFSIVD route code, you would enter:

COPY DFSIVD

Updating route code definitions
To update route code definitions, use the Update Route Code Definition panel.

About this task
When a Update Route Code Definition is initially requested, the panel in [Figure 105] is displayed. Enter a route code to populate the Current values column and to set the Update values column to the current values. If the route code is later changed, the Current and Update values will both be reset to the current values of the parameters.

After a valid route code is entered, the values in the Current and Update columns are displayed as shown in [Figure 106 on page 144]. After entering the route code, you can use the COPY command to change values in the Update column to match values in use by another existing route code. You should then update any values that are to be changed and save the list entry by pressing the End key (usually, PF3).
The Update Route Code Definition panel uses the primary command, COPY. To update parameter values to those used by an existing route code, enter COPY on the command line, followed by the name of an existing route code. For example, to update parameter values to those currently in use by the DFSIVD route code, you would enter:

COPY DFSIVD

### Deleting route code definitions

To delete route code definitions, use the Delete Route Code Definition panel.

### About this task

The initial Delete Route Code Definition panel allows you to enter a route code that is to be deleted. An example of the panel is shown in the following figure:

![Edit IMS HP Sysgen Tools - Delete Route Code Definition](image)

**Figure 107. Delete route code definition panel**

To populate current system definition parameter values for the route code, you would enter a valid route code. With the exception of the route code, you cannot change these values. If the route code is changed, the values are updated on the panel when the Enter key is pressed. The following figure is an example of a populated panel:

![Edit IMS HP Sysgen Tools - Delete Route Code Definition](image)

**Figure 108. Delete route code definition panel (2 of 2)**
Renaming route code definitions

To rename route code definitions, use the Rename Route Code Definition panel.

About this task

The initial Rename Route Code Definition panel (if you do not include a route code name on the panel shown in Figure 81 on page 125) allows you to enter the name of an existing route code which is to be renamed. An example of the panel is shown in the following figure:

![Rename Route Code Definition panel (1 of 2)](image)

To populate current system definition parameter values for this route code, enter the name of the route code which is to be renamed. When the route code name is entered or changed, the values in the Current column are updated. The following figure is an example of a populated panel:

![Rename Route Code Definition panel (2 of 2)](image)

After the current route code attributes are populated, you must enter the new name for the specified route code, and you can enter changes for the other attribute values, such as PSB Name or Inquiry. After the new name and any attribute value changes have been entered, pressing the End key (usually, PF3) saves the information and returns you to the list of resource update list entries.
Updating an AGN definition

When inserting a new resource update list entry, selecting resource type 5 allows you to make a change to an IMS Application Group Name (AGN) definition. AGN definitions are used to protect IMS resources using your z/OS security subsystem. You can restrict which user IDs are allowed to access specific program names, transaction codes, and logical terminal (LTERM) names.

AGN definitions allow you to group a set of IMS resource names into a single name for your security subsystem. These definitions are defined in the IMS security gen source, and are placed in the IMS MATRIX data set.

IMS HP Sysgen Tools allows you to update an AGN definition in order to add or delete a specific IMS resource name from the definition. To update an AGN definition, you select resource type 5 (AGN) from the Edit Resource Update List panel, as shown in Figure 81 on page 125. After selecting Option 5, you specify the AGN name, resource type, resource name, and action to be performed on the screen shown in the following figure:

On this panel, specify the following fields:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>______</td>
<td>AGN name</td>
</tr>
<tr>
<td>Action</td>
<td>_</td>
<td>A to ADD the resource name, D to DELETE the resource name</td>
</tr>
<tr>
<td>Type</td>
<td>_</td>
<td>Resource type (T=TRAN, P=PROGRAM, or L=LTERM)</td>
</tr>
<tr>
<td>Resource</td>
<td>______</td>
<td>Resource name</td>
</tr>
</tbody>
</table>

Figure 111. Update AGN definition panel

On this panel, specify the following fields:

Name  The name of an existing AGN, as defined in your IMS security gen source. The name is verified for the target IMS subsystem when you enter the value.

Action  Enter either A to add a new resource name to this AGN, or D to delete an existing resource that is defined in the AGN.

Type  The resource type. Enter T for a transaction, P for a program, or L for an LTERM name.

Resource  The name of the transaction, program, or LTERM name to be added or deleted from the AGN. The resource name is checked when you press the Enter key. If you requested a DELETE, the resource name must be defined in the AGN. If you requested an ADD, the resource name must not already be defined in the AGN. If the existing definition of the AGN specifies ALL for this type of resource (for example, AGLTERM ALL), you cannot add or delete a specific entry from the list. When you press Enter, the AGN definition is checked to ensure that ALL was not specified.

Updating transaction command SMU security

When inserting a new resource update list entry, selecting resource type 6 allows you to make a change to the IMS command security defined for a transaction. This
is the IMS type 1 command security which provides access to the IMS CMD and GCMD calls, as defined in the IMS security gen source using the TCOMMAND and CTRANS statements.

**About this task**

This transaction command security should not be confused with IMS security for ICMD and RCMD calls, which is based on z/OS security subsystem, or the AOI= parameter that can be specified on the TRANSACT macro in IMS Version 9 and later.

IMS HP Sysgen Tools allows you to update IMS SMU TCOMMAND security definitions. To update a TCOMMAND definition, select resource type 6 (TCOMMAND) from the Edit Resource Update List panel, as shown in Figure 81 on page 128. After selecting option 6, specify the transaction code to be updated. The current IMS TCOMMAND security specifications are displayed, as shown in Figure 112 on page 148. This panel contains the same commands found on the Edit Resource Update List panel plus additional commands. Use the ISPF Up and Down commands (typically PF7 and PF8) to scroll through all the IMS commands.

All the listed IMS commands may not be available for a specific release of IMS. For example, the /DIAGNOSE command was introduced in IMS Version 8. Any value that you enter for the /DIAGNOSE command for an IMS Version 7 system or earlier will be ignored. In such a case, the description for a command indicates that it is not available for specific releases of IMS.

The panel also shows which commands are authorized for the specified transaction code. A slash is displayed in the Current column for every authorized transaction command. You can update the New column with a non-blank value to authorize the transaction for a command. To remove security for a command, simply change the slash in the New column to a blank.

You can copy the TCOMMAND security specification of an existing transaction code using the **COPY** command. Just enter the **COPY** command, followed by the transaction code from which security is to be copied on the command line. The New column is updated to reflect the authorization provided for the transaction code specified in the **COPY** command.
Updating IMS terminal SMU security

When inserting a new resource update list entry, selecting resource type 7 allows you to make a change to IMS terminal security.

About this task

IMS terminal security is specified in your IMS security gen source, and provides the ability to restrict access to IMS transactions and commands to a limited number of static IMS LTERM names. Note that this does not affect any dynamic ETO terminals, which are typically secured using your z/OS security subsystem.

Terminal security defines which IMS commands and transactions are protected. If a transaction or command is not currently protected, allowing one specific LTERM to access the resource causes all other LTERMs to be disallowed from the resource. For this reason, IMS HP Sysgen Tools does not allow you to define security for a transaction code or command that is not currently protected. To define security for a currently unprotected transaction or command, or to remove all security from a transaction or command, you should update your IMS security gen source, perform a security gen, and implement the updated security using IMS online change.

IMS HP Sysgen Tools allows you to update IMS terminal security definitions to allow or disallow access to a resource from a specified LTERM name. To update IMS terminal security, select resource type 7 (TERMSEC) from the Edit Resource Update List panel, as shown in Figure 81 on page 125. After selecting option 7, specify the LTERM name, action, and resource name for which security will be updated. The IMS terminal security panel is shown in Figure 113 on page 149.
Fields to be completed are:

**Name**  The name of an existing static LTERM name, as defined in your IMS sysgen source. The name is verified for the target IMS subsystem when you enter the value.

**Action**  Enter either A to allow access or D to disallow access for the specified LTERM name.

**Resource**  The name of the transaction or command for which access is to be allowed or disallowed. The transaction code or command name is checked to ensure it is valid in the target IMS system. For an IMS command, specify a slash and the first three letters of the command; for example, /DIS.

### Issuing an IMS command in a resource update list

When inserting a new resource update list entry, selecting resource type 8 allows you to process an IMS command as part of the installation of the resource update list.

**About this task**

The order of entries in a resource update list does not define the order used when installing the resource update list. Instead, IMS command entries allow you to specify whether to run the IMS command before or after IMS HP Sysgen Tools installs other changes defined by resource update list entries.

If IMS commands are to be run before other resource updates, they are run immediately after the resource update list is verified. If they are to be run after other resource updates, they are run after changes in all other types of update list entries have been installed. This would happen after all IMS resource updates and security updates, as well as after any IMS ACBLIB reload requests.

If installation of a resource update list fails during resource updates, online changes, or reloads, IMS commands specified to run after resource updates are still processed after the failure occurs. If a failure occurs before any “before” IMS commands are issued, none of the “after” IMS commands are processed. The intent is to either run none of the IMS commands or all the IMS commands.

The following panel shows the fields you use to insert a new resource update list entry.
Fields to be completed are:

**Sequence**
Defines whether the command will be processed BEFORE other resource updates, or AFTER other resource updates.

**Command**
The IMS commands to be processed. Only type 1 commands are supported. The command must start with a slash (/).

### Loading a DEDB randomizer
IMS HP Sysgen Tools provides an automated way to reload a Fast Path Data Entry Database (DEDB) randomizer module.

**About this task**
IMS provides the capability to reload a DEDB randomizer; specifically, after all databases using the randomizer are processed by the /DBR command, IMS recognizes that the randomizer is no longer in use and deletes it from memory. Subsequently, when one of the databases using the randomizer is started, IMS loads the new version of the randomizer module from the IMS control region STEPLIB.

IMS HP Sysgen Tools automates the process of performing /DBR of all databases that use the specified randomizer name and then automates the startup of the databases as well as any areas associated with the databases that were available before the /DBR was initiated.

In order to reload a DEDB randomizer module, you should first review which databases will be impacted when the randomizer is reloaded. You can use IMS HP Sysgen Tools Option 1 to view a list of all DEDB randomizer module names, and which databases use each randomizer name. When the resource update list is installed, all the listed databases are taken offline, which makes them unavailable to any IMS application programs. You should carefully consider the impact before performing the install of a resource update list that includes a reload DEDB randomizer entry.

Remember that the updated DEDB randomizer load module must be copied into the IMS control region STEPLIB before the resource update list is installed. Also, note that IMS HP Sysgen Tools takes no action until the resource update list is installed.

To create a resource update list entry to perform a DEDB randomizer reload:
1. Insert a new entry into a resource update list.
2. Select resource type 9 on the Edit Resource Update List panel shown in Figure 81 on page 125.
3. Specify the randomizer load module name in the name field.
4. Enter the randomizer name on the panel that appears next (the Reload DEDB Randomizer entry panel shown in Figure 115).

The name of the DEDB randomizer load module is **requir**. If you specified this name on the panel in Figure 81 on page 125, the name is automatically populated to the Reload DEDB Randomizer panel.

### Reloading an ACBLIB member

You can dynamically reload a specific ACBLIB member into the PSB or DMB pool of the IMS control region, without locating all changed ACBLIB members and reloading them.

IMS HP Sysgen Tools provides two methods for reloading an ACBLIB member:
- The HP Sysgen ACB reload method involves copying the ACBLIB member to the active ACBLIB, and might not require any changes to the IMS environment.
- The IMS ACB member level global online change method might require changes to the IMS environment, but it also provides additional capabilities that HP Sysgen ACB reload does not offer. For example, you can reload database definitions (DBD) for Data Entry Databases (DEDB) and if a DBD is updated, all PSBs that are affected by the DBD change can be automatically reloaded.

You can also activate a pending ACB in the IMS directory staging data set and load it into the PSB or DMB pool of the IMS control region.

IMS HP Sysgen Tools provides the IMS Managed ACB Activate method for activating pending ACBs in the IMS directory staging data set. The IMS Managed ACB Activate method might require changes to the IMS environment.

### Reloading an ACBLIB member by using HP Sysgen ACB reload

You can use HP Sysgen ACB reload to reload a single updated PSB or DBD.

**About this task**

**Restriction:** Fast Path database DBDs cannot be reloaded.

All releases of IMS are supported by the HP Sysgen ACB reload method.

**Procedure**

To reload an ACBLIB member:

1. Request an ACB reload by adding an entry to a resource update list. In the panel shown in Figure 81 on page 125, use option A to insert a new resource update list entry.
2. Create an entry in a resource update list. To use the HP Sysgen reload option, specify the following:
   a. For the Process field, select 1 (HP Sysgen ACB Reload).
   b. For the PSB's field, you must select N because HP Sysgen ACB reload does not support automatic reloading of a PSB that is affected by a DBD change.

3. Copy the updated ACB member to the active ACBLIB, and install the resource update list to reload the ACBLIB member specified in the resource update list.

**Reloading an ACBLIB member by using IMS member level global online change**

You can use IMS member level global online change to reload a single updated PSB or DBD.

**Before you begin**

For information about the prerequisites for the following procedure, see "Enabling the use of IMS ACB member level global online change" on page 67.

**Procedure**

To reload an ACBLIB member:

1. Request an ACB reload by adding an entry to a resource update list. In the panel shown in Figure 81 on page 125, use option A to insert a new resource update list entry.
2. Create an entry in a resource update list to reload an ACB.
   a. For the Process field, select 2 (IMS Member Level Global Online Change).
   b. For the PSB's field, specify either Y or N.

      The use of the PSB's field only applies when the TYPE field specifies that a
      DBD is to be reloaded. This field is used to populate the NAMEONLY parameter of
      the INITIATE OLC PHASE(PREPARE)TYPE(ACBMBR) command.

      | N  | If you specify N, IMS tries to reload only the specified DBD, and does not reload any PSB that has access to the specified DBD.
      | Y  | If you specify Y, IMS reloads the specified DBD and every PSB that has access to that database.

3. Copy the updated ACB member to the staging ACBLIB, and install the resource update list to reload the ACBLIB member specified in the resource update list.

   **Important:** IMS HP Sysgen Tools does not stop a DBD or PSB before it is reloaded. You must verify that the DBD or PSB is not in use at the time the reload is performed.

   If an error occurs when installing a resource update list entry with an IMS member level global online change request, the IMS return codes and reason codes, along with any text associated with the error, are returned.

   For information about CSLOMCMDC request return and reason codes, see *IMS System Programming APIs*. For return and reason codes associated with commands in messages IOH4725E through IOH4728E, see *IMS Commands*.

**Activating a pending ACB member in IMS directory staging data set by using IMS Managed ACBs Activate**

You can use IMS Managed ACBs Activate to activate all pending PSBs and DBDs in the IMS directory staging data set.

**Before you begin**

For information about the prerequisites for the following procedure, see "Enabling the IMS Managed ACBs Activate method" on page 68.
Procedure

To reload an ACBLIB member:

1. Request an ACB reload by adding an entry to a resource update list. In the panel shown in Figure 81 on page 125 use option A to insert a new resource update list entry.

2. Create an entry in a resource update list to reload an ACB.
   a. For the **Process** field, select 3 (IMS managed ACBs Activate).
   b. Leave the **PSB’s** field blank.

3. Populate the updated ACB member to the IMS directory staging data set, and install the resource update list to activate the ACB member specified in the resource update list.

**Important:**
- IMS HP Sysgen Tools does not stop a DBD or PSB before it is reloaded. You must verify that the DBD or PSB is not in use at the time the reload is performed.
- If an IMS system that is configured as ACBSHR=Y is included in the target group, you cannot select option 3 for the **Process** field.

   If you specify an IMS system that is configured as ACBSHR=Y singly as the target IMSID, you can select option 3 for the **Process** field. In this case, however, the IMS type-2 **IMPORT DEFN SOURCE(CATALOG)** command is processed by all the IMS systems in the IMSplex that specify ACBSHR=Y.

   For detailed information about the **IMPORT DEFN SOURCE(CATALOG)** command, see **IMS Commands**.

   If an error occurs when installing a resource update list entry with an IMS Managed ACBs Activate request, the IMS return codes and reason codes, along with any text associated with the error, are returned.

   For information about CSLOMCMCD request return and reason codes, see **IMS System Programming APIs**. For return and reason codes associated with commands in messages IOH4725E through IOH4728E, see **IMS Commands**.

---

**Figure 118. Reload ACBLIB member panel**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>_____</td>
<td>Type of resource to be Reloaded (PSB or DBD)</td>
</tr>
<tr>
<td>Name</td>
<td>_____</td>
<td>Name of Resource to be Reloaded</td>
</tr>
<tr>
<td>Process</td>
<td>3</td>
<td>Process to use to reload an ACBLIB member (1, 2 or 3)</td>
</tr>
<tr>
<td></td>
<td>1 = HP Sysgen ACB Reload</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 = IMS Member Level Global Online Change</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 = IMS Managed ACBs Activate</td>
<td></td>
</tr>
<tr>
<td>PSB's</td>
<td>_____</td>
<td>Reload PSBs affected by a DBD change? (Y, N or blank)</td>
</tr>
</tbody>
</table>

Note: The **Process** option allows you to select either the HP Sysgen internal ACB reload process or the IMS Member level ACB reload feature of Global Online Change or IMS Managed ACBs Activate. Note that DEDB database reloads require using IMS Member level ACB reload or IMS Managed ACBs Activate.

Note: The **Reload PSB’s** option must be set to "N" for HP Sysgen ACB Reload and blank for IMS Managed ACBs Activate.
Chapter 7. Verifying a resource update list

The Verify option ensures that a resource update list will install successfully in one or more specific IMS subsystems.

During the process of creating a resource update list, IMS resource definition values are verified as valid, but the values are not verified as valid for any specific IMS subsystem. Thus, resource update lists are not associated with any specific IMS subsystem and can be installed for different target IMS subsystems or groups.

The Verify option ensures that a resource update list will install successfully in one or more specific IMS subsystems. This verification can take place before you actually install the resource update list.

It is not required that a resource update list be verified. The install process performs a verification check prior to making any changes. The Verify option provides a means for you to know if the resource update list installation will be successful before actually doing the installation.

Topics:
- “Verification methods” on page 156
- “Completed verification” on page 159
Verification methods

You can use one of the three methods to verify a resource update list.

Use any of the following methods to verify a resource update list:

- **Select option 3 (Verify)** from the IMS HP Sysgen Tools Primary Options menu (Figure 22 on page 70).
  By using this method, you can select multiple resource update lists to verify in a single pass as though they were a single resource update list. This feature is useful if you need to verify that multiple resource update lists be installed at the same time (perhaps by a batch job scheduled during a maintenance window).

- **Use the resource update list edit selection panel** (Figure 77 on page 121).
  Use the `VERIFY` line command on the Edit member selection list to verify a resource update list from the same panel where you can edit a resource update list. If you previously created a resource update list and want to verify that it can be installed, issue the `VERIFY` line command after you save the resource update list.

- **Perform the verify function by using a batch job.**
  Refer to Chapter 10, “Using the Batch Update List utility,” on page 177 for details about how to set up JCL and control cards to verify one or more resource update lists.

To use option 3 on the IMS HP Sysgen Tools Primary Options menu to verify one or more resource update lists, complete the following steps:

1. Select option 3 from the IMS HP Sysgen Tools Primary Options menu and press Enter.
   The Update List Selection panel (Figure 119) is displayed.

```
VERIFY IMS HP Sysgen Tools - Update List Selection Row 20 to 34 of 167
Command ===> [Space] Scrol] ===> CUR More ->

Primary Commands:
 S Select a Member Select one or more Resource Update Lists you wish to verify.
 L Locate a Member want to verify. Press Enter without any
 SORT Sort the List changes to the screen to continue.

<table>
<thead>
<tr>
<th>Name</th>
<th>Target</th>
<th>Status</th>
<th>Lines</th>
<th>Created</th>
<th>Updated</th>
<th>Upd-ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>#TERMSE4</td>
<td>IMS9</td>
<td></td>
<td>1</td>
<td>2016/03/17</td>
<td>2017/05/06</td>
<td>P390M</td>
</tr>
<tr>
<td>A</td>
<td>IMS7</td>
<td>20</td>
<td>2016/02/02</td>
<td>2017/05/06</td>
<td>13:47</td>
<td>P390M</td>
</tr>
<tr>
<td>ADDINV</td>
<td>IMS7</td>
<td>VERIFY</td>
<td>1</td>
<td>2015/04/04</td>
<td>2017/05/06</td>
<td>P390M</td>
</tr>
<tr>
<td>ANDREW1</td>
<td>IMS7</td>
<td></td>
<td>1</td>
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</tr>
<tr>
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<td>VERIFY</td>
<td>2</td>
<td>2016/01/26</td>
<td>2017/05/06</td>
<td>P390M</td>
</tr>
</tbody>
</table>
```

*Figure 119. Sample panel for verifying resource update list (1 of 3)*

Scroll the Update List selection panel by using the **RIGHT** and **LEFT** commands or **PF11** and **PF10**. Verify that panels 1, 2, and 3 have the same fields as edit screens 1, 2, and 3. Sample VERIFY panels 2 and 3 are shown in figures Figure 120 on page 157 and Figure 121 on page 157.
2. Use the S line command to select resource update lists to verify. You can select up to 255 resource update lists to verify simultaneously. Press Enter to initiate the verification process.

The update list entries from the update lists are shown in the following panel:
3. Validate that the correct resource update lists are selected and specify the **Target** name (either IMSID or group name) for which the entries are to be verified.

4. Enter the **GO** primary command to initiate the verification process.
   
   If the verification process identifies any conflicts that would prevent the update list entries from being installed, messages are displayed that describe these conditions. Example errors are shown in the following figure:
Completed verification

When a verification process is successful, the verify status (and the target that was used for the verify) are stored in the IOHPDS data set.

The Status field is updated to reflect the last successful function that was performed on the member. Figure 124 shows that resource update list ADDINV was successfully verified. The asterisk before the VERIFY status shows that the status of this update list was changed in this HP Sysgen ISPF session. Member CCFAOPGM also shows a VERIFY status without the asterisk, which means that it was not verified during this IMS HP Sysgen Tools ISPF session.

```
EDIT IMS HP Sysgen Tools - Update List Selection Verify Successful
Command ===>
Primary Commands: Line Commands: 
S Add/Edit a Member S Edit a Member E Edit a Member
L Locate a Member D Delete a Member V Verify a Member
SORT Sort the List R Rename a Member I Install a Member

Name Target Status Lines Created Updated Upd-ID
  #TERMSE4 IMS9  1 2016/03/17 2007/05/06 13:46 P390M
  A IMS7  20 2016/02/02 2007/05/06 13:47 P390M
  ADDINV IMS9 *VERIFY  1 2015/09/04 2007/05/06 20:59 P390M
  ANDREW1 IMS7  1 2015/11/17 2007/05/06 13:48 P390M
  ANDREW2 IMS7  6 2015/11/17 2007/05/06 13:48 P390M
  ANDREW3 IMS7  2 2015/11/20 2007/05/06 13:48 P390M
  ANDREW4 IMS7  2 2015/11/20 2007/05/06 13:48 P390M
  ANDREW5 IMS7  3 2016/11/20 2007/05/06 13:46 P390M
  CLSTIMS6 IMS9  6 2016/03/12 2007/05/06 14:23 P390M
  BCMIVPS1 IMS7  1 2015/09/14 2007/05/06 13:49 P390M
  CCFAOPGM IMS9 VERIFY  3 2016/06/29 2007/05/06 0:00 P390M
  CLSTIMS6 IMS9 VERIFY  1 2016/06/16 2007/05/06 13:50 P390M
  CLSTIMS7 IMS7  152 2016/09/14 2007/05/06 13:50 P390M
  CLSTIMS9 IMS9  5 2016/06/16 2007/05/06 13:50 P390M
  CMD1 IMS7 VERIFY  2 2016/01/26 2007/05/06 13:50 P390M
```

Figure 124. Resource update list after verification
Chapter 8. Installing a resource update list

After you create and verify a resource update list, you can install it. When you install a resource update list, verification is performed as the first step of the installation process.

Topics:
- “Installation methods” on page 162
- “Completed installation” on page 166
Installation methods

You can install a resource update list by using one of the three methods.

Use any of the following methods to install a resource update list:

- **Select option 4 (Install)** from the IMS HP Sysgen Tools Primary Options menu (Figure 22 on page 70).
  
  By using this method you can select multiple resource update lists to install in a single pass as though they were a single resource update list. This feature is useful if you need to install multiple resource update lists at the same time. For example, for multiple application maintenance releases in a single maintenance window.

- **Use the Resource update list edit selection panel (Figure 77 on page 121).**
  
  Use the I line command on the Edit member selection list to install a resource update list from the same panel where you can edit a resource update list. If you previously created a resource update list and want to install it, issue the I line command after you save the resource update list.

- **Perform the installation by using a batch job.**
  
  Refer to Chapter 10, “Using the Batch Update List utility,” on page 177 for details about how to set up JCL and control cards to install one or more resource update lists.

To use option 4 on the IMS HP Sysgen Tools Primary Options menu (Figure 22 on page 70) to install one or more resource update lists, complete the following steps:

1. Select option 4 from the HP Sysgen Primary Options menu and press Enter.

   The Update List Selection panel is displayed.

   ![Initial panel for installing resource update list](image)

   **Figure 125. Initial panel for installing resource update list**

   Scroll the Update List Selection panel by using the RIGHT and LEFT commands or PF11 and PF10. Install panels 1, 2, and 3 have the same fields as edit panels 1, 2, and 3. Sample Install panels 2 and 3 are shown in Figure 126 on page 163 and Figure 127 on page 163.
2. Use the **S** line command to select resource update lists to install. You can select up to 255 resource update lists to install simultaneously. Press Enter to initiate the installation process.

   The update list entries from the update lists are shown in the following panel:
3. Validate that the correct resource update lists are selected and specify the target name for which the entries are to be installed.

4. Enter the GO primary command to initiate the installation process.

   If the installation process identifies any conflicts that would prevent the update list entries from being successfully installed, messages are displayed that describe these conditions. Example errors are shown in the following panel:

   **Figure 128. Update list entries panel**

   **Figure 129. Resource update list installation error message**

After an action has completed for a member, the Update List Selection panel is updated with the current status of a member. When the status of a member is updated, the Status field is updated. For example in Figure 130 on page 165, *EDIT appears in the Status column to show that member A has been edited. When the Status column shows an asterisk (*) before the status, it means that this action occurred during the current IMS HP Sysgen ISPF session. Status of VERIFY or INSTALL is maintained across ISPF sessions, while status of EDIT or FAILED are not carried across ISPF sessions.
### Primary Commands:
- S: Add/Edit a Member
- L: Locate a Member
- SORT: Sort the List

### Line Commands:
- S: Edit a Member
- D: Delete a Member
- V: Verify a Member
- R: Rename a Member
- I: Install a Member

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<tr>
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<th>Target</th>
<th>Status</th>
<th>Lines</th>
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<th>Updated</th>
<th>Upd-ID</th>
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<td>2017/05/06</td>
<td>13:46</td>
</tr>
<tr>
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<td>21:21</td>
</tr>
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<td>IMS9</td>
<td>+VERIFY</td>
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</tr>
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<td>13:48</td>
</tr>
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<td>13:48</td>
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<tr>
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<td>2017/05/06</td>
<td>13:50</td>
</tr>
</tbody>
</table>

Figure 130. Resource update list after installation
Completed installation

When an installation completes successfully, the status panel displays the information about installation status.

As shown in Figure 131 on page 167, a summary of installation status appears at the beginning of the report, showing all IMS subsystems affected by the installation and each IMS subsystem’s status for the installation. This status indicates whether the install was successful, failed, or was backed out.

When installing a resource update list for a group of IMS subsystems, the installation process is synchronized among the systems. If an error occurs in one subsystem, the installation is backed out in all other IMS subsystems affected by the change. The resource update list installation goes through the following steps for each target IMS subsystem.

1. The resource update list is verified. Error conditions are displayed on the status screen as shown in Figure 129 on page 164.
2. IMS commands that were requested before installation are issued. Command responses are displayed on the screen.
3. Inactive MODBLKS and MATRIX data sets are updated, and the list of data sets and information about updated modules are displayed.
4. IMS HP Sysgen Tools updates the IMS incore control blocks for any resource update list entries that update a resource, and performs an IMS online change. The online change process switches the MODBLKS and MATRIX data sets to the updated inactive libraries, which causes the libraries to become active. This ensures that the next IMS restart includes the changes being installed. IMS HP Sysgen Tools displays the IMS online change status both before and after the online change process is completed.
5. IMS HP Sysgen Tools performs any requested ACBLIB reload functions, verifies that new programs and databases have a PSB or DBD in the IMS ACBLIB or IMS directory (and issues a warning message if not), and issues IMS commands that were issued after the installation process. The IMS commands and responses are displayed on the screen.

Figure 131 on page 167 shows an example of a successful installation and the messages that IMS HP Sysgen Tools issued during the installation. In this example, installation was performed for a group of IMS systems, which included IMS7 and IMS9. Because there were two IMS subsystems in this installation, the output shows status information for each IMS subsystem.
It is possible that the library and module summaries will be displayed even if the installation fails. The status shown at the beginning of the report indicates whether the installation was successful. The following figure shows an example of a failed installation. The IOH4902E message at the end of the report shows the reason for the failure.

---

**Figure 131. Installation status panel (1 of 3)**

---
Press the End key (usually, PF3) from the Update List Results panel to return to the resource update member list. The selected member is updated to include a status of either *INSTALL if the installation was successful, or *FAILED if the installation was unsuccessful.

The following figure shows another example of failed installation. The panel indicates that installation of IMS9 was not successful because the IMS was not active but that the installation information was stored in the store/forward data set for later processing. Detailed information follows message IOHF0621I.

**Figure 132. Installation status panel (2 of 3)**

Press the End key (usually, PF3) from the Update List Results panel to return to the resource update member list. The selected member is updated to include a status of either *INSTALL if the installation was successful, or *FAILED if the installation was unsuccessful.

The following figure shows another example of failed installation. The panel indicates that installation of IMS9 was not successful because the IMS was not active but that the installation information was stored in the store/forward data set for later processing. Detailed information follows message IOHF0621I.

**Figure 133. Installation status panel (3 of 3)**

Press the End key (usually, PF3) from the Update List Results panel to return to the resource update member list. The selected member is updated to include a status of either *INSTALL if the installation was successful, or *FAILED if the installation was unsuccessful.

The following figure shows another example of failed installation. The panel indicates that installation of IMS9 was not successful because the IMS was not active but that the installation information was stored in the store/forward data set for later processing. Detailed information follows message IOHF0621I.
Chapter 9. Creating resource update list entries in batch

IMS HP Sysgen Tools includes a utility that you can use to convert IMS sysgen macros to IMS HP Sysgen Tools resource update list entries.

The Resource Update List Create utility (IOHCLIST) reads a set of IMS sysgen macros, compares the definitions to those present in an IMS subsystem, and creates a resource update list to synchronize the sysgen source macros with the definitions in the IMS subsystem.

You can supply either a partial set of IMS sysgen macros, or the full sysgen source. If a partial set of sysgen macros is supplied, the utility synchronizes only the macros presented and does not delete definitions which are missing from the sysgen source. If a full set of sysgen macros is supplied, the utility generates resource update list entries to delete resources defined to the IMS subsystem which are no longer in the sysgen source.

Running the utility in “full” mode provides the ability to re-synchronize IMS definitions with your current IMS sysgen source. The utility also shows which IMS resources do not match your IMS sysgen source.

In addition, you can supply special $IOHGEN macros, which allow you to have the IOHCLIST utility generate ACB reload entries and AGN update entries.

Topics:
  • “Processing the Resource Update List Create utility” on page 170
Processing the Resource Update List Create utility

When you run the Resource Update List Create utility (IOHCLIST), IMS HP Sysgen Tools reads the IMS sysgen source you define in the IOHGEN DD name. The sysgen source is validated and stored in internal control block format. If the sysgen source is successfully processed, IMS HP Sysgen Tools obtains the resource definitions from the IMS subsystem for comparison.

If CTLBLKS=DASD was requested, IMS HP Sysgen Tools compares sysgen source definitions with definitions from one of the following:

- MODBLKS data set
- RDDS
- IMSRSC repository data set

If CTLBLKS=CORE was requested, IMS HP Sysgen Tools compares sysgen source definitions with IMS incore resource definitions.

IMS HP Sysgen Tools creates resource update list entries for the following purposes:

- To add any sysgen source definitions that are not present in the active MODBLKS, RDDS, or IMSRSC repository data set
- To update definitions that have been updated in the IMS sysgen source

In addition, if the IOHCLIST utility was run with SOURCE=FULL, it creates entries to delete IMS resources that are not present in the IMS sysgen source.

Running IOHCLIST with SOURCE=PARTIAL

PARTIAL mode allows you to supply a subset of IMS sysgen macros, for example, only updated DATABASE, APPLCTN, TRANSACT, or RTCODE macros; and to create a resource update list that updates or adds IMS resource definitions to allow the new sysgen macros to be implemented in a running IMS subsystem. You can use this process if a subset of IMS sysgen source has been updated and you want to install only those changes to IMS sysgen source.

To use PARTIAL mode with TRANSACT or RTCODE macros, you must also include the APPLCTN macro associated with each TRANSACT or RTCODE macro. This is required to ensure that transaction and route codes are assigned to the proper program names. Failure to provide the proper APPLCTN macro prior to each TRANSACT or RTCODE macro results in either a syntax error while processing the IMS sysgen source or a change to the program name associated with the transaction or route code. The change will result in an unexpected APPLCTN program definition.

Running IOHCLIST with SOURCE=FULL

FULL mode processing allows you to synchronize the entire IMS sysgen source with a running IMS subsystem. You must supply your entire IMS sysgen source when using FULL mode or the resource update list will contain entries to delete resources you may not want to delete.

The sysgen source you supply need not include terminal macros, but it must include any MSC link definitions.
Running IOHCLIST with SOURCE=DELETE

SOURCE=DELETE mode allows you to delete database, program, transaction, and routing codes from the IMS incore resource definitions, MODBLKS data set, RDDS, or the IMSRSC repository data set.

Using the $IOHGEN macro

IMS HP Sysgen Tools supports the use of an internal macro, $IOHGEN, to allow the inclusion of ACB reload entry requests and selected MATRIX security update entry requests. The IOHCLIST utility allows you to specify the name of a PSB or DBD ACB to be reloaded, or the name of an AGN definition to be updated. AGN updates include specification of the name of a PSB, transaction, or LTERM to be connected to or disconnected from the Application Group Name (AGN).

Simply include the new macro in the gen source for the IOHCLIST utility. IOHCLIST reads the $IOHGEN macro and creates resource update list entries to make the changes you request.

For an ACB reload request, simply code a sysgen source statement using one of the following statements:

```
$IOHGEN RELOAD,PSB=psbname
$IOHGEN RELOAD,DBD=dbdname
```

For an AGN update request, use a $IOHGEN macro statement of the following format:

```
$IOHGEN AGN=agn-name,AGPSB=psbname,ACTION=CONNECT
$IOHGEN AGN=agn-name,AGPSB=psbname,ACTION=DISCONN
$IOHGEN AGN=agn-name,AGTRAN=trancode,ACTION=CONNECT
$IOHGEN AGN=agn-name,AGTRAN=trancode,ACTION=DISCONN
$IOHGEN AGN=agn-name,AGLTERM=lterm,ACTION=CONNECT
$IOHGEN AGN=agn-name,AGLTERM=lterm,ACTION=DISCONN
```

The $IOHGEN macro statement follows standard assembler syntax rules. At least one blank must precede and follow the $IOHGEN operation code. Statements can be continued by including a non-blank character in column 72 and leaving columns 1-15 of the continued line blank. Each $IOHGEN statement specifies one and only one change to be made to the IMS environment. If, for example, there are two PSB members of ACBLIB to be reloaded, you would code two different $IOHGEN macros.

The keywords and operands for the $IOHGEN macro are described as follows:

**ACTION**=

Use this keyword to specify whether a resource name is to be added to (ACTION=CONNECT) or removed from (ACTION=DISCONN) an AGN. When you specify this keyword, the AGN= keyword is required together with only one of the following keywords: AGLTERM=, AGPSB=, AGTRAN=.

**AGN**=

Use this keyword to specify the name of the AGN to be updated. When you specify this keyword, the ACTION= keyword is required together with only one of the following keywords: AGLTERM=, AGPSB=, AGTRAN=.

**AGLTERM**

Use this keyword to specify the name of an IMS LTERM to be added to or removed from an AGN, as specified with the ACTION= keyword. If you
specify this keyword, then the AGN= and ACTION= keywords are required. No other keywords are permitted.

AGPSB=
Use this keyword to specify the name of the PSB to be added to or removed from an AGN (as specified with the ACTION= keyword). If you specify this keyword, then the AGN= and ACTION= keywords are required. No other keywords are permitted.

AGTRAN=
Use this keyword to specify the name of the transaction to be added to or removed from an AGN (as specified with the ACTION= keyword). If you specify this keyword, then the AGN= and ACTION= keywords are required. No other keywords are permitted.

DBD=
Use this keyword to specify the name of the DBD to be reloaded. If this keyword is specified, then the RELOAD keyword is required. No other keywords are permitted.

PSB=
Use this keyword to specify the name of the PSB to be reloaded. If this keyword is specified, then the RELOAD keyword is required. No other keywords are permitted.

RELOAD
Use this keyword to specify that an ACBLIB reload resource update list entry is to be created. If this keyword is specified, then either the DBD= or PSB= keyword is required, and no other keywords are permitted.

For example, the following macros would create resource update list entries to reload the DFSSAM02 PSB and to update the AGN named IVP by adding PSB name DFSSAM02.

$IOHGEN RELOAD,PSB=DFSSAM02
$IOHGEN AGN=IVP,AGPSB=DFSSAM02,ACTION=CONNECT

**IOHCLIST JCL requirements**

Sample JCL for the IOHCLIST utility is included in the SIOHSAMP data set in member IOHCLIST. The sample job also shows the DD statements required for the IOHCLIST utility.

The DD statements are listed as follows:

**STEPLIB**
Must reference the IMS HP Sysgen Tools SIOHLINK library.

**IOHPRINT**
Specifies the output report DD definition. DCB attributes are RECFM=FBA and LRECL=133.

**SYSABEND**
Dump output DD.

**IOHGEN**
IMS sysgen source macros. This DD can reference a sequential data set, a member of a PDS, or a PDS without a member name. When specifying a PDS without a member name, the SELMBR statement must specify one or more member names. If a PDS data set is specified without a member name, only one data set name can be specified for this DD statement. Multiple sequential data sets (or PDS data sets with member names) can be specified by concatenating.
IOHOPT
IMS HP Sysgen Tools IOHOPT data set. This data set must include the options member for the IMSID specified on the IMSID control card.

IOHPDS
IMS HP Sysgen Tools data set. This is the PDS where the resource update list is stored.

SYSIN
Specifies the location of the data set that contains IMS HP Sysgen Tools control cards.

**IOHCLIST control cards**
As shown in the sample job, control cards are used to specify the parameters for running the IOHCLIST utility.

Control cards may include comment cards which are identified with an asterisk (*) in column 1 of the statement. Each record in the SYIN file can specify only one statement. Statements are written in the form `KEYWORD=value`. At least one blank must follow the value specified, and any information following the blank is ignored.

Each control card must include a keyword. The keyword can be in any position on the record. The keyword must be followed by zero or more blanks, an equal sign (=), and the value for the keyword. The value may be enclosed in parentheses.

There can be only one occurrence of each keyword in the SYIN records, with the exception of the `SELMBR` keyword. It can be included as many times as necessary to define all the required IOHGEN member names to be processed.

The following statements are supported by the IOHCLIST utility:

**IMSID=**
This statement is required. Defines the IMSID of a running IMS subsystem. The IMS subsystem need not be running on the same MVS system as the IOHCLIST utility.

**LIST=**
This statement is required. It defines the name of the resource update list to be created by the IOHCLIST utility. The resource update list is saved in the data set defined by the IOHPDS DD. In addition to the resource update list member name, if the resource update list already exists in the IOHPDS data set, the `REPLACE` keyword must be specified. To include this specification, add a blank or comma and the word `REPLACE` following the update list name.

**DCLWA=**
This statement is optional. If specified, it must have a value of YES or NO. This keyword allows you to specify the default value of the DCLWA attribute for each transaction. If the IMSCTRL macro with the DCLWA keyword is included in the sysgen source processed by the IOHCLIST utility, the IMSCTRL specification overrides the value specified on this statement.

**SELMBR=**
This statement is optional. It specifies the member name(s) of the IOHGEN data set to be processed by the IOHCLIST utility. If the IOHGEN DD references a PDS data set without a member name, use this statement. Otherwise, you should omit it. You may specify the `SELMBR` statement...
multiple times in a single execution of the IOHCLIST utility. The value specified for this keyword must be one or more member names which are to be included when processing the IOHCLIST utility. Generic member names are permitted. Use an asterisk (*) to replace any single character in a member name. For example, SELMBR=****STG1 would include all members with STG1 in positions 5-8 of the member name. It would not include a member named IMSSTG1 because STG1 occurs in positions 4-7 of that member name.

SOURCE=
This statement is required. It specifies whether the IOHCLIST utility is to run in PARTIAL mode, FULL mode, or DELETE mode. It must specify a value of PARTIAL, FULL, or DELETE.

FULL mode creates delete entries in the resource update list to delete all resources not included in the IMS sysgen source.

CTLBLKS=
This statement is required. It specifies where the IOHCLIST utility is to obtain IMS resource definitions from the MODBLKS data set (CTLBLKS=DASD) or use the incore IMS resource definitions (CTLBLKS=CORE). It must specify a value of DASD or CORE.

CORE You can use CTLBLKS=CORE to reset IMS definitions back to their IMS sysgen status, undoing the effect of any /ASSIGN type commands (such as /ASSIGN, /STA DB ACCESS=parameter, /MSASSIGN, or /CHANGE).

DASD You can use CTLBLKS=DASD to ignore any changes from /ASSIGN type commands. Note that the database ACCESS intent is one of the resource attributes affected by an /ASSIGN type command.

IOHCLIST return codes
The IOHCLIST utility indicates success or failure by the condition code presented at the end of the job step.

The following condition codes are possible:
0 The utility completed successfully, and a resource update list was created.
4 The utility completed successfully, but no changes were required to the IMS control blocks. No changes were made to the IOHPDS data set.
8 An error occurred while the utility was running. Review the job output to determine the cause of the error.

Output of the IOHCLIST utility
The output of the IOHCLIST utility has four sections.

First, input control cards are listed, along with any error messages associated with processing the control cards. IOH324I messages follow the control cards and summarize the options used while the utility was processing.

Next, IOH3243I messages describe the IMS resource definition and release information retrieved from the IMS subsystem.

Next, the sysgen source presented to the utility is listed, along with any warning or error messages associated with the sysgen macros.
Finally, the final output listing section shows the resource update list entries that were generated for synchronization with the sysgen source.
Chapter 10. Using the Batch Update List utility

By using the Batch Update List utility, you can verify or install an IMS HP Sysgen Tools resource update list in a batch job.

Sometimes changes to IMS sysgen resource definitions must be installed while an application is being upgraded. The batch interface to the IMS HP Sysgen Tools Verify and Install functions allows the installation of one or more resource update lists in a batch job that can be scheduled and run by the production job scheduling group or by the application software installers.

Topics:
• “JCL requirements” on page 178
• “Control cards used for Batch Update List processing” on page 179
• “Batch Update List return codes” on page 180
JCL requirements

A sample job to perform batch verify or install processes is included in the IMS HP Sysgen Tools sample library, SIOHSAMP, in member IOHBLST.

The following DD statements are used to run the Batch Update List utility:

STEPLIB
This DD statement must refer to the IMS HP Sysgen Tools load library, SIOHLINK.

IOHOPT
This DD statement must refer to the IMS HP Sysgen Tools options library where the IMSID options are stored.

IOHPDS
This DD statement must refer to the library where the resource update lists to be processed are stored. This library name is also specified on the IMS HP Sysgen Tools ISPF Primary Options menu.

IOHPRINT
This DD statement is used for output messages from the Batch Update List utility. It will typically be a SYSOUT file, although it can be used to place utility output in a data set.

SYSUDUMP
This optional DD statement is used to record diagnostic information in the event a failure in the Batch Update List utility occurs.

SYSIN
This DD statement is required and must specify the control cards that are used by the Batch Update List utility. The control cards can be included in the JCL (by using DD *) or can be in a data set. If a data set is used, it must have DCB attributes LRECL=80 and RECFM=FB.
Control cards used for Batch Update List processing

Control cards are used by the Batch Update List utility to specify the functions that you want. Because the only functions the Batch Update List utility can perform are Verify and Install, there are two control cards that can be used with this utility. The following general syntax rules apply to the control cards that are supplied by using the SYSIN DD statement.

- An asterisk (*) in column 1 indicates that this is a comment statement. It is ignored by the utility. A comment card cannot be continued; you must code any following comment statements with an asterisk in column 1.
- The first word on a statement must be either VERIFY or INSTALL, depending on the function that you want to perform.
- Two keywords are required for each VERIFY or INSTALL statement, IMSID= and either IMSID= or TARGET=.
- You must specify the target IMS system for the VERIFY or INSTALL function.
- You can specify a single IMSID using the IMSID= or TARGET= keywords, or a group of IMS systems by using the TARGET= keyword. Whatever IMSID or group name you specify must be defined to IMS HP Sysgen Tools through the IMSID or GROUP SETUP panels.
- The NAME= keyword identifies one or more resource update list member names that are to be verified or installed. If more than one name is specified, separate the member names with a comma, and enclose the list in parentheses. For example, NAME=(MEMBER1,MEMBER2) will select resource update lists that are named MEMBER1 and MEMBER2.
- Continuation of a statement is permitted. A comma at the end of a card indicates that the statement is continued on the next line.

The following figure shows some examples of valid control cards:

```
INSTALL NAME=MEMBER1,IMSID=IMSA
VERIFY IMSID=IMSA NAME=( MEMBER1 , MEMBER2 )
VERIFY TARGET=GROUP1,
     NAME=(MEMBER1,
           MEMBER2)
```

*Figure 135. Sample batch update list control cards.*

You can include multiple control cards in a single issuance of the Batch Update List utility. Each statement is processed individually. When multiple members are specified on a single control card, the members are merged and processed simultaneously. When multiple members are specified on separate control cards, they are processed individually.

To install several resource update lists in a single batch job, it is more efficient to install all the resource update lists at once (by specifying them all in a single statement). However, if one entry fails, none of the entries in any of the update lists will be installed.
Batch Update List return codes

The Batch Update List utility ends with one of three possible return codes. The higher the return code value, the more severe the error.

The following three return codes are used by the Batch Update List utility:

0        All functions completed successfully.

4        All functions completed successfully, but the printed job output contains warning messages. This return code is typically issued when a new resource that is being added does not have a definition in the IMS ACBLIB or IMS directory data set.

8        At least one request failed. Refer to the printed output for error messages that describe the reason for the failure.
Part 4. Batch utilities

The batch utilities are used to run IMS HP Sysgen Tools in batch mode.

Topics:

- Chapter 11, “Using the Fast Sysgen utility,” on page 183
- Chapter 12, “Using the JCLIN generator,” on page 201
- Chapter 13, “Using the Sysgen Compare utility,” on page 205
- Chapter 14, “Using the Batch Reverse Sysgen utility,” on page 211
- Chapter 15, “Using the Batch Search utility,” on page 217
- Chapter 16, “Using the Batch IMSID Options utility,” on page 221
- Chapter 17, “Using the Merge Clone utility,” on page 229
Chapter 11. Using the Fast Sysgen utility

The Fast Sysgen utility can perform an IMS MODBLKS sysgen and IMS security gen in a single batch step.

Fast Sysgen runs as a single job step in batch mode. You control the Fast Sysgen process through the PARM field of the EXEC statement and various optional and required DD statements.

Topics:
- “Fast Sysgen JCL” on page 184
- “Fast Sysgen batch output” on page 189
- “First-time run suggestions” on page 195
- “Fast Sysgen restrictions and requirements” on page 196
Fast Sysgen JCL

Fast Sysgen in batch requires JCL for processing. Sample JCL is included in SIOHSAMP as member IOHFGEN. You can also generate JCL for the Fast Sysgen utility by using ISPF option U.I.

PARM field specifications

The PARM field specifications for the Fast Sysgen utility are described in this topic.

The EXEC statement in the batch JCL contains two keyword specifications in the PARM field: IMSID= and TARGET=.

**IMSID = imsid**

This optional keyword parameter may be specified to allow IMS HP Sysgen Tools to dynamically allocate any data sets not included in the batch JCL. The IMSID options stored in the IOHOPT data set are used to determine the data set names of the MODBLKS, MATRIX, and gen source data sets. If any of these data sets is not included in the JCL for the Fastgen job step, IMS HP Sysgen Tools determines the data set names from the IMSID options and dynamically allocates the data sets.

**TARGET = (v1,v2,...)**

This keyword parameter specifies which MODBLKS and MATRIX data sets are to be updated by this run of the Fast Sysgen utility. Possible values for TARGET are:

- **blank**
  No data sets are updated while Fast Sysgen utility is processing. You can specify TARGET= or TARGET=() to perform a syntax check of your IMS syngen source statements.

- **A**
  The A libraries identified by the MODBLKSA and MATRIXA DD statements.

- **B**
  The B libraries identified by the MODBLKSB and MATRIXB DD statements.

- **S**
  The staging libraries identified by the MODBLKS and MATRIX DD statements.

- **I**
  The inactive MODBLKS and MATRIX data sets. These might be specified by the MODBLKSA and MATRIXA DD statements or the MODBLKSB and MATRIXB DD statements depending on the currently active suffix. IMS HP Sysgen Tools uses either the MODSTAT or OLCSTAT data set to determine which MODBLKS/MATRIX data set is inactive and which is active. If you do not specify TARGET=I, the MODSTAT or OLCSTAT DD statements are not required for the Fastgen batch job.

You can update multiple libraries by running the Fast Sysgen utility one time. To update multiple libraries, simply specify the desired one-character identifiers in parentheses separated by commas. For example, to update the inactive and staging libraries, specify TARGET=(S,I). If only one library identifier is used, the parentheses are optional; TARGET=S and TARGET=(S) are both valid.

The sample job IOHFGEN in the SIOHSAMP data set contains sample JCL for batch processing.
Fast Sysgen utility DD statements

The DD statements for the Fast Sysgen utility are described in this topic.

Required DD statements

STEPLIB
The STEPLIB DD must include both the IMS HP Sysgen Tools program library and the IMS RESLIB data set. The RESLIB data set specified must be the RESLIB data set used by the IMS control region or a copy of that data set. Two members are read from the RESLIB data set: DFSVC000, from which the IMS release is determined, and DFSISDCx (where x is the nucleus suffix specified in the IMS stage 1 sysgen macro IMSGEN
SUFFIX=) from which the IMS DC component names are determined.

Caution: If the wrong RESLIB data set is specified, unpredictable (and undesirable) results will occur.

IOHPRINT
This DD statement specifies the location of the output from the IMS Fast Sysgen process. Based on specifications in the Fast Sysgen control cards, it might contain only Fast Sysgen process summary information, or it might also include input listings, reports, and error messages.

If this DD statement directs the data to DASD, the data set will have LRECL=133 and RECFM=FBA.

IMSGEN
IMS stage 1 macro listings and error messages are written to this DD name. If this DD statement directs the data DASD, the data set will have LRECL=133 and RECFM=FBA.

IMSRPT
IMS sysgen reports are written to this DD name. If this data is sent to a DASD data set, the data set will have LRECL=133 and RECFM=FBA.

SECGEN
IMS security generation input statements and error messages are written to this DD name. If this data is sent to a DASD data set, the data set will have LRECL=133 and RECFM=FBA.

SECRPT
IMS security generation reports are written to this DD name. If this data is sent to a DASD data set, the data set will have LRECL=133 and RECFM=FBA.

IOHOPT
The IOHOPT DD defines the data set name of the IOHOPT data set. The IOHOPT data set is used if the IMSID= keyword is included in the PARM= field of the JCL. It is used to retrieve the data set names of the MODBLKS, MATRIX, and IMS and security gen source data sets.

Optional DD statements

MODSTAT
The MODSTAT DD statement is optional. If present, it defines the data set name of the IMS MODSTAT data set. If not specified, and the IMSID= keyword is specified in the PARM field, IMS HP Sysgen Tools dynamically allocates the MODSTAT data set, if required. If this DD statement is included in the JCL, it overrides the data set name defined in the IMSID options. Note that if the IMS system uses Global Online Change, you
should omit the MODSTAT DD and use the OLCSTAT DD instead. If the MODSTAT DD is included in the JCL, it should refer to the same data set which the IMS control region uses. The MODSTAT DD is used only if the TARGET= keyword in the PARM field includes “I”, indicating that the inactive MODBLKS and MATRIX libraries should be updated by the Fastgen process.

OLCSTAT
The OLCSTAT DD statement is optional. If present, it defines the data set name of the IMS OLCSTAT data set. If not specified, and the IMSID= keyword is specified in the PARM field, IMS HP Sysgen Tools dynamically allocates the OLCSTAT data set, if required. If this DD statement is included in the JCL, it overrides the data set name defined in the IMSID options. Note that if the IMS system uses Local Online Change, you should omit the OLCSTAT DD and use the MODSTAT DD instead. If the OLCSTAT DD is included in the JCL, it should refer to the same data set which the IMS control region uses. The OLCSTAT DD is used only if the TARGET= keyword in the PARM field includes “I”, indicating that the inactive MODBLKS and MATRIX libraries should be updated by the Fastgen process.

MODBLKS
The MODBLKS DD statement is optional and defines the data set name of the staging MODBLKS data set. If not specified, and the IMSID= keyword is specified in the PARM field, IMS HP Sysgen Tools dynamically allocates the MODBLKS DD, if required. If this DD statement is included in the JCL, it overrides the data set name defined in the IMSID options. MODBLKS DD is used only if the TARGET= keyword in the PARM field includes “S”, indicating that the staging MODBLKS and MATRIX libraries should be updated by the Fastgen process.

MODBLKSA
The MODBLKSA DD statement is optional and defines the data set name of the A version of the MODBLKS data set. If not specified, and the IMSID= keyword is specified in the PARM field, IMS HP Sysgen Tools dynamically allocates the MODBLKSA DD, if required. If this DD statement is included in the JCL, it overrides the data set name defined in the IMSID options.

If the MODBLKSA DD statement is included in the JCL, it should refer to the same data set which the IMS control region uses.

MODBLKSA DD is used only if the TARGET= keyword in the PARM field includes “A” or “I”, indicating that the A MODBLKS and MATRIX libraries or the inactive MODBLKS and MATRIX libraries should be updated by the Fastgen process.

MODBLKSB
The MODBLKSB DD statement is optional and defines the data set name of the B version of the MODBLKS data set. If not specified, and the IMSID= keyword is specified in the PARM field, IMS HP Sysgen Tools dynamically allocates the MODBLKSB DD, if required. If this DD statement is included in the JCL, it overrides the data set name defined in the IMSID options.

If the MODBLKSB DD statement is included in the JCL, it should refer to the same data set which the IMS control region uses.
MODBLKSB DD is used only if the `TARGET=` keyword in the PARM field includes “B” or “I”, indicating that the B MODBLKS and MATRIX libraries or the inactive MODBLKS and MATRIX libraries should be updated by the Fastgen process.

**MATRIX**

The MATRIX DD statement is optional and defines the data set name of the staging MATRIX data set. If not specified, and the `IMSID=` keyword is specified in the PARM field, IMS HP Sysgen Tools dynamically allocates the MATRIX DD, if required. If this DD statement is included in the JCL, it overrides the data set name defined in the IMSID options. The MATRIX DD statement is used only if the `TARGET=` keyword in the PARM field includes “S” for the staging MODBLKS and MATRIX libraries, and if IMS security gen source is included in the Fastgen process.

**MATRIXA**

The MATRIXA DD statement is optional and defines the data set name of the A version of the MATRIX data set. If not specified, and the `IMSID=` keyword is specified in the PARM field, IMS HP Sysgen Tools dynamically allocates the MATRIXA DD, if required. If this DD statement is included in the JCL, it overrides the data set name defined in the IMSID options. If the MATRIXA DD statement is included in the JCL, it should refer to the same data set which the IMS control region uses.

The MATRIXA DD statement is used only if the `TARGET=` keyword in the PARM field includes “A” or “I” for the A or Inactive MODBLKS and MATRIX libraries, and if IMS security gen source is included in the Fastgen process.

**MATRIXB**

The MATRIXB DD statement is optional and defines the data set name of the B version of the MATRIX data set. If not specified, and the `IMSID=` keyword is specified in the PARM field, IMS HP Sysgen Tools dynamically allocates the MATRIXB DD, if required. If this DD statement is included in the JCL, it overrides the data set name defined in the IMSID options.

If the MATRIXB DD statement is included in the JCL, it should refer to the same data set which the IMS control region uses.

The MATRIXB DD statement is used only if the `TARGET=` keyword in the PARM field includes “B” or “I” for the B or Inactive MODBLKS and MATRIX libraries, and if IMS security gen source is included in the Fastgen process.

**IOHGEN**

The IOHGEN DD is an optional DD statement that can be used to define the IMS sysgen stage 1 macro source data sets. If this DD statement is not specified, and the `IMSID=` keyword is specified in the PARM field, IMS HP Sysgen Tools dynamically allocates the IMS sysgen source data sets. If this DD statement is included in the JCL, it overrides data set names defined in the IMSID options.

If specified in the JCL, the IOHGEN DD defines a concatenation of sequential data sets (or PDS data sets with member names). When JCL is used to specify the IMS sysgen source data sets, the COPY assembler statement cannot be included in the source statements. If you use COPY, you should use the IMS HP Sysgen Tools IMSID options to define the location of your IMS sysgen source libraries rather than specifying the data sets in the JCL.
IOHSEC

The IOHSEC DD is an optional DD statement that can be used to define the IMS security gen source data set(s). If not specified, and the IMSID = keyword is specified in the PARM field, IMS HP Sysgen Tools dynamically allocates the IMS sysgen source data sets. If this DD statement is included in the JCL, it overrides data set names defined in the IMSID options.

If specified in the JCL, the IOHSEC DD defines a concatenation of sequential data sets (or PDS data sets with member names).

SYSUDUMP

Although not required, this DD statement can often provide useful information about abnormal termination conditions. In the unlikely occurrence of a Fast Sysgen problem, IBM Software Support might need the output from this DD statement for diagnostics.
Fast Sysgen batch output

There are five kinds of output from the batch Fast Sysgen process. The five types of output are written to five different DD statements, allowing you to control where diagnostic and report information is stored, and who has access to view the information.

The IOHPRINT DD contains IMS HP Sysgen Tools control information and all warning and error messages associated with the execution of the utility. If there is an error in the IMS stage 1 macro source, the macro statement in error is written to the IOHPRINT DD, followed by the error message.

The IMSGEN DD contains a full listing of the IMS stage 1 sygen source macros and any associated error messages.

The IMSRPT DD is used to provide a tabular report showing all the IMS sygen resource definitions and their options. If desired, you can download this information to a PC for processing in a spreadsheet application.

The SECGEN DD contains a full listing of all IMS security gen source statements and any associated error messages.

The SECRPT DD provides security reports which display information about the IMS resources which are protected using SMU security, and about which resources have access to each protected resource. For security reasons, this output should probably not be available to most users. Consider writing this output to a data set with appropriate security.

Output examples

The control report information written to the IOHPRINT DD begins with a box indicating that the Fastgen process has started. If IMS stage 1 sygen error messages are present, the follow Immediately, along with the macro that caused the error message to be generated, if appropriate.

Following the IMS sygen process, Fast Sysgen performs the IMS security generation process, identified in the following figure:

```
* ********************************************
* *  FASTGEN SCAN OF IMS SECURITY INPUT MEMBER DEV5GEN  *
* * ********************************************
```

Figure 136. IMS security generation listing example

Any error messages associated with the IMS security generation process will follow the box indicating that the IMS security generation process is running. If appropriate, these will include the statement that caused the error.

Following the IMS security generation process, Fast Sysgen updates the MODBLKS and MATRIX libraries with specifications from the IMS sygen and IMS security generation processes. The linkage editor report shows the requested suffixes to be
updated, the data set names associated with those suffixes, and the block size of each library. The report also indicates each module name created and the characteristics of the module. An example of this report is shown in Figure 137.

![Figure 137. Linkage editor report example](image)

**IMSGEN report DD**

The IMSGEN report DD contains a full listing of the IMS stage 1 sysgen source macros and any error messages that occurred during the IMS stage 1 sysgen process.

A sample listing is shown in the following figure:
The IMSRPT report DD contains a listing of all the resources defined during the IMS stage 1 sysgen processing.

A table of each transaction, program route code, and database are presented, with all the characteristics listed for each resource defined. Figure 139 on page 192 shows an example of the transaction portion of the report.
The SECGEN report DD contains a full listing of all the IMS SMU security gen input, and any error messages that occurred while processing the IMS security gen input.

Because this report could contain sensitive information such as passwords or IMS terminal names that are authorized to issue transactions or commands, you may want to protect this output information from general access. A sample listing of the SMU security input is shown in the following figure:
SECRPT report DD

The SECRPT report DD contains a tabular listing of the resources defined to the IMS system, and the security protections requested by the IMS SMU security statements.

This example shows the report generated by IMS security gen processing.
<table>
<thead>
<tr>
<th>Command</th>
<th>Defined Nodes</th>
<th>Defined PTERMS</th>
<th>Defined LTERMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTIVATE</td>
<td>LF02 LF04 P390D LOCLMOD4 SC0TCP02 SC0TCP05 RT0TCP01 SLUICONX SLUPCONX</td>
<td>33</td>
<td>41</td>
</tr>
</tbody>
</table>

### Defined Passwords

**IVP**

<table>
<thead>
<tr>
<th>Type of Entry</th>
<th>Name</th>
<th>Passwords Protecting This Resource</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMMAND</td>
<td>ACTIVATE</td>
<td>PMASTER WTOR</td>
</tr>
<tr>
<td>COMMAND</td>
<td>ALLOCATE</td>
<td>PMASTER WTOR</td>
</tr>
<tr>
<td>COMMAND</td>
<td>ASSIGN</td>
<td>DFSTCF</td>
</tr>
<tr>
<td>COMMAND</td>
<td>CHANGE</td>
<td>DFSTCF</td>
</tr>
<tr>
<td>COMMAND</td>
<td>CHKPT</td>
<td>DFSTCF</td>
</tr>
<tr>
<td>COMMAND</td>
<td>CLSDST</td>
<td>DFSTCF</td>
</tr>
</tbody>
</table>

---

Figure 141. Resources defined to the IMS system
First-time run suggestions

The first time you run a batch Fast Sysgen process for each IMS system, it is suggested that you use the IMS Sysgen Compare utility, IOHCOMP, to verify that the output of the Fast Sysgen process exactly matches the output from a traditional IMS sysgen.

If there are any differences that were not caused by changes in IMS sysgen source, those differences should be reported to IBM Software Support.

Related information:

Chapter 13, “Using the Sysgen Compare utility,” on page 205
Fast Sysgen restrictions and requirements

The Fast Sysgen supports all IMS macros.

There are some restrictions and requirements for running Fast Sysgen processes that read IMS sysgen source. For more information, see IMS System Definition for your installed version of IMS.

Topics:
- “Restrictions on assembler language facilities”
- “Converting restricted facilities to Fast Sysgen compatible source”
- “IMS stage 1 macro requirements” on page 197
- “Fast Sysgen processing” on page 198
- “IMS maintenance impacts” on page 200

Restrictions on assembler language facilities

Fast Sysgen does not support all statements and features of z/OS assembler language. However, a supplied facility allows conversion from any z/OS assembler language constructs to a source compatible with Fast Sysgen.

The following list shows the supported assembler statements. Any deviations from the assembler-supported syntax or function are noted.

- COPY
- EJECT
- END - not required and not processed
- MNOTE - statement is permitted, but is not processed.
- PRINT
- SPACE
- TITLE

The Fast Sysgen process does not support symbolic variables, SET statements (such as SETC), or conditional assembly statements such as AIF and AGO.

If any restricted features of z/OS assembler language are present in IMS sysgen source, the Fast Sysgen conversion utility allows conversion from assembler source with restricted statements to IMS sysgen source that includes none of the restricted features.

Converting restricted facilities to Fast Sysgen compatible source

IMS HP Sysgen Tools provides the capability to convert any valid IMS sysgen source to IMS HP Sysgen Tools compatible IMS sysgen source.

This capability is useful for converting IMS sysgen source that has conditional assembler or symbolics included. The conversion process runs as a batch z/OS assembler step. The sample job IOHCGEN in the SIOHSAMP data set contains sample JCL for converting restricted facilities to sysgen source that is IMS HP Sysgen Tools compatible.

The SYSPUNCH DD defines the output of the conversion process (IMS HP Sysgen Tools compatible IMS sysgen source). The SYSPUNCH output can then be used as the IMS stage 1 sysgen input to the Fastgen batch process (the IOHGEN DD). All assembler conditional assembly and symbolic variables will be resolved.
The SYSIN DD statement must include the SIOHMACS data set member name IOHGEN before all IMS sysextract stage 1 sysextract source. The data sets that follow the SIOHMACS data set should be exactly the same as the SYSIN DD statement in the IMS stage 1 sysextract job.

The SYSLIB DD statement must specify the SIOHMACS data set first, followed by any user stage 1 source data sets that are present in the IMS stage 1 sysextract job's SYSLIB DD statement.

**IMS stage 1 macro requirements**

IMS stage 1 sysextract macro requirements are discussed using the following four categories: application, MSC link, system, and terminal.

Application macros are required to build the MODBLKS modules and can be updated from the prior IMS sysextract. These macro statements include:

- APPLCTN
- DATABASE
- RTCODE
- TRANSACT

MSC link related macro definitions used in the last CTLBLKS or high level IMS sysextract must be included in the Fast Sysextract source. If no MSC links were defined in the previous sysextract, there should be no MSC link related macros in the Fast Sysextract source. The following MSC related macros are valid SYSID values that are permitted on APPLCTN and TRANSACT macros.

- MSLINK
- MSNAME
- MSPLINK

System macro statements occur no more than one time in the IMS sysextract source. Any of the following macro statements used in the prior IMS sysextract must be included in the Fast Sysextract source. There are few changes permitted to these macro definitions during a MODBLKS type sysextract. For details, see *IMS System Definition* for your installed version of IMS.

- BUFPOLS
- COMM
- FPCTRL
- IMSCTF
- IMSCTRL
- IMSGEN
- MSGQUEUE
- SECURITY
- SPAREA

Terminal related macro statements are not required for Fast Sysextract processing, but might be included in the stage 1 source. These macro statements are checked for assembler syntax, but their keyword values are not validated. If there are a large number of macro statements, they might be excluded from Fast Sysextract processing. Because only basic syntax checking is performed, and no keyword value validation is performed, the effect of including these macro statements in the Fast Sysextract source on the processing time is minimal.

- CONFIG
- CTLUNIT
- IDLIST
- LINE
• LINEGRP
• NAME
• POOL
• STATION
• SUBPOOL
• TERMINAL
• TYPE
• VTAMPOOL

Note: The Fast Sysgen process does cross-check LTERM names with transaction code names.

**Fast Sysgen processing**

Fast Sysgen processes input in multiple phases.

The first phase reads IMS sygen macros and creates temporary internal sygen definitions in storage. These definitions remain in storage until all sygen input is read. After all stage 1 input is read, IMS resource definitions are created in storage. Control blocks vary in size depending on the IMS release. The following table shows the size of control blocks required for each IMS resource type.

*Table 9. IMS resource control block sizes*

<table>
<thead>
<tr>
<th>Resource type</th>
<th>Internal size</th>
<th>IMS V13 - V15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Database</td>
<td>16 bytes</td>
<td>200 bytes</td>
</tr>
<tr>
<td>Program</td>
<td>28 bytes</td>
<td>112 bytes</td>
</tr>
<tr>
<td>Transaction</td>
<td>68 bytes</td>
<td>184 bytes</td>
</tr>
<tr>
<td>Route Code</td>
<td>24 bytes</td>
<td>48 bytes</td>
</tr>
</tbody>
</table>

Storage for these resources is in the extended (above the 16-megabyte line) private storage. This includes private storage for Fast Sysgen processing.

The second phase of Fast Sysgen processing involves security. Security statements are read and validated, and the resulting definitions are held in extended private area storage.

The approximate storage requirements for security definitions are shown in the following table:

*Table 10. Security storage requirements*

<table>
<thead>
<tr>
<th>Matrix table</th>
<th>Internal of bytes</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Number of passwords times the maximum password length</td>
</tr>
<tr>
<td>B</td>
<td>(Number of passwords/8) times the number of password protected resources</td>
</tr>
<tr>
<td>C</td>
<td>(Number of terminals/8) times the number of terminal protected resources</td>
</tr>
<tr>
<td>D</td>
<td>2 bytes per transaction definition</td>
</tr>
<tr>
<td>E</td>
<td>2 bytes per LTERM defined in the last CTLBLKS or higher sygen</td>
</tr>
<tr>
<td>F</td>
<td>2 bytes per DATABASE definition</td>
</tr>
<tr>
<td>G</td>
<td>2 bytes per program definition</td>
</tr>
<tr>
<td>H</td>
<td>2 bytes per command verb</td>
</tr>
<tr>
<td>I</td>
<td>2 bytes per terminal defined in the last CTLBLKS or higher sygen</td>
</tr>
</tbody>
</table>
Table 10. Security storage requirements (continued)

<table>
<thead>
<tr>
<th>Matrix table</th>
<th>Internal of bytes</th>
</tr>
</thead>
<tbody>
<tr>
<td>J</td>
<td>2 bytes per transact macro</td>
</tr>
<tr>
<td>K</td>
<td>2 bytes per command verb</td>
</tr>
<tr>
<td>L</td>
<td>(Number of commands/8) times the number of transaction definitions</td>
</tr>
<tr>
<td>M</td>
<td>8 bytes per transaction with TCOMMAND authorization</td>
</tr>
<tr>
<td>N</td>
<td>2 bytes per transaction definition</td>
</tr>
<tr>
<td>O</td>
<td>Number of terminal definitions/8</td>
</tr>
</tbody>
</table>

Application group name (AGN) security definitions require additional storage. Each AGN definition included in the security generation source requires 24 bytes, and an additional 8 bytes per entry in the security source (AGLTERM, AGTRAN, or AGPROG statements).

Because of the processing that occurs during the security phase, there are transitional storage requirements during MATRIX row reduction and converting from temporary storage to final module creation. To take this additional storage into account, the largest of the storage areas in the preceding list should be added to the total storage requirement.

After final storage resident modules are successfully created, the third phase of processing begins. The Fast Sysgen process uses its own linkage editing process to create load modules in the MODBLKS and MATRIX data sets. When Fast Sysgen writes modules to the MODBLKS and MATRIX data sets, it uses the same approach to integrity that the IMS sysgen uses.

When updating a staging library, Fast Sysgen issues a reserve on the volume where the library is located, using the same QNAME (SYSIEWLP) and same RNAME as the linkage editor. When updating the A and B libraries, Fast Sysgen uses the QNAME (DFSOC001) and RNAME (library data set name). This enqueue processing ensures that other processes do not destroy the integrity of these data sets during the Fast Sysgen process.

During updates to the MATRIX data sets, Fast Sysgen first deletes any modules that could be created by this sysgen process. Because MATRIX modules are suffix dependent, only modules with the current suffix (as specified on the IMSGEN macro SUFFIX= parameter) are deleted. If MATRIX data sets are shared among multiple IMS systems and suffixes, this process will not interfere with the modules of other IMS systems.

MATRIX modules are deleted prior to MATRIX data set updates to ensure that only those MATRIX modules that are created by this security generation are included by the Fast Sysgen process during security processing. For example, if all passwords are removed from the IMS security source statements, Fast Sysgen ensures that no password-related MATRIX modules remain in the MATRIX data set after the Fast Sysgen process completes.

Fast Sysgen processing is fully compatible with IMS security generation processing. If desired, the IMS security generation process can be run after you run Fast Sysgen. Fast Sysgen processing creates the DFSISDBx module in the MODBLKS data set that the IMS security generation process requires to accurately produce MATRIX modules.
IMS maintenance impacts

Regular PTF maintenance to IMS stage 2 macros could result in SMP/E installing updates to the staging MODBLKS library as defined in the IMS target zone. Because the HP system definition process does not provide stage 2 JCL for SMP/E JCLIN, such maintenance would require an IMS MODBLKS system definition and JCLIN prior to the SMP/E APPLY.
Chapter 12. Using the JCLIN generator

The JCLIN generator provides a way to create SMP/E JCLIN input from a MODBLKS data set. This allows you to run a JCLIN before SMP/E maintenance is applied.

This section explains how to use the JCLIN generator to run JCLIN after an IMS sysgen.

Topics:
- “When you should run JCLIN” on page 202
- “Creating JCLIN” on page 203
- “When to use the JCLIN generator” on page 204
When you should run JCLIN

It is strongly recommended that you run JCLIN after every IMS sysgen, including a MODBLKS type sysgen.

MODBLKS syssgens update five modules in the MODBLKS data set. The source for these five modules is stored in SMP/E by means of the JCLIN process.

The macros used for creating these modules can be changed by normal IMS maintenance. The macros are: DFSPSBD, DFSSMB, DFSDMD, and DBFRCT. If a PTF updates one of these macros, SMP/E automatically reassembles the appropriate MODBLKS modules using the most recent source available to SMP/E, which is the stage 2 job stream processed by JCLIN.
Creating JCLIN

It is strongly recommended that you run JCLIN after every IMS sysgen, including a MODBLKS type sysgen.

Because IMS HP Sysgen Tools updates the MODBLKS data sets without creating a stage 2 job stream, the HP Sysgen JCLIN Generator was created to enable you to create and run JCLIN and to create and run JCLIN to ensure that the information on MODBLKS modules is current with the modules created by IMS HP Sysgen Tools.

A batch utility is available in the IOHJCLIN sample member of the SIOHSAMP data set. You can use the IOHJCLIN sample member to generate the input to the SMP/E JCLIN process. The utility reads the MODBLKS data set and creates the source code for the MODBLKS modules, which can be used for JCLIN.

The following PARM parameter is included in the JCL for this utility:

**PARM=**

Specifies the IMS nucleus suffix for which JCLIN statements are to be created. Multiple suffix identifiers can be specified by enclosing values in parentheses and separating them with commas. For example the following two PARM= specifications are valid:

- `PARM='SUFFIX=A'`
- `PARM='SUFFIX=(A,B,C)'`

The following DD statements are included in the JCL for this utility:

**STEPLIB**

Must specify both the IMS HP Sysgen Tools load library and the IMS RESLIB data set associated with the MODBLKS data sets specified in the JCL.

**IOHPRINT**

Shows any diagnostic messages associated with the running this utility.

**SYSUDUMP**

Provides dump diagnostics for abends.

**IOHPUNCH**

The stage 2 job stream created by the utility, which can be used as input to the SMP/E JCLIN process.

**MODSTAT/OLCSTAT**

Use the MODSTAT or OLCSTAT data set (but not both) to provide the information required for IMS HP Sysgen Tools to determine which MODBLKS data set is active (MODBLKSA or MODBLKSB). Ensure that you specify the MODSTAT or OLCSTAT data set name which is used by the IMS subsystem with the same SUFFIX= and MODBLKS data sets specified in this job. You can include both the MODSTAT and OLCSTAT DD statements, as long as one of the DD statements is a DD DUMMY (or DSN=NULLFILE).

**MODBLKSA, MODBLKSB**

The MODBLKS data sets used by the IMS system with the same SUFFIX and MODSTAT data set specified in this job. The MODSTAT data set is queried to identify the current data set which is used as the definition of the current IMS resources.
When to use the JCLIN generator

The JCLIN generator ensures that SMP/E is consistent with the MODBLKS target library.

You must run the utility before applying maintenance that impacts the MODBLKS data set. Maintenance would be necessary if the macros DFSPSBD, DFSSMB, DFSDMD, and/or DBFRCT are updated by IMS base product maintenance. If such maintenance occurs for the base product, it would have a HOLD for IOGEN, which would indicate that the JCLIN process might need to be run. However, you can run the JCLIN process whenever SMP/E maintenance is applied, which reduces the possibility of problems that could be caused by forgetting to update the JCLIN information held by SMP/E.
Chapter 13. Using the Sysgen Compare utility

IMS HP Sysgen Tools includes the Sysgen Compare utility, which lets you compare two sets of IMS control blocks. You can use this utility to verify that two sets of MODBLKS and MATRIX modules are exactly the same.

Topics:
- “What Sysgen Compare does” on page 206
- “Sysgen Compare JCL” on page 207
- “Sample Sysgen Compare report” on page 208
What Sysgen Compare does

Sysgen Compare analyzes and reports on the members present in each of the libraries, noting any size differences.

It lists the number of each kind of resource defined in the two MODBLKS data sets. It also provides a dump format listing of each control block that is different in the two MODBLKS data sets or is present in only one data set.

It is recommended that the initial run of Fast Sysgen be performed using test versions of the output MODBLKS and MATRIX data sets. The compare utility can then be used to compare the current traditional IMS sysgen control blocks with those generated by the Fast Sysgen process. Any discrepancies should be investigated to see if they were caused by changes to the IMS sysgen source statements, and if not, the discrepancies should be reported to IBM Software Support.
Sysgen Compare JCL

For a sample job that runs the Sysgen Compare utility, see sample member IOHCOMP in the SIOHSAMP data set.

**PARM field specification**

The EXEC statement for the compare utility contains one keyword parameter in the PARM field.

\[ \text{SUFFIX} = (v_1, v_2, \ldots) \]

This keyword identifies the suffix (or suffixes) of the modules to be compared by the utility. A suffix value is the same as that specified by the SUFFIX keyword of the IMMSGEN macro in the IMS stage 1 source. It is also referred to as the nucleus suffix. It is one character in length.

Multiple suffixes can be specified in a single process by enclosing the suffix characters in parentheses and separating them with commas. For example, to compare both suffixes 0 and 1, use `PARM= 'SUFFIX=(0,1)'`. To specify a single suffix for comparison, the parentheses are optional. For example, both `PARM= 'SUFFIX=(0)'` and `PARM= 'SUFFIX=0'` are valid.

**Sysgen Compare DD statements**

The DD statements for Sysgen Compare are described in this topic.

**STEPLIB**

The STEPLIB DD statement must include both the IMS HP Sysgen Tools program library and the IMS RESLIB data set. The RESLIB data set is used to determine the release of IMS by examining module DFSVC000.

**IOHPRINT**

This DD statement specifies the location of the output from the compare process.

**MODBLKS1**

The MODBLKS1 DD statement identifies the first of the two MODBLKS data sets to be compared.

**MODBLKS2**

The MODBLKS2 DD statement identifies the second of the two MODBLKS data sets to be compared.

**MATRIX1**

The MATRIX1 DD statement identifies the first of the two MATRIX data sets to be compared.

**MATRIX2**

The MATRIX2 DD statement identifies the second of the two MATRIX data sets to be compared.

**SYSUDUMP**

Although not required, this DD statement sometimes provides useful information about abnormal termination conditions. In the unlikely event of a Sysgen Compare problem, IBM Software Support might need the output from this DD statement for diagnostics.
A sample report from the Sysgen Compare utility is described in this topic.

The first section of the report lists the IMS release, suffix, and the names of the data sets to be compared.

The second section of the report lists each MODBLKS and MATRIX module name for that suffix. It shows the length of the module in both data sets, the status of the comparison, and a brief description of the module.

The Compare Status field can contain one of the following values:

**IDENTICAL**
Indicates that the data in the modules match exactly.

**IDENTICAL***
The asterisk indicates that a difference was found in a MATRIX module that does not affect the security definitions. This occurs because some MATRIX tables do not use all the fields in the MATRIX header, and the traditional IMS security generation process puts different values in these unused fields.

**NOT PRESENT**
Indicates that the module was not present in either data set being compared, and is a normal status.

**DIFFERENT SIZE**
Indicates that the modules were not the same size. The modules are different.

**DIFFERENT**
Indicates that the modules were the same size, but did not contain the same data.
The third section of the report lists the number of MODBLKS resources defined. If differences in MODBLKS modules are found, a hexadecimal dump of the differences will be listed.

If a resource is defined in one MODBLKS library but not the other, the following output will be produced for each unmatched resource. The dump shows the entire control block for the resource.

The following is an example of the output for an unmatched resource:

<table>
<thead>
<tr>
<th>Module</th>
<th>MODBLKS1</th>
<th>MODBLKS2</th>
<th>Compare Status</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFSDDIRM</td>
<td>001450</td>
<td>001450</td>
<td>IDENTICAL</td>
<td>DATABASE BLOCKS</td>
</tr>
<tr>
<td>DFSPDIRM</td>
<td>001248</td>
<td>001248</td>
<td>IDENTICAL</td>
<td>PROGRAM BLOCKS</td>
</tr>
<tr>
<td>DFSSMB0M</td>
<td>001430</td>
<td>001430</td>
<td>IDENTICAL</td>
<td>TRANCODE BLOCKS</td>
</tr>
<tr>
<td>DFSRCTEM</td>
<td>000058</td>
<td>000058</td>
<td>IDENTICAL</td>
<td>ROUTCODE BLOCKS</td>
</tr>
<tr>
<td>DFSISDBM</td>
<td>000518</td>
<td>000518</td>
<td>IDENTICAL</td>
<td>SECURITY BLOCKS</td>
</tr>
</tbody>
</table>

The hexadecimal output shows the entire control block for the resource.

Figure 142. Sample Sysgen Compare utility report
If differences are found in a control block defined to both MODBLKS data sets, the following information will be listed for each resource that does not match. Comparing the dump format data for each resource can reveal the control block differences using the control block DSECT information.

DIFFERENCES FOUND IN PROGRAM IRTIVPS1

DUMP OF MODBLKS1 PDIR
+000 00000000 00000000 C9D9E3C9 E5D7E2F1 ........IRTIVPS1*
+010 00000000 00000000 00000000 FFFF0000 *................*
+020 40000000 00000000 00000000 00000000 * ................*
+030 00000000 FFFFFFFF 00000000 00000000 * ................*
+040 00000000 00000000 ................*

DUMP OF MODBLKS2 PDIR
+000 00000000 00000000 C9D9E3C9 E5D7E2F1 ........IRTIVPS1*
+010 00000000 00000000 00000000 FFFF0000 *................*
+020 40400000 00000000 00000000 00000000 * ................*
+030 00000000 FFFFFFFF 00000000 00000000 * ................*
+040 00000000 00000000 ................*
Chapter 14. Using the Batch Reverse Sysgen utility

The IMS HP Sysgen Tools generates HP sygen source macros from either the incore IMS control blocks or from the active IMS MODBLKS, RDDS, or IMSRSC repository data set.

You can use parameters passed to the utility to select whether to generate sygen source to match the IMS control region incore control blocks or one of the following: IMS MODBLKS, RDDS, or IMSRSC repository data set.

Topics:
- “Batch Reverse Sysgen utility JCL” on page 212
- “Batch Reverse Sysgen utility PARM field” on page 213
- “Batch Reverse Sysgen utility return codes” on page 214
- “Batch Reverse Sysgen utility output report” on page 215
Batch Reverse Sysgen utility JCL

You can modify the JCL for the Batch Reverse Sysgen Utility.

To view the sample JCL for the Batch Reverse Sysgen utility, see sample job IOHBRVRS in the SIOHSAMP data set. The sample job also shows the DD statements required for the Batch Reverse Sysgen utility.

The following statements are supported.

STEPLIB
  (Required) It must reference the IMS HP Sysgen Tools load library (SIOHLINK).

IOHOPT
  (Required) It specifies the IMS HP Sysgen Tools IOHOPT data set. This data set must include the options member for the IMSID specified in the PARM field.

IOHPRINT
  (Required) It specifies the output report DD definition. The DCB attributes are RECFM=FBA and LRECL=133.

SYSABEND
  (Optional) It specifies the dump output DD.

IOHPUNCH
  (Required) It specifies the output DD statement. IMS sysgen source macros are written to this DD statement. The DCB information must be RECFM=FB and LRECL=80. The data set specified for this DD may be either a sequential data set (DSORG=PS) or a PDS with a member name specified in the JCL.
Batch Reverse Sysgen utility PARM field

Options for running the Batch Reverse Sysgen utility are specified in the PARM field of the job step.

You can specify two parameters, both of which are specified in the form keyword=value. The sample job provides JCL symbols to assist with specifying the PARM field. The following keywords are permitted; each is required.

**IMSID=**

IMSID= defines the IMSID of an IMS subsystem. The IMS subsystem need not be running on the same MVS system as the Batch Reverse Sysgen utility.

If the CTLBLKS= parameter is specified as CORE, IMS must be running when the Batch Reverse Sysgen utility runs. If the CTLBLKS= parameter is specified as DASD, IMS need not be running.

The specified IMSID must have an IMSID options member in the IOHOPT DD statement in the Batch Reverse Sysgen utility JCL.

**CTLBLKS=**

CTLBLKS= defines where the Batch Reverse Sysgen utility obtains the definitions from which IMS sysgen source macros are generated.

**CORE**

Specifying CTLBLKS=CORE causes the Batch Reverse Sysgen utility to find the specified IMS subsystem and to obtain IMS sysgen resource attributes from the incore control blocks currently being used by that IMS subsystem.

**DASD**

Specifying CTLBLKS=DASD obtains IMS sysgen resource attributes from the currently active MODBLKS, RDDS, or IMSRSC repository data set.
**Batch Reverse Sysgen utility return codes**

The Batch Reverse Sysgen utility indicates success or failure by means of a return code presented at the end of the job step.

The following return codes are possible:

- **0**  The utility completed successfully, and all IMS sysgen macros required to reproduce the IMS configuration were written to the IOHPUNCH DD.

- **8**  An error occurred while the utility was running. Review the job output (either in the IOHPRINT or JES job log) to determine the cause of the error.
Batch Reverse Sysgen utility output report

The Batch Reverse Sysgen utility provides a short report describing the input parameters and the number of resources for which IMS sysgen macros were created.

Here is a Batch Reverse Sysgen utility sample report.

```
PAGE 1 IMS SYSGEN TOOLS VERSION 2.4.0 (5665-P43) FASTGEN UTILITY
DATE: 05/05/2017
TIME: 22:35:00

IOHBRVRS - REVERSE IMS SYSGEN

IOH3241I OPTIONS IN USE: IMSID=IMS9 CTLBLKS=NONE

IOH3243I IMS IMS9 INFORMATION RETRIEVED - IMS VERSION 13.1
IOH3243I NUMBER OF DEFINED DATABASES 13
IOH3243I NUMBER OF DEFINED PROGRAMS 59
IOH3243I NUMBER OF DEFINED TRANS 26
IOH3243I NUMBER OF DEFINED RTCODES 3
```

Figure 143. Batch Reverse Sysgen utility sample output

In addition to this report, IMS sysgen macros are written to the data set described by the IOHPUNCH DD statement.
Chapter 15. Using the Batch Search utility

The Batch Search utility searches definitions of databases, programs, transactions, and routing codes in IMS active system control blocks (CORE) or data sets (MODBLKS, RDDS, or IMSRSC repository) for user-specified search words. It then generates corresponding sysgen source macros (DATABASE, APPLCTN, TRANSACT, and RTCODE).

Topics:

- “Batch Search utility JCL” on page 218
- “Batch Search utility return codes” on page 220
Batch Search utility JCL

You can modify the JCL for the Batch Search utility.

To view sample JCL for the Batch Search utility and its required DD statements, see sample job IOHBSRCH in the SIOHSAMP data set.

Batch Search utility DD statements

The following DD statements are supported:

STEPLIB
(Required) This statement must reference the IMS HP Sysgen Tools load library (SIOHLINK).

IOHOPT
(Required) This statement specifies the IMS HP Sysgen Tools IOHOPT data set. This data set must include the options member for the IMSID specified in the IMSID= control card.

IOHPRINT
(Required) This statement specifies the output report DD definition. The DCB attributes are RECFM=FBA and LRECL=133.

SYSABEND
(Optional) This statement specifies the dump output DD.

IOHPUNCH
(Required) This statement specifies the output DD statement. IMS sysgen macros are written to the data set specified by this DD statement. The DCB information must be RECFM=FB and LRECL=80. The data set specified for this DD can be a sequential data set (DSORG=PS) or a partitioned data set (PDS) with a member name specified in the JCL.

SYSIN
(Required) This statement specifies the location of the data set that contains IMS HP Sysgen Tools control cards.

Batch Search utility control cards

As shown in the sample job, control cards specify the parameters for running the Batch Search utility.

Control cards might include comment cards, which are identified with an asterisk (*) in column 1 of the statement. Each record in the SYSIN file can specify only one statement. Statements are written in the form keyword=value. At least one blank must follow the value specified; any information that follows the blank is ignored.

Each control card must include a keyword. The keyword can be in any position on the record. The keyword must be followed by zero or more blanks, an equal sign (=), and the value for the keyword. The value can be enclosed in parentheses.

IMSID=
Defines the IMSID of an IMS subsystem. The IMS subsystem does not need to be running on the same MVS system as the Batch Search utility.

If the CTLBLKS= parameter is specified as CORE or as DASD for the repository data set, IMS must be running when the Batch Search utility is running. If the CTLBLKS= parameter is specified as DASD for MODBLKS or RDDS, IMS does not need to be running.
The specified IMSID must have an IMSID options member in the IOHOPT DD statement in the Batch Search utility JCL.

**CTLBLKS=**
Defines where the Batch Search utility searches to obtain definitions of databases, programs, transactions, and routing codes, which are used for generating IMS sysgen source macros.

**CORE** If CTLBLKS=CORE is specified, the Batch Search utility searches the specified IMS subsystem and obtains IMS sysgen resource attributes from the incore control blocks currently being used by that IMS subsystem.

**DASD**
If CTLBLKS=DASD is specified, the Batch Search utility obtains IMS sysgen resource attributes from the currently active MODBLKS, RDDS, or IMSRSC repository data set.

**SRCHLST=**
Defines search words. Search words can be DBD names, PSB names, transaction codes, and routing codes. The maximum number of search words is 2560. If more than one search word is specified, separate the search words with a comma, and enclose the list in parentheses. For example, SRCHLST=(dbname1,dbname2) searches the definitions that are named dbname1 and dbname2.
Batch Search utility return codes

The Batch Search utility indicates success or failure with a return code at the end of the job step.

The following return codes are possible:

0  The utility completed successfully. All search words that you specified were processed and all corresponding sysgen source macros were written to the IOHPUNCH DD.

4  The utility completed successfully, but target definitions were not found for some of the search words you specified. Therefore, one or more sysgen source macros were not written to the IOHPUNCH DD. The search words that were not found are identified in the IOH3204E message.

8  An error occurred while the utility was running. Review the job output in the IOHPRINT data set or JES job log to determine the cause of the error.
Chapter 16. Using the Batch IMSID Options utility

The HP Sysgen Batch IMSID Options utility, IOHBIMS, lists or updates the IMSID options module stored in the IOHOPT data set.

The batch utility provides an alternative to the ISPF interface documented in section “Defining IMS HP Sysgen Tools options” on page 39.

Using the batch utility has advantages and disadvantages over using the ISPF interface to edit IMSID options modules. The ISPF interface automatically captures the IMS system data set names allocated to the IMS control region, such as the RESLIB, MODSTAT/OLCSTAT, MODBLKS and MATRIX data sets. However, the ISPF interface requires APPC/MVS to be configured properly in order to obtain information from the IMS control region. If APPC/MVS is not configured or if IMS is not started, the ISPF interface cannot be used to create IMSID options modules.

IOHBIMS, on the other hand, can be used when IMS is not started or when APPC/MVS is not configured. The Batch IMSID Options utility can be used to list the information present in IMSID options modules, or to create and update IMSID options modules.

Topics:
- “IMSID options values” on page 222
- “Batch IMSID Options utility JCL” on page 225
- “Batch IMSID Options utility LIST function” on page 226
- “Batch IMSID Options utility UPDATE function” on page 227
IMSID options values

The IMSID options module stores information about each IMS system.

It is used by the ISPF interface, by HP Sysgen running in an APPC initiator on the target MVS system, and by many HP Sysgen batch utilities. HP Sysgen attempts to validate the options variables whenever possible. However, use care in specifying the values in the options module, as an incorrect data set name could result in an update of the wrong data set, which could cause an IMS control region abend during the next IMS restart.

The options values that can be specified are listed in the following table, along with a description of each value.

Table 11. Batch IMSID options values

<table>
<thead>
<tr>
<th>Options values</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTH_USERID</td>
<td>The HP Sysgen authorized user ID. Use this user ID to perform activities associated with the installation of an HP Sysgen resource update list.</td>
</tr>
<tr>
<td></td>
<td>This value must be specified as a name of 8 characters or less.</td>
</tr>
<tr>
<td>PSB_NAME</td>
<td>The HP Sysgen PSB name. This is the PSB name that is used by HP Sysgen to issue IMS commands when APPC/IMS is not available.</td>
</tr>
<tr>
<td></td>
<td>This value must be specified as a name of 8 characters or less.</td>
</tr>
<tr>
<td>AGN_NAME</td>
<td>The Application Group Name to be used with the HP Sysgen PSB name.</td>
</tr>
<tr>
<td></td>
<td>This option is only required if you use AGN security. If AGN security is not in use, leave the value blank or omit the statement completely. If AGN security is active, specify a name of 8 characters or less.</td>
</tr>
<tr>
<td>TP_NAME</td>
<td>The APPC TP name created for the HP Sysgen APPC transaction program and specified in the IOHTPADD job.</td>
</tr>
<tr>
<td></td>
<td>This value must be specified as a name of 64 characters or less.</td>
</tr>
<tr>
<td>SYMDEST</td>
<td>The APPC symbolic destination associated with the MVS system where this IMS subsystem runs. This name may have been created using the IOHSIADD job.</td>
</tr>
<tr>
<td></td>
<td>This value must be specified as a name of 8 characters or less.</td>
</tr>
<tr>
<td>SUFFIX</td>
<td>The IMS nucleus suffix. This name is the same as that specified in the IMS control region PROC or in the DFSPBxxx member of the IMS PROCLIB data set.</td>
</tr>
<tr>
<td></td>
<td>This value must be specified as a single character.</td>
</tr>
<tr>
<td>OLC</td>
<td>This value specifies whether IMS online change is LOCAL or GLOBAL.</td>
</tr>
<tr>
<td></td>
<td>This value must be specified as either LOCAL or GLOBAL.</td>
</tr>
<tr>
<td>IOHLOG</td>
<td>The data set name of the HP Sysgen log data set for this IMS system.</td>
</tr>
<tr>
<td>RESLIB</td>
<td>The data set name of the IMS RESLIB data set used by this IMS subsystem.</td>
</tr>
<tr>
<td></td>
<td>The RESLIB must contain modules DFSISDCx and DFSVNUCx (where “x” is the SUFFIX).</td>
</tr>
</tbody>
</table>
Table 11. Batch IMSID options values (continued)

<table>
<thead>
<tr>
<th>Options values</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MODSTAT</td>
<td>The data set name of either the MODSTAT or OLCSTAT data set that is used by this IMS subsystem.</td>
</tr>
<tr>
<td>MODBLKLS</td>
<td>The data set name of the staging MODBLKLS data set.</td>
</tr>
<tr>
<td>MODBLKLSA</td>
<td>The data set name of the MODBLKSA data set used by this IMS subsystem.</td>
</tr>
<tr>
<td>MODBLKSB</td>
<td>The data set name of the MODBLKSB data set used by this IMS subsystem.</td>
</tr>
<tr>
<td>USER_MODBLKS</td>
<td>The data set name of an optional backup data set where the current MODBLKLS data set members are to be maintained.</td>
</tr>
<tr>
<td>MATRIX</td>
<td>The data set name of the staging MATRIX data set.</td>
</tr>
<tr>
<td>MATRIXA</td>
<td>The data set name of the MATRIXA data set used by this IMS subsystem.</td>
</tr>
<tr>
<td>MATRIXB</td>
<td>The data set name of the MATRIXB data set used by this IMS subsystem.</td>
</tr>
<tr>
<td>USER_MATRIX</td>
<td>The data set name of an optional backup data set where the current MATRIX data set members are to be maintained.</td>
</tr>
<tr>
<td>GEN_MEMBER</td>
<td>The member name of the initial IMS Sysgen source. If the GEN_MEMBER field is specified, the data set names in the GEN_SOURCE variable must be PDS data sets without member names. If the GEN_MEMBER field is blank, then the GEN_SOURCE data sets must be either sequential data sets or PDS data sets with member names specified.</td>
</tr>
</tbody>
</table>
| GEN_SOURCE     | The data set names where IMS Sysgen source is located. There may be up to 30 data set names specified. All data sets specified must have the same data set organization – either sequential (or PDS with a member name) or PDS without a member name. When PDS data sets are specified, the GEN_MEMBER field must not be blank, as it contains the base Sysgen source member (that may contain assembler COPY statements).

When specifying multiple GEN_SOURCE data sets, each data set must be completely specified on a line, and a comma must be used to separate data set names. |
| SEC_SOURCE     | The data set names where IMS security gen source is located. There may be up to 10 data set names specified. Each specified data set must be either a sequential data set or a PDS with a member name specified. |

When specifying multiple SEC_SOURCE data sets, each data set must be completely specified on a line, and a comma must be used to separate data set names. |
| DRD            | Indicates whether IMS Dynamic Resource Definition (DRD) is active in this IMS system. The value must be specified as either ENABLED or DISABLED. If a value is not specified, the default is DISABLED. If DRD=ENABLED is specified, you must also code values for the RDDS option to define the data set names that are used by IMS for DRD. |
Table 11. Batch IMSID options values (continued)

<table>
<thead>
<tr>
<th>Options values</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>REPOSITORY</td>
<td>Indicates whether IMS resource definition (IMSRSC) repository is active in this IMS system.</td>
</tr>
<tr>
<td></td>
<td>The value must be specified as either ENABLED or DISABLED. If a value is not specified, the</td>
</tr>
<tr>
<td></td>
<td>default is DISABLED.</td>
</tr>
<tr>
<td>RDDS</td>
<td>Defines the data set names of the RDDSs that are used by this IMS system.</td>
</tr>
<tr>
<td></td>
<td>Specify the data sets that are used by IMS to store resource definitions. IMS HP Sysgen Tools</td>
</tr>
<tr>
<td></td>
<td>automatically determines which data set contains the current definitions.</td>
</tr>
<tr>
<td></td>
<td>Data sets must be separated by commas, and each data set must be coded completely on a</td>
</tr>
<tr>
<td></td>
<td>statement. The RDDSs can be coded on multiple statements by leaving a comma at the end of each</td>
</tr>
<tr>
<td></td>
<td>statement to continue coding additional data set names on the next line.</td>
</tr>
<tr>
<td></td>
<td>IMS HP Sysgen Tools supports the specification of up to 24 RDDS names.</td>
</tr>
</tbody>
</table>

If you are using the Batch IMSID Options utility because you do not want to install or use the ISPF interface, and you only plan to use the batch Fastgen process, you need only specify values for the following keywords:

- SUFFIX
- OLC
- RESLIB
- MODSTAT
- MODBLKS
- MODBLKSA/B
- MATRIX
- MATRIXA/B
- GEB_MEMBER
- GEN_SOURCE
- SEC_SOURCE

All values except SUFFIX and OLC can be overridden by specifying data set names in IOHFGEN JCL.
Batch IMSID Options utility JCL

You can modify the JCL for the Batch IMSID Options utility.

For the Batch IMSID Options utility sample JCL, see the IOHBIMS member in the SIONSAMP data set.

The following DD names are used by the IOHBIMS utility:

Table 12. Batch IMSID Options DD statements

<table>
<thead>
<tr>
<th>DD names</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEPLIB</td>
<td>Specifies the data set name of the HP Sysgen load library, SIOHLINK.</td>
</tr>
<tr>
<td>IOHOPT</td>
<td>Specifies the data set name of the IOHOPT data set. This library must be a PDS with RECFM=U and a block size of at least 4096. When using the LIST function to show the options currently defined, this library must contain a member named IOH@ followed by the IMSID. When using the UPDATE function, the IOH@ims ID member will be created or replaced.</td>
</tr>
<tr>
<td>IOHPRINT</td>
<td>Report output file. The DCB attributes for the output file are RECFM=FBA and LRECL=133. The reports produced by the utility are documented in “Batch IMSID Options utility LIST function” on page 226 and “Batch IMSID Options utility UPDATE function” on page 227.</td>
</tr>
<tr>
<td>SYSABEND</td>
<td>Dump output file.</td>
</tr>
<tr>
<td>SYSIN</td>
<td>Input file used for the UPDATE function. This DD is not used and can be omitted for the LIST function. For the UPDATE function, the statements included in the SYSIN file are documented in “Batch IMSID Options utility UPDATE function” on page 227.</td>
</tr>
</tbody>
</table>

The following figure shows the four symbolic JCL parameters that are included in the sample job to simplify JCL customization:

Table 13. Batch IMSID Options Symbolic JCL variables

<table>
<thead>
<tr>
<th>JCL parameters</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIOHLINK</td>
<td>The data set name of the HP Sysgen load library. This value is used in the STEPLIB DD of the utility JCL.</td>
</tr>
<tr>
<td>IOHOPT</td>
<td>The data set name of the IOHOPT data set. This value is used in the IOHOPT DD of the utility JCL.</td>
</tr>
<tr>
<td>FUNCTION</td>
<td>The function that the utility is to perform. This value is required, and it must be specified as either LIST or UPDATE. Batch IMSID Options utility functions are further described in the sections that follow.</td>
</tr>
<tr>
<td>IMSID</td>
<td>The IMSID whose options values are to be listed or updated. This value must be specified, and it must be four characters in length.</td>
</tr>
</tbody>
</table>
Batch IMSID Options utility LIST function

The LIST function provides the capability to list the currently-specified IMSID options values in report form.

The sample JCL in SIOHSAMP member IOHBIMS can be used for both the LIST function and the UPDATE function. Note that the statements present in the SYSIN DD are not read when executing the LIST function.

The IOHPRINT output report produced by the LIST function shows each value specified in the IMSID options module. The following figure shows a sample report:

```
LIST OF OPTIONS VALUES FOR IMS MAA1

AUTH_USERID = IOHAUTH
PSB_NAME = IOHPSB
AGN_NAME =
TP_NAME = IOH240_IMS_HP_SYSGEN
SYMDEST = SYS1
SUFFIX = 9
OLC = LOCAL
DRD = ENABLED
REPOSITORY = DISABLED
IOHLOG = IMS.MAA1.IOH.IOHLOG
RESLIB = IMS.MAA1.SDFSRESL
MODSTAT = IMS.MAA1.MODSTAT
MODBLKS = IMS.MAA1.MODBLKS
MODBLKSA = IMS.MAA1.MODBLKSA
MODBLKSB = IMS.MAA1.MODBLKSB
USER_MODBLKS =
MATRIX =
MATRIXA =
MATRIXB =
USER_MATRIX =
GEN_MEMBER =
GEN_SOURCE = IMS.MAA1.IMSGEN.CNTL(MAA1MACS)
              IMS.MAA1.IMSGEN.CNTL(END)
SEC_SOURCE =
RDDS = IMS.MAA1.RDDS1
       IMS.MAA1.RDDS2
       IMS.MAA1.RDDS3
```

The variables that are shown in this sample are documented in “IMSID options values” on page 222. The last three options, GEN_SOURCE, SEC_SOURCE, and RDDS can have multiple data set names. For example, in this sample report, two data set names are listed for GEN_SOURCE and three for RDDS. Also, the RDDS option is included only if DRD=ENABLED is specified.
Batch IMSID Options utility UPDATE function

The UPDATE function provides the capability to create or update the values specified in the IMSID options stored in the IOHOPT data set.

All values stored in the IMSID options are replaced with the specifications read from the SYSIN DD. When using the update function, you should always specify all the values in the IMSID options, not just specific values being updated. Other than syntax checking, no validation is completed for the values specified, so use caution when specifying the values in the SYSIN data.

When using the UPDATE function, the statements coded in the SYSIN DD are used to populate a new version of the IMSID options module. All statements are coded in a keyword = value type of syntax. Statements with an asterisk (*) in the first position of a statement are considered comment statements.

Only GEN_SOURCE, SEC_SOURCE, and RDDS statements can be continued. To continue one of these statements, code a comma after the data set name and continue with the next data set name on the next statement. An example of continuation is shown in the sample SYSIN data.

An example of the SYSIN statements is included in the sample job distributed in the SIOHSAMP data set member IOHBIMS.

Note that comment statements are present in the first 5 statements. The remaining statements show the keyword=value syntax used. Blanks are not required between the keyword, the equal sign, and the value, but they may be present. The keywords need not start in the first position of the statement, even though the example shows all keywords starting in column 1 for readability.

The last two statements show examples of continuation statements. The GEN_SOURCE and SEC_SOURCE statements are the only statement types that allow continuations, which show multiple data set names specified for each value.
Chapter 17. Using the Merge Clone utility

The Merge Clone utility creates a common set of application, transaction, and database definitions across multiple IMS systems.

Topics:
- “What Merge Clone does” on page 230
- “Merge Clone utility restrictions” on page 231
- “Conflict resolution” on page 232
- “Merge Clone JCL” on page 234
- “Merge Clone reports” on page 238
- “Merge Clone return codes” on page 239
What Merge Clone does

The IMS Merge Clone utility reads the IMS MODBLKS data sets and combines the definitions of up to 64 IMS systems.

After the process has completed, each IMS system will have the same set of APPLCTN, TRANSACT and DATABASE definitions. Each application and transaction definition will have the same attributes across all systems with the possible exception of the SYSID value. Each database definition will have the same attributes across all systems with the possible exception of the ACCESS value.

The Merge Clone program performs automatic generation of SYSID values. It does this by analyzing the PSB (from PSBLIB) and determining which IMS region has the proper database access to meet the PSB PROCOPT requirements. For each IMS system where the PROCOPT requirements are met, the transaction is defined as local. For systems that do not meet the PROCOPT requirements, a SYSID value is added to the definition to route the message to an IMS where the requirements are met.

Transaction routing can be forced by providing input to the Merge Clone program. Using control cards, you can specify on which system a transaction must run. You can specify the same transaction on any or all IMS regions.

Automatic determination of the SYSID value is done only for the transactions that are local somewhere inside a sysplex. SYSID values are not changed for transactions that are remote outside of the sysplex. For example, if you are merging IMS1 and IMS2, and they have transactions that are remote to IMS3, the transactions that run on IMS3 will not have their SYSIDs changed on IMS1 or IMS2.
Merge Clone utility restrictions

The Merge Clone utility requires that resources with the same name are, in fact, the same entity. If you are merging IMS1 and IMS2 and they both have database DB01 defined, it must be the same database. It must use the same DBD and it must have the same DSN. This is true for applications, as well. If you are merging IMS1 and IMS2 and they both have application PGM1, it must be the same PSB in both systems.
Conflict resolution

When merging systems, it is possible that conflicts exist among the attributes assigned to a resource defined in multiple systems.

The Merge Clone program will resolve these conflicts using the following philosophy:

1. Use the least restrictive parameter.
   For example, if there is a conflict in the SNGLSEG/MULTSEG parameter, MULTSEG would be used because it is less restrictive than SNGLSEG. A program that processes single segment messages can work when the transaction is defined as MULTSEG, but the reverse is not true.

2. Use the largest value.
   For example, if one system had a SPA size of 100 and the other had 500, Merge Clone would define SPA=500 on all systems.

3. Use the setting of the “Default Option.”
   If steps 1 and 2 do not resolve a conflict for a parameter, Merge Clone selects a “default option.” See the default options listed for each resource.

4. Set in any system, set it in all.
   For example, if one system has a database defined as RESIDENT, the resident option will be set for all systems.

Resolving TRANSACT conflicts

Merge clone utility TRANSACT conflicts are resolved by using a specific criteria.

The following illustrates how conflicts are resolved for all TRANSACT options:

- **Least restrictive**
  - MSGTYPE=(SNGLSEG | MULTSEG)

- **Largest value**
  - SPA size
  - EMHB size
  - SEGSZ (0 being the largest)
  - SEGNO (0 being the largest)
  - PROCLIM count
  - PROCLIM seconds
  - PARLIM
  - MAXRGN
  - PRTY limit count
  - PRTY normal
  - PRTY limit

- **Default option**
  - MSGTYPE=(class)
  - MSGTYPE=(RESPONSE | NONRESPONSE)
  - EDIT=(UC | ULC)
  - MODE=MULT | SNGL
  - DCLWA=YES | NO
  - ROUTING=NO | YES
  - WFI
  - SCHD=1 | 2 | 3 | 4
  - SERIAL=NO | YES
  - FPATH=NO | YES | size
  - Program name used by transaction
  - SYSID if remote outside of sysplex
• **Set in any, set in all**
  – INQ=NO (else set to INQ=YES)
  – INQ=RECOVER (else set to INQ=NORECOV)
  – EDIT=(name)
  – RTRUNC/STRUNC (Uses first defined value. This is because the default option might be from an IMS Version 5 system that does not support these options.)

**Resolving APPLCTN conflicts**

Merge clone utility APPLCTN conflicts are resolved by using a specific criteria.

The following illustrates how conflicts are resolved for application definitions:

• **Default Option**
  – FPATH=NO\YES\size (value is obtained from the transaction assigned to this application)
  – LANG= (only if GSPB selected)

• **Set in Any, Set in All**
  – RESIDENT
  – DOPT (unless set to Resident in any system)
  – SCHDTYP=PARALLEL (otherwise set to Serial)
  – PGMTYPE=(TP) (otherwise set to Batch)
  – GPSB (If GPSB is set in some but not in all, the Merge Clone program will see if a PSB really exists in PSBLIB. If so, GPSB is removed. If there is no PSBLIB member, GPSB is added to all systems.)

**Resolving database conflicts**

Merge clone utility database conflicts are resolved by using a specific criteria.

The following list illustrates how conflicts are resolved for database definitions:

- **Set in Any, Set in All**
  - RESIDENT
  - ACCESS=

Database ACCESS is determined by using the first rule that applies:

1. If the database is set to Update as part of the IOHSHLVL input, (see “IOHSHLVL (forced update access control)” on page 235) it will be set to ACCESS=UP on all IMS systems.
2. If ACCESS=EX is found in any system, ACCESS=RO will be added to any system where the database is being added for the first time (other systems will not have their ACCESS changed).
3. If ACCESS=UP found on more than one system, it is assumed the database is SHARELVL(3) in the RECON data sets and is made ACCESS=UP on all IMS systems.
4. If ACCESS=UP on only one IMS system, then ACCESS=RO for any system where the database is being added for the first time (other systems will not have their ACCESS changed).
5. If ACCESS=RO or RD, use the first ACCESS parameter as the default for all systems where the database is being added for the first time.
The JCL that is used by the Merge Clone utility is composed of DD names that are required every time you run the program and DD names that are dependent upon user-supplied control cards.

For a sample of the required Merge Clone JCL, see member IOHMERGE in the SIOHSAMP library.

**Merge Clone DD statements**

The DD statements for the Merge Clone utility are described as follows:

**STEPLIB**
The STEPLIB must refer to the library where the IMS HP Sysgen Tools were installed.

**IOHLIST**
This DD statement specifies the location for the output from the control card analysis and environment setup processing. This includes source listings and error messages.

It is recommended this be a SYSOUT data set, but if placed to DASD the DCB requirements are LRECL=121 and RECFM=FBA.

**IOHEXCPT**
This DD statement specifies the location of the output from conflict resolution processing, PSBLIB/DBDLIB analysis, and the stage 1 generation reports.

It is recommended this be a SYSOUT data set, but if placed on DASD the DCB requirements are LRECL=121 and RECFM=FBA.

Error messages (any message ID that ends with a “W”) written to this file will have a character string of two asterisks (“**”) that can be used to locate the messages. This should aid in finding any errors in the program listings.

**IMS**
This DD statement specifies the location from which the Merge Clone program will load the PSB and DBD modules. The Merge Clone program uses the PSBs and DBDs loaded from this DD statement to perform the transaction routing analysis and build. The members in this data set concatenation must accurately reflect the members used in your IMS systems.

**IOHPUNCH**
This DD statement specifies the location for the stage 1 IMS sysgen source output created by Merge Clone. Two members are created in this library for each IMSID processed by the utility. All program and transaction related macros for an IMS system are placed in a member named xxxxPGMS, where xxxx is the IMSID of that system. The database related macros for that IMS are placed in a member named xxxxDBDS.

The data set defined by this DD statement must be a PDS (DSORG=PO) with LRECL=80 and RECFM=FB. Be sure to allocate sufficient space and directory blocks for the size and number of members created.

**MBLKxxxx DD**
Merge Clone requires a DD statement for the IMS MODBLKS data set of each IMSID specified in the IOHIIMSID control cards. (See [IOHIIMSID](#))
The DD name is determined by appending the four byte IMSID to the constant 'MBLK'. The example shown following Table 18 on page 236 would require the following DD statements:

```
//MBLKWIMS1 DD DISP=SHR,DSN=modblks-dsn for IMS1
//MBLKWIMS2 DD DISP=SHR,DSN=modblks-dsn for IMS2
//MBLKWIMS3 DD DISP=SHR,DSN=modblks-dsn for IMS3
```

**IOHAFFIN (forced transaction routing control)**

This DD statement specifies the location from where the control cards are read to force transaction routing. A control card contains the IMSID of where a transaction needs to run and the actual transaction name. The input data must have an LRECL of 80 and the control cards must conform to the syntax shown as follows:

Table 14. Forced transaction routing control card syntax

<table>
<thead>
<tr>
<th>Columns</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 4</td>
<td>ims-id or an asterisk (*) for a comment card</td>
</tr>
<tr>
<td>5</td>
<td>blank</td>
</tr>
<tr>
<td>6 on</td>
<td>transaction name</td>
</tr>
</tbody>
</table>

For example:

IM1 PART

A separate control card is required for each transaction. The same transaction can be forced to run on multiple IMS systems.

**IOHSHLVL (forced update access control)**

This DD statement specifies the location from where the control cards are read to force ACCESS=UP on databases. A control card contains the name of the database that will be made ACCESS=UP in all IMS systems. The input data set must have an LRECL of 80 and the control cards must conform to the syntax shown as follows:

Table 15. Forced ACCESS=UP control card syntax

<table>
<thead>
<tr>
<th>Columns</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 8</td>
<td>Database name or an asterisk (*) for a comment card</td>
</tr>
</tbody>
</table>

For example:

DI21PART

**IOHIMSID (specifying IMS systems)**

This DD statement specifies the location from where the control cards are read that inform the Merge Clone program what systems are to be merged or cloned. There are three types of control cards and at least one of each is required for each IMS system being processed.

The three types of control cards are SUFFIX, VERSION, and SYSID. If you are processing more than two IMS regions, you will need more than one SYSID card for each IMS. The input data set must have an LRECL of 80. The control card statements must not go beyond column 72.

The Suffix control card must conform to the syntax shown as follows:
Table 16. Suffix control card syntax

<table>
<thead>
<tr>
<th>Columns</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 4</td>
<td>ims-id or an asterisk (*) for a comment card</td>
</tr>
<tr>
<td>5</td>
<td>blank</td>
</tr>
<tr>
<td>6 on</td>
<td>SUFFIX=x, where x is the gen suffix for the IMS system</td>
</tr>
</tbody>
</table>

The value specified for the suffix must be the gen suffix for the IMSID starting in column 1. For example:

IMS1 SUFFIX=1

The Merge Clone program uses this value to determine which modules to load from the associated MODBLKS data set.

The VERSION control card must conform to the syntax shown as follows:

Table 17. Version control card syntax

<table>
<thead>
<tr>
<th>Columns</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 4</td>
<td>ims-id or an asterisk (*) for a comment card</td>
</tr>
<tr>
<td>5</td>
<td>blank</td>
</tr>
<tr>
<td>6 on</td>
<td>VERSION=(v.r), the version and release</td>
</tr>
</tbody>
</table>

The value specified for the version must match the IMS version of the MODBLKS data set associated with the IMSID. Valid values for v.r are 13.1 and later. For example:

IMS1 VERSION=(13.1)

Merge Clone uses this value to determine which IOH module to use to read the MODBLKS.

The SYSID control card must conform to the syntax shown as follows:

Table 18. SYSID control card syntax

<table>
<thead>
<tr>
<th>Columns</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 4</td>
<td>ims-id or an asterisk (*) for a comment card</td>
</tr>
<tr>
<td>5</td>
<td>blank</td>
</tr>
<tr>
<td>6 on</td>
<td>SYSID=(rmt,lcl), the remote and local IDs</td>
</tr>
</tbody>
</table>

The SYSID parameter tells Merge Clone about the environment that it is processing. You must supply an SYSID control card for all systems that you want to process. For each IMSID that you specify, you must include every SYSID that is local to that system. And you must make each IMSID's local SYSID a remote SYSID in the other IMS systems being processed. Simply put, each IMS in this sysplex must have a remote SYSID that points to all other IMS systems local SYSIDs. There might still exist SYSIDs that are outside the sysplex.

For example, assume that your configuration consists of IMS1, IMS2, IMS3 and IMS4. IMS1, IMS2, and IMS3 reside in the same shared DASD complex and are being merged. IMS4 resides in a separate JES complex and, therefore is not participating in the merge. The IMS systems contain the following local SYSIDs.
IMS1, IMS2, and IMS3 must each define all of their local SYSIDs to the Merge Clone program. They must also define remote SYSIDs to each of the other system’s local SYSIDs. The IOHIMSID SYSID control cards to process this example are:

IMS1 SYSID=(21,11)
IMS1 SYSID=(31,11)
IMS2 SYSID=(11,21)
IMS2 SYSID=(31,21)
IMS3 SYSID=(11,31)
IMS3 SYSID=(21,31)

In this example, IMS4 will be treated as being outside of the sysplex so any transactions routed to IMS4 will be unaffected by the Merge Clone program.
Merge Clone reports

The Merge Clone utility produces several reports listing things such as control card input, processing exceptions, and program processing status. The reports are written to the data sets identified by the IOHLIST and IOHEXCPT DD statements.

IOHLIST reports

The IOHLIST DD statement data set contains several reports that list the control card input and the current IMS system contents.

The reports written to IOHLIST include:

- Control Statement listing. This is a listing of the input records read from file IOHIMSID and any error messages associated with this input.
- MODBLKS Extraction Services listing. This report contains the number of DATABASE, APPLICTN and TRANSACT macros currently defined in each IMS region.
- Transaction Affinity Input listing. This report lists all user-forced routed transactions.
- Data Base Sharelvl(3) listing. This report lists the databases that will be set to ACCESS=UP in all IMS regions.

IOHEXCPT reports

The IOHEXCPT DD statement data set contains several reports that show the results of conflict resolution, routing analysis, and stage 1 build phases.

The reports written to IOHEXCPT include:

- Gen Definition Edit/Resolution listing. This is the conflict resolution report. It lists the discrepancies among the different members of the sysplex and identifies what options were chosen to resolve most of the conflicts.
- PSBLIB/DBDLIB ANALYSIS listing. This report identifies the conflicts and error conditions encountered while analyzing the PSBLIB and DBDLIB members.
- IMS Stage 1 Generation listing. This reports shows the progress of the IMS stage 1 macro generation as well as any error conditions.
Merge Clone return codes

The Merge Clone utility will end with one of four possible return codes. The higher the return code value, the more severe the error. The following illustrates how each return code value should be handled:

0  No errors were detected.
4  Discrepancies were encountered but none were considered severe enough to stop program execution. After the program completes, an analysis of the IOHEXCPT output listings as well of the IMS stage 1 macros might be in order.
8  Program ran to normal completion, all stage 1 members were generated but manual editing of the stage 1 macros is required before an IMS sysgen can be run. An analysis of the IOHEXCPT output as well as the IMS stage 1 macros might also be in order.
12 A critical error was encountered that forced immediate program termination. No stage 1 macros were created. Analyze the output reports and correct any error conditions.
Part 5. Troubleshooting

Use these topics to diagnose and correct problems that you experience with IMS HP Sysgen Tools.

Topics:

- Chapter 18, “Troubleshooting overview,” on page 243
- Chapter 19, “Abend codes,” on page 245
- Chapter 20, “Runtime messages (IOH),” on page 247
- Chapter 21, “ISPF messages (IOH[A-F]),” on page 335
- Chapter 22, “IMS sysgen messages (IOHG),” on page 367
- Chapter 23, “Gathering diagnostic information,” on page 377
Chapter 18. Troubleshooting overview

Problem determination for IMS HP Sysgen Tools becomes easier if you know where to look for messages, dumps, and related documentation.

Batch utilities function as standard MVS jobs. There might be WTO messages written to the MVS syslog, as well as SYSOUT reports with error messages and dumps.

Most ISPF functions run within the TSO address space. When investigating problems with the ISPF functions, check first within the TSO user's address space. If there is a standard ISPF message issued by IMS HP Sysgen Tools, be sure to use the Help key (usually, PF1) to obtain additional information about the message. All ISPF messages have long messages (obtained by using PF1) that include an IMS HP Sysgen Tools message ID that is documented in this document.

Other ISPF diagnostic information can be found in WTO messages that might appear in the MVS syslog or, in the event of an abend, in the SYSUDUMP or SYSABEND output of the TSO user.

IMS HP Sysgen Tools uses APPC/MVS to run functions on the MVS system where a particular IMS system is running. If an abend occurs while running in an APPC/MVS initiator, IMS HP Sysgen Tools creates an SVC dump to document the problem. When investigating an IMS HP Sysgen Tools problem, be sure to review the SVC dumps generated on the MVS system where the target IMS system is running.
Chapter 19. Abend codes

This reference section provides detailed reason code information for the service and logic abend codes issued by IMS HP Sysgen Tools. The explanations provided in this reference can help you diagnose, troubleshoot, and solve IMS HP Sysgen Tools problems.

IMS HP Sysgen Tools abnormally ends when it encounters any condition that prevents the continuation of normal operation. There are several types of abend codes issued by IMS HP Sysgen Tools.

<table>
<thead>
<tr>
<th>U40xx</th>
</tr>
</thead>
</table>
| **Explanation:** A fatal error occurred. For an explanation of the reason for the abend, see the output produced by the batch execution of an IMS HP Sysgen Tools job. If this abend occurs in the online system, messages will be written to the JES log of the IMS control region address space, describing the reason for the failure.

This explanation is applicable for abend codes U40xx, where xx is one of the following: 00, 01, 02, 21, 22, 50, or 81.

**System action:** The abend ends the address space.

**User response:** Investigate the messages that describe the reason for the abend.
Chapter 20. Runtime messages (IOH)

This reference section provides detailed information about the error messages that are issued by IMS HP Sysgen Tools. The technical information in this section can help you troubleshoot and diagnose IMS HP Sysgen Tools problems.

Message format

IMS HP Sysgen Tools runtime messages adhere to the following format:

10nnnxx

Where:

IOH Indicates that the message was issued by IMS HP Sysgen Tools

nnnn Indicates the message identification number

x Indicates the severity of the message:

S Indicates that operator intervention is required before processing can continue.

E Indicates that an error occurred, which might or might not require operator intervention.

I Indicates that the message is informational only.

W Indicates that the message is a warning to alert you to a possible error condition.

Each message also includes the following information:

Explanation: The Explanation section explains what the message text means, why it occurred, and what its variables represent.

System action: The System action section explains what the system will do in response to the event that triggered this message.

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

Severity: A number between 2 and 16 that indicates the severity of the error. The severity of warning messages is usually 2 or 4, whereas severe errors are usually severity 16.

<table>
<thead>
<tr>
<th>IOH001E</th>
<th>IMS TRAN EDIT NAME FIND FAILED - REASON=a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explanation: While attempting to read the nucleus to determine the IMS transaction edit routine names included in the IMS nucleus, an unexpected condition occurred. The reason code (A-I) provides an internal indication of the reason for the condition.</td>
<td></td>
</tr>
<tr>
<td>System action: Processing fails</td>
<td></td>
</tr>
<tr>
<td>User response: Contact IBM Software Support for assistance.</td>
<td></td>
</tr>
<tr>
<td>Severity: In a batch environment, the job abends with a U4022 code. In an ISPF environment, the function fails.</td>
<td></td>
</tr>
</tbody>
</table>
IOH003E • IOH113S

**IOH003E** ALESERV function FAILED RC=rc

**Explanation:** An MVS ALESERV macro failed for function ADD or DELETE for addressability to the IMS control region address space, as identified in the message text.

**System action:** The request is stopped.

**User response:** Contact IBM Software Support for assistance.

**Severity:** N/A

---

**IOH004E** BDL failed for MEMBER xxxxxxxxxx RC=nn

**Explanation:** BDL could not find the IMS nucleus member of RESLIB (member name xxxxxxxxxx). The indicated return code is the return code from the BDL macro.

**System action:** Processing fails

**User response:** Verify that the proper IMS RESLIB data set and the proper IMS nucleus suffix are being used.

**Severity:** In a batch environment, the job abends with a U4022 code. In an ISPF environment, the function fails.

---

**IOH005E** FIND failed for MEMBER xxxxxxxxxx RC=nn

**Explanation:** An MVS FIND macro failed when attempting to find the IMS nucleus member of RESLIB (member name xxxxxxxxxx). The indicated return code is the return code from the FIND macro.

**System action:** Processing fails

**User response:** Verify that the proper IMS RESLIB data set and the proper IMS nucleus suffix are being used.

**Severity:** In a batch environment, the job abends with a U4022 code. In an ISPF environment, the function fails.

---

**IOH006E** POINT failed in MEMBER xxxxxxxxxx RC=nn

**Explanation:** An MVSPOINT macro failed when attempting to point within the IMS nucleus member of RESLIB (member name xxxxxxxxxx). The indicated return code is the return code from the POINT macro.

**System action:** Processing fails

**User response:** Verify that the proper IMS RESLIB data set and the proper IMS nucleus suffix are being used.

**Severity:** In a batch environment, the job abends with a U4022 code. In an ISPF environment, the function fails.

---

**IOH101S** INVALID PARM PASSED TO IOHCBMG

**Explanation:** An internal error occurred

**System action:** The sysgen fails. In batch mode, the job abends and produces a dump. In online mode, the /MODIFY request is canceled.

**User response:** Contact IBM Software Support for assistance.

**Severity:** Abend U4021

---

**IOH111S** INVALID PARM PASSED TO xxxxxxxx

**Explanation:** An internal error occurred

**System action:** The sysgen fails. In batch mode, the job abends and produces a dump. In online mode, the /MODIFY request is canceled.

**User response:** Contact IBM Software Support for assistance.

**Severity:** Abend U4021

---

**IOH112S** IMSGEN MACRO SUFFIX (a) DOES NOT MATCH THE IMS ONLINE SUFFIX (b)

**Explanation:** An online IMS sysgen request specified a SUFFIX= value on the IMSGEN macro that did not match the running IMS system’s suffix as specified in the DFSPBxxx member of PROCLIB.

**System action:** The /MODIFY command fails.

**User response:** Verify that the proper IMSGEN macro and values are being included in the IMS sysgen input. Correct the inconsistency by changing the IMSGEN macro or the running IMS system’s suffix.

**Severity:** None. This error only occurs in an online request.

---

**IOH113S** MULTIPLE SPECIFICATIONS OF xxxxxxxx MACRO

**Explanation:** Multiple IMSCTRL or IMSGEN macros were encountered in the specified IMS sysgen source. Only one occurrence of each of these macros is permitted.

**System action:** The sysgen fails. In batch mode, the job ends with a condition code indicated in the Severity section. In online mode, the /MODIFY request is canceled.

**User response:** Correct the IMS sysgen input to include only one occurrence of the macro specified in the error message text.
Severity: 16

IOH121S  INVALID PARM PASSED TO IOHDDIR
Explanation: An internal error occurred
System action: The sysgen fails. In batch mode, the job abends and produces a dump. In online mode, the /MODIFY request is canceled.
User response: Contact IBM Software Support for assistance.

Severity: Abend U4021

IOH131S  PARM FIELD REQUIRED FOR KEYWORD TARGET=
Explanation: The DBD name included in the message was specified more than once in the IMS sysgen input.
System action: The sysgen fails. In batch mode, the job ends with the specified condition code. In online mode, the /MODIFY request is canceled.
User response: Review the IOHPimid member of the PROCLIB DD statement, where imid is the online system’s IMSID.

Severity: 16

IOH132S  INVALID KEYWORD IN PARM FIELD
Explanation: The PARM= value specified in the invocation of IOHFGEN (on the EXEC JCL statement or TSO CALL statement) was not valid.
System action: The sysgen fails. The job ends with the specified condition code.
User response: Review the PARM passed to program IOHFGEN. It should specify SUFFIX= (a 1-4 character member name suffix for IOHPxxxx) and TARGET= (which can be S, I, A, and/or B).

Severity: 16

IOH133S  INVALID VALUE IN PARM FIELD FOR KEYWORD aaaaaaaaa
Explanation: The PARM= on the EXEC JCL statement or TSO CALL statement specified an invalid value for the keyword noted in the message. SUFFIX= specifies a 1-4 character member name suffix. TARGET= specifies the target libraries (which can be S, I, A, and/or B).
System action: The sysgen fails. The job ends with the specified condition code.
User response: Review the value specified for the keyword noted in the message.

Severity: 16

IOH134E  LOAD FAILED FOR module RC=nnnn ABCODE=abcode
Explanation: A LOAD for a required module failed. The abend code and reason code are described in the message.
System action: The job step abends.
User response: Verify that the STEPLIB concatenation for the Fastgen utility is correct.

Severity: 16

IOH135E  FASTGEN PROCESS TERMINATED DUE TO IMS SYSGEN ERROR(S)
Explanation: Prior errors encountered cause the IMS sysgen to fail.
System action: The job ends with the specified condition code.
User response: When encountered in batch mode, review the output to find the cause of the errors, and correct the problem. When encountered in online mode, review the JES log of the IMS control region to identify possible Fast Sysgen system errors or run the utility in batch mode to identify the IMS sysgen source statements in error.

Severity: 16

IOH136E  FASTGEN PROCESS TERMINATED DUE TO MODULE LINK ERROR(S)
Explanation: Errors encountered cause the IMS sysgen to fail. See detailed output of the Fast Sysgen process to determine if any updates were implemented in the requested target libraries.
System action: The job ends with the specified condition code.
User response: When encountered in batch mode, review the output to find the cause of the errors, and correct the problem. When encountered in online mode, review the JES log of the IMS control region to identify possible Fast Sysgen system errors or run the utility in batch mode to identify the cause of the error.

Severity: 16

IOH137S  ABEND REQUESTED BY IOHP* PARAMETER MEMBER OPTIONS STATEMENT
Explanation: The OPTIONS statement in the Fast Sysgen control card member specifies ABEND=YES.
System action: The job abnormally ends.
User response: To eliminate the abend, remove the OPTIONS control card from the member.

Severity: 16
IOH138E • IOH154E

IOH138E  FASTGEN PROCESS TERMINATED DUE TO IMS SECURITY GEN ERROR(S)

Explanation: Prior errors encountered cause the IMS security gen to fail.

System action: The job ends with the specified condition code.

User response: When encountered in batch mode, review the output to find the cause of the errors, and correct the problem. When encountered in online mode, review the JES log of the IMS control region to identify possible Fast Sysgen system errors or run the utility in batch mode to identify the IMS security source statements in error.

Severity: 16

IOH139W  STORAGE CLEANUP EXPERIENCED AN ERROR FREEING STORAGE

Explanation: A storage FREEMAIN failed.

System action: The job ends with the specified condition code.

User response: Contact IBM Software Support for assistance.

Severity: 2

IOH140E  THE SUFFIX PARAMETER IS NO LONGER SUPPORTED

Explanation: The SUFFIX= keyword is no longer supported in IMS HP Sysgen Tools. Review the new PARM field requirements for JOHFGEN in Chapter 11, “Using the Fast Sysgen utility,” on page 183.

System action: The job step ends.

User response: Update the PARM field specified in the IOHFGEN job. Remove the SUFFIX= and value, and include the IMSID= keyword with an appropriate value.

Severity: 8

IOH141E  THE IMSID SPECIFIED IN THE PARM FIELD EXCEEDS FOUR CHARACTERS

Explanation: The IMSID= keyword parameter value specified exceeds four characters.

System action: The job fails.

User response: Review the value specified in the PARM field of the Fastgen job step EXEC card for the value of the IMSID= keyword. It exceeds the maximum length of 4 characters.

Severity: 8

IOH142E  IMSID WAS NOT SPECIFIED AND REQUIRED DD STATEMENT ddname WAS NOT SPECIFIED

Explanation: The Fastgen job step did not include the specified DD statement and could not be dynamically allocated because the IMSID= keyword was not specified in the EXEC card PARM field.

System action: The job fails.

User response: Either add the specified DD statement, or add the IMSID= keyword to the Fastgen job step PARM field so that IMS HP Sysgen Tools can dynamically allocate the required DD statement.

Severity: 8

IOH151E  MISSING KEYWORD TABLE FOR MACRO aaaaaaaaa

Explanation: An error was encountered processing the internal keyword table for the specified macro.

System action: The job ends with the specified condition code.

User response: Contact IBM Software Support for assistance.

Severity: 16

IOH152E  INVALID MACRO NAME/OPCODE - aaaaaaaaa

Explanation: An invalid or unsupported operation code aaaaaaaaa was found in the IMS stage 1 source.

System action: The job ends with the specified condition code.

User response: Review the statement in error and correct the problem.

Severity: 16

IOH153E  INVALID KEYWORD FOR MACRO mmmmmmmmm - kkkkkkk

Explanation: An unidentified keyword was found on the specified macro statement.

System action: The job ends with the specified condition code.

User response: Review the statement in error and correct the problem.

Severity: 16

IOH154E  KEYWORD SPECIFIED EXCEEDS 8 CHARACTERS

Explanation: A keyword specified in the IMS stage 1 source was longer than 8 characters.
System action: The job ends with the specified condition code.

User response: Review the statement in error and correct the problem.

Severity: 16

IOH155E  DUPLICATE SPECIFICATION OF KEYWORD aaaaaaaa

Explanation: The specified keyword was included more than once on a macro invocation.

System action: The job ends with the specified condition code.

User response: Review the statement in error and correct the problem.

Severity: 16

IOH156E  UNBALANCED QUOTE MARKS

Explanation: A statement with a value that included quotation marks (’) had unbalanced quotation marks.

System action: The job ends with the specified condition code.

User response: Review the statement in error and correct the problem.

Severity: 16

IOH157E  INVALID SYNTAX (OPEN PAREN IN MID-WORD)

Explanation: An open parenthesis was found without a preceding blank or comma.

System action: The job ends with the specified condition code.

User response: Review the statement in error and correct the problem.

Severity: 16

IOH158E  UNBALANCED PARENTHESIS

Explanation: An open parenthesis was found without a matching close parenthesis.

System action: The job ends with the specified condition code.

User response: Review the statement in error and correct the problem.

Severity: 16

IOH159E  VALUE SPECIFIED FOR KEYWORD xxxxxxx EXCEEDS 8 CHARS

Explanation: The value specified for the indicated keyword exceeds 8 characters. The maximum length for specification of this keyword is 8 characters.

System action: The job ends with the specified condition code.

User response: Review the statement in error and correct the problem.

Severity: 16

IOH160E  TOO MANY VALUES SPECIFIED FOR KEYWORD aaaaaaaa

Explanation: The indicated keyword had more values specified than are valid.

System action: The job ends with the specified condition code.

User response: Review the statement in error and correct the problem.

Severity: 16

IOH161E  POSITIONAL PARAMETER IS FOLLOWED BY “,”

Explanation: A positional parameter contained or was followed by an open or close parenthesis or an equal sign.

System action: The job ends with the specified condition code.

User response: Review the statement in error and correct the problem.

Severity: 16

IOH162E  NO COMMA FOLLOWING “)”

Explanation: The statement in error contained a close parenthesis that was not followed by either a blank or a comma.

System action: The job ends with the specified condition code.

User response: Review the statement in error and correct the problem.

Severity: 16

IOH163E  SYNTAX ERROR

Explanation: The statement in error was unable to complete parsing due to an unidentified syntax error. This might be caused by previous errors for the same statement.

System action: The job ends with the specified condition code.
User response: If there are other errors for this statement, correct the other identified errors. If this error occurs without obvious reason or other errors, contact IBM Software Support for assistance.

Severity: 16

IOH164E  UNMATCHED QUOTES
Explanation: A statement with a value that included quotation marks (') had unbalanced quotation marks.
System action: The job ends with the specified condition code.
User response: Review the statement in error and correct the problem.
Severity: 16

IOH165E  UNSUPPORTED IMS RELEASE
Explanation: The IMS release identifier in the modify work area extension was not valid.
System action: The job ends with the specified condition code.
User response: Contact IBM Software Support for assistance.
Severity: 16

IOH166E  MSNAME STMTS MISSING-SYSID CHECKING BYPASSED
Explanation: The IMS sysgen source did not include MSC link definitions. However, transactions were present in the sysgen source that included sysid= specifications.
System action: The request fails. Syntax checking continues, although IMS HP Sysgen Tools is unable to verify transaction SYSID specifications.
User response: Ensure that the MSNAME macros are included in the IMS sysgen source.
Severity: N/A

IOH172E  INVALID VALUE SPECIFIED FOR KEYWORD name
Explanation: The $IOHGEN statement that was flagged in error contains an invalid value for the named keyword.
System action: Syntax checking for the statement fails, but syntax checking continues for the next sysgen source statement.
User response: Verify that the value specified for the named keyword is valid, and correct any invalid values.
Severity: 8

IOH173E  REQUIRED KEYWORD NOT SPECIFIED (AGN OR RELOAD REQUIRED)
Explanation: The $IOHGEN statement that was flagged in error is missing a required keyword. Either the RELOAD or AGN= keyword is required.
System action: Syntax checking for the statement fails, but syntax checking continues for the next sysgen source statement.
User response: Check the syntax of the $IOHGEN statement to ensure that you have specified either the RELOAD keyword or the AGN= keyword.
Severity: 8

IOH174E  REQUIRED KEYWORD NOT SPECIFIED keyword
Explanation: The $IOHGEN statement that was flagged in error is missing a required keyword. The missing keyword (or list of possible keywords) is included in the message.
System action: Syntax checking for the statement fails, but syntax checking continues for the next sysgen source statement.
User response: Check the syntax of the $IOHGEN statement to ensure that you have specified all required keywords for the form of the $IOHGEN statement being used.
Severity: 8

IOH175E  INVALID COMBINATION OF KEYWORDS SPECIFIED keywords
Explanation: The $IOHGEN statement that was flagged in error includes an invalid keyword for this form of the $IOHGEN statement. The conflicting keywords are specified in the message text.
System action: Syntax checking for the statement fails, but syntax checking continues for the next sysgen source statement.
User response: Check the syntax of the $IOHGEN statement to ensure that you have specified only the keywords permitted for the form of the $IOHGEN statement being used.
Severity: 8

IOH176E  INVALID KEYWORD SPECIFIED FOR type STATEMENT Keyword
Explanation: The $IOHGEN statement that was flagged in error includes an invalid keyword for this form of the $IOHGEN statement. The type of $IOHGEN statement (either RELOAD or AGN) and the unexpected keyword name are specified in the message text.
Severity: 8
System action: Syntax checking for the statement fails, but syntax checking continues for the next sysgen source statement.

User response: Check the syntax of the $IOHGEN statement to ensure that you have specified only the keywords permitted for the form of the $IOHGEN statement being used.

Severity: 8

IOH181I IMS HP SYSGEN /MOD PREPARE FASTGEN CMD NOT AVAILABLE WHEN xxx IS ACTIVE

Explanation: Your environment is not compatible with the /MOD PREPARE FASTGEN command. The message indicates whether Global Online Change (GOC) or Dynamic Resource Definition (DRD) is the incompatible feature in use.

System action: The /MOD PREPARE FASTGEN command is ignored.

User response: Use a resource update list to change IMS system definitions.

Severity: N/A

IOH185E LOAD FAILED FOR aaaaaaaaa RC=nnnn ABCODE=cccc

Explanation: A load for the specified module name failed. Had the condition not been intercepted, the result would have been an abend with abend code cccc reason code mnnn.

System action: The batch job or IMS control region abends.

User response: Verify that the STEPLIB concatenation is correct for batch processing or that the IMS control region STEPLIB concatenation is correct.

Severity: U4021 abend code.

IOH187E DELETE FAILED FOR aaaaaaaaa RC=nnnn

Explanation: An attempted delete of a module failed with the indicated return code.

System action: Processing continues.

User response: Review the JES log of the job that encountered the error for indications of the problem. Contact IBM Software Support for assistance.

Severity: U4021 abend code.

IOH188S SCD ADDRESS RECEIVED BY IOHINIT IS INVALID

Explanation: DFSXJCIC0 passed an invalid SCD address to IOHINIT.

System action: The IMS control region abends.

User response: Contact IBM Software Support for assistance.

Severity: The IMS control region abends with a U4021 abend code.

IOH189S DFSVC000 LOADED FROM STEPLIB IS INVALID

Explanation: Module DFSVC000 is not valid.

System action: The batch job abends.

User response: Verify that the STEPLIB concatenation for the job does not contain any data sets with module name DFSVC000 other than the RESLIB data set. If an IMS sysgen was done recently, verify that the sysgen was successful.

Severity: U4021 abend code

IOH190S UNSUPPORTED IMS RELEASE

Explanation: An unsupported release of IMS/ESA® was found in module DFSVC000.

System action: The job abends.

User response: Verify that the IMS RESLIB in the STEPLIB concatenation contains a supported release of IMS. Upgrade the IMS Sysgen Tool if the release is not supported.

Severity: U4021 abend code

IOH192E LOAD FAILED FOR aaaaaaaaa RC=nnnn ABCODE=aaaaa

Explanation: A load for the specified module name failed. Had the condition not been intercepted, the result would have been an abend with abend code cccc reason code mnnn.

System action: The batch job or IMS control region abends.

User response: Verify that the STEPLIB concatenation is correct for a batch execution or that the IMS control region STEPLIB concatenation is correct.

Severity: U4021 abend code.
Severity: U4021 abend code.

IOH205S  INVALID PARM PASSED TO IOHIOS00
Explanation: An internal error occurred in IOHIOS00.
System action: The batch job abends. In an online environment, the Fast Sysgen request fails.
User response: Contact IBM Software Support for assistance.
Severity: U4021 abend code.

IOH206E  INTERNAL ERROR - INVALID OPEN REQUEST
Explanation: An internal error occurred in IOHIOS00.
System action: The batch job abends. In an online environment, the Fast Sysgen request fails.
User response: Contact IBM Software Support for assistance.
Severity: U4021 abend code.

IOH207E  INTERNAL ERROR - INVALID GET REQUEST
Explanation: An internal error occurred in IOHIOS00.
System action: The batch job abends. In an online environment, the Fast Sysgen request fails.
User response: Contact IBM Software Support for assistance.
Severity: U4021 abend code.

IOH208E  MISSING OPCODE - STMT IGNORED
Explanation: An internal error occurred in IOHIOS00.
System action: The batch job abends. In an online environment, the Fast Sysgen request fails.
User response: Contact IBM Software Support for assistance.
Severity: U4021 abend code.

IOH209E  INTERNAL ERROR - INVALID LENGTH
Explanation: An internal parsing error occurred in IOHIOS00.
System action: The batch job abends. In an online environment, the Fast Sysgen request fails.
User response: Contact IBM Software Support for assistance.
Severity: U4021 abend code.

IOH210E  INTERNAL PARM ERROR - GENTYPE NOT SPECIFIED
Explanation: An internal error occurred in IOHIOS00.
System action: The batch job abends. In an online environment, the Fast Sysgen request fails.
User response: Contact IBM Software Support for assistance.
Severity: U4021 abend code.

IOH211E  OPCODE EXCEEDS 8 CHARACTERS - STMT IGNORED
Explanation: An internal error occurred in IOHIOS00.
System action: The batch job abends. In an online environment, the Fast Sysgen request fails.
User response: Contact IBM Software Support for assistance.
Severity: U4021 abend code.

IOH212E  BEGIN TO CONTINUE COLUMNS NOT BLANK
Explanation: A macro statement was continued (as indicated by a non-blank character in column 72), but the first 15 columns on the following statement were not blank.
System action: The statement is ignored.
User response: Review the macro statement in error and correct the problem.
Severity: 16

IOH213E  TITLE MUST HAVE A SINGLE OPERAND ENCLOSED IN QUOTES
Explanation: A TITLE statement was encountered containing more than one operand or whose operand was not enclosed in quotation marks.
System action: The statement is ignored.
User response: Review the macro statement in error and correct the problem.
Severity: 16

IOH214E  TITLE VALUE EXCEEDS 100 BYTES
Explanation: A TITLE statement with title text exceeding 100 bytes was encountered.
System action: The statement is ignored.
User response: Reduce the length of the title text to less than 100 bytes.
Severity: 16
**IOH215E**  
**LABEL TOO LONG (EXCEEDS 63 CHARACTERS)**

**Explanation:** A control statement had a label beginning in column 1 that exceeded 63 characters in length.

**System action:** The statement is ignored.

**User response:** Reduce the length of the label to less than 63 characters.

**Severity:** 16

**IOH216E**  
**TOO MANY CONTINUATION CARDS (EXCEEDS 10 CARDS)**

**Explanation:** A single macro statement was composed of more than 10 source lines (or exceeded the maximum length available for a single macro statement - approximately 720 characters).

**System action:** The statement is ignored.

**User response:** Review the source macro that caused the error. Reduce the number of text lines comprising the macro or reduce the entire length of the macro statement by eliminating parameters with default values.

**Severity:** 16

**IOH217E**  
**UNMATCHED QUOTE**

**Explanation:** A macro statement with a value in quotation marks did not have an ending quotation mark.

**System action:** The statement is ignored.

**User response:** Review the macro statement in error and correct the problem.

**Severity:** 16

**IOH218E**  
**TOO MANY NESTED COPY STATEMENTS (EXCEEDS 10)**

**Explanation:** The number of active (open) COPY members exceeded the limit of 10. Fast Sysgen has a limit of 10 nested COPY levels.

**System action:** The COPY statement is ignored.

**User response:** Restructure the source code to reduce the number of nested COPY statements.

**Severity:** 16

**IOH219E**  
**COPY OPERAND EXCEEDS 8 CHARACTERS**

**Explanation:** A COPY statement specified a member name of more than 8 characters.

**System action:** The statement is ignored.

User response: Review the macro statement in error and correct the problem.

Severity: 16

**IOH220E**  
**RECURSIVE COPY MEMBER REQUESTED**

**Explanation:** A COPY statement was included in a COPIED member that referred back to a member already open. This would result in an endless loop of COPY members.

**System action:** The statement is ignored.

**User response:** Review the COPY statements included in the gen source, and correct the COPY statements to prevent a recursive COPY.

**Severity:** 16

**IOH221E**  
**COPY STATEMENT FOUND IN SEQUENTIAL INPUT**

**Explanation:** A COPY statement was included in a COPIED member that referred back to a member already open. This would result in an endless loop of COPY members.

**System action:** The Fast Sysgen process ends.

**User response:** Review the COPY statements included in the gen source, and make the input a PDS member.

**Severity:** For batch jobs, a U4021 abend occurs. For online Fast Sysgen requests, the command is canceled.

**IOH222W**  
**WARNING - CONTINUED STATEMENT DOES NOT END WITH A COMMA**

**Explanation:** An input line had a non-blank continuation character, indicating that the statement is continued, but the statement does not end with a comma. While this is valid syntax, it might indicate that a comma is missing.

**System action:** The remainder of the macro statement is treated as comments.

**User response:** Verify that the continued statement is coded correctly.

**Severity:** 2.

**IOH223E**  
**COPY STATEMENT INVALID IN PROCLIB MEMBER**

**Explanation:** While processing member IOHPimid in the IMS PROCLIB DD, a COPY statement was encountered. COPY statements are not permitted in the IOHPimid member of the PROCLIB.

**System action:** The Fast Sysgen process ends.
User response: Remove any COPY statements from the IOHPimid member of the PROCLIB.

Severity: The /MODIFY command is canceled.

IOH231I jjjjjjjj WAITING FOR DATASET dsn volser

Explanation: Jobname jjjjjj is waiting for an enqueue or reserve for an output data set. The data set name (dsn) and volume serial (volser) are indicated in the message.

System action: The job waits for the holder of the resource to release control.

User response: If the wait continues, investigate which job is holding the resource required. For example, a batch Fast Sysgen that requests an update to the active MODBLKS/MATRIX data sets will encounter this problem.

Severity: 0

IOH234S STOW FAILED FOR MEMBER aaaaaaaa IN DD bbbbbbbb RC=nn SC=ssss

Explanation: A STOW request for the indicated member and DDNAME failed. The return code and subcode issued by the STOW macro appear in the message.

System action: The Fast Sysgen process ends.

User response: Review the JES log of the failing job for other messages relating to the indicated DDNAME. Review the JCL for proper specification of the indicated DDNAME.

Severity: For batch jobs, a U4021 abend occurs. For online Fast Sysgen requests, the command is canceled.

IOH235S MODULE SIZE REQUESTED NOT DOUBLEWORD ALIGNED

Explanation: An internal error occurred related to the size of the module to be written.

System action: The Fast Sysgen process ends.

User response: Contact IBM Software Support for assistance.

Severity: For batch jobs, a U4021 abend occurs. For online Fast Sysgen requests, the command is canceled.

IOH236S NOTE MACRO FAILED FOR DDNAME aaaaaaaa RC=nn

Explanation: A NOTE macro request for the indicated DDNAME failed. The return code from NOTE appears in the message.

System action: The Fast Sysgen process ends.

User response: Review the JES log of the failing job for other messages relating to the indicated DDNAME. Review the JCL for proper specification of the indicated DDNAME.

Severity: For batch jobs, a U4021 abend occurs. For online Fast Sysgen requests, the command is canceled.

IOH237S INVALID PARAMETER PASSED TO IOHLMOD

Explanation: An internal error occurred passing a parameter to module IOHLMOD.

System action: The Fast Sysgen process ends.

User response: Contact IBM Software Support for assistance.

Severity: For batch jobs, a U4021 abend occurs. For online Fast Sysgen requests, the command is canceled.

IOH238S ERROR PARSING MODSTAT RECORD

Explanation: An error occurred while interpreting the information in the MODSTAT data set.

System action: The Fast Sysgen process ends.

User response: Verify that the MODSTAT data set contains valid information. If the MODSTAT record is valid, contact IBM Software Support. Save a copy of the MODSTAT data set record for review by IBM Software Support.

Severity: For batch jobs, a U4021 abend occurs. For online Fast Sysgen requests, the command is canceled.
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IOH240S  aaaaaaaaa  ERROR FOR bbbbbbbb  RC=nn
Explanation: An ENQ or RESERVE macro for QNAME bbbbbbbb failed with the indicated return code.
System action: The Fast Sysgen process ends.
User response: Contact IBM Software Support for assistance.
Severity: For batch jobs, a U4021 abend occurs. For online Fast Sysgen requests, the command is canceled.

IOH241S  DFSOC001 ENQUEUE FAILED FOR dsn
Explanation: The online IMS control region issued an ENQ for the indicated data set. The ENQ would have resulted in the IMS control region waiting for exclusive use of the resource.
System action: The IMS HP Sysgen Tools process ends to prevent the IMS control region from waiting for the resource.
Severity: The request for IMS HP Sysgen Tools is canceled.

IOH242S  UNABLE TO LOCATE TIOT ENTRY FOR DDNAME aaaaaaaaa
Explanation: The specified DDNAME was not found in the TIOT.
System action: The Fast Sysgen process ends.
User response: Ensure that the indicated DDNAME is included in the JCL for the failing address space.
Severity: For batch jobs, a U4021 abend occurs. For online Fast Sysgen requests, the command is canceled.

IOH243S  SWAREQ FAILED RC=nn
Explanation: An SWAREQ macro failed with the indicated return code.
System action: The Fast Sysgen process ends.
User response: Contact IBM Software Support for assistance.
Severity: For batch jobs, a U4021 abend occurs. For online Fast Sysgen requests, the command is canceled.

IOH244W  WARNING - ALL x x x x x x x x x x DATASETS DO NOT HAVE THE SAME BLKSIZE
Explanation: The 3 data sets (staging, A, and B) of the type indicated by the message do not all have the same block size.
System action: The smallest block size is used for all the indicated data sets.
User response: All MATRIX data sets and all MODBLKS data sets should have the same block size.

Reallocation of the data sets to specify the same block size for all 3 data sets.
Severity: 0

IOH245E  ERROR PROCESSING RELOCATABLE ADDRESSES
Explanation: An internal error occurred processing the AGN matrix table.
System action: The Fast Sysgen process ends.
User response: Contact IBM Software Support for assistance.
Severity: For batch jobs, a U4021 abend occurs. For online Fast Sysgen requests, the command is canceled.

IOH246E  ABEND Saaa RCrr DDNAME dddddddd - SYSGEN ABORTED
Explanation: An abend was intercepted during an I/O operation for the indicated DDNAME.
System action: The Fast Sysgen process ends.
User response: Review the JES log of the failing job for other messages relating to the indicated DDNAME. For D37 or E37 abend codes, review the space available in the indicated data set and compress the data set as required.
Severity: For batch jobs, a U4021 abend occurs. For online Fast Sysgen requests, the command is canceled.

IOH247E  TASK NOT APF AUTHORIZED - UNABLE TO COMPRESS OUTPUT LIBRARY
Explanation: IMS HP Sysgen Tools was unable to automatically compress the output library because the job step task was not running APF authorized.
System action: Processing fails because output to the MODBLKS or MATRIX library that experienced the D37 or E37 abend could not continue without compressing the library.
Severity: For batch job, a U4021 abend occurs. For online Fast Sysgen requests, the /MODIFY command fails.

IOH248E  SPACE ABEND RECURRENT AFTER OUTPUT LIBRARY WAS COMPRESSED
Explanation: HP Sysgen compressed the library that experienced the D37/E37 abend, but the abend recurred.
System action: Processing fails because output to the MODBLKS or MATRIX library that experienced the D37 or E37 abend could not continue.
User response: Review space allocation for the library.
that experienced the D347 or E37 abend, and ensure that sufficient space is available.

Severity: For batch job, a U4021 abend occurs. For online Fast Sysgen requests, the /MODIFY command fails.

---

**IOH249E**

| COMPRESS FAILED - ATTACH TO IEBCOPY FAILED RC=rc;COMPRESS FAILED - IEBCOPY RETURN CODE rc |
| Explanation: HP Sysgen compressed the library that experienced the D37/E37 abend, but the abend reoccurred. |
| System action: Processing fails because output to the MODBLKS or MATRIX library that experienced the D37 or E37 abend could not continue without compressing the library. |
| User response: Review the return code/abend code and any messages in the MVS SYSLOG to determine the cause of the IEBCOPY failure. Contact IBM Software Support for assistance. |
| Severity: For batch job, a U4021 abend occurs. For online Fast Sysgen requests, the /MODIFY command fails. |

---

**IOH250I**

| COMPRESS SUCCESSFUL DDNAME |
| Explanation: HP Sysgen compressed the library that experienced a D37/E37 abend. HP Sysgen retries the output processing that was in progress at the time of the abend. |
| System action: None. |
| User response: None. This message is informational. |
| Severity: 0 |

---

**IOH251S**

| aaaaaaaa FAILED FOR bbbbbbbb STORAGE RC=nn |
| Explanation: A storage request for I/O related storage failed with the indicated return code. aaaaaaaa indicates whether a GETMAIN or FREEMAIN. bbbbbbbb indicates the storage use - either DCB, DSNENT, or BUFFER. |
| System action: The function fails. In a batch environment, the job abends. In an online environment, the /MODIFY command fails. |
| User response: Contact IBM Software Support for assistance. |
| Severity: For batch job, a U4021 abend occurs. For online Fast Sysgen requests, the /MODIFY command fails. |

---

**IOH261E**

| ERROR - reason |
| Explanation: An error occurred processing the Fast Sysgen control statements. As indicated in the message, either an invalid operation code (such as IMSGEN or SECGEN) or an invalid keyword (such as DDNAME= or MEMBER=) was encountered. |
| System action: The Fast Sysgen process ends. |
| User response: Review the Fast Sysgen control statements in the IOHPxxxx member of the PROCLIB DD and correct the problem. |
| Severity: 16 |

---

**IOH262E**

| KEYWORD VALUE FOR kkkkkkk reason |
| Explanation: The indicated keyword specified a value that was either missing, invalid, or too long, as indicated in the error message text. |
| System action: The Fast Sysgen process ends. |
| User response: Review the Fast Sysgen control statements in the IOHPxxxx member of the PROCLIB DD and correct the problem. |
| Severity: 16 |

---

**IOH263E**

| MULTIPLE SPECIFICATIONS OF PARM aaaaaaaa |
| Explanation: The indicated parameter was already specified - either on this statement or a prior statement. |
| System action: The Fastgen process ends. |
| User response: Review the Fast Sysgen control statements in the IOHPxxxx member of the PROCLIB DD and correct the problem. There should be only one occurrence of each type of statement (such as IMSGEN, SECGEN) in the control statement member. |
| Severity: 16 |

---

**IOH264E**

| DD NAME AND DSN KEYWORDS ARE MUTUALLY EXCLUSIVE |
| Explanation: Both the DD name and DSN keyword were specified. Only one of these keywords is permitted on as IMSGEN or SECGEN statement. |
| System action: The Fastgen process ends. |
| User response: Remove one of the keyword specifications from the statement. |
| Severity: 16 |

---

**IOH265E**

| CLOSE PAREN WITHOUT MATCHING OPEN PAREN |
| Explanation: The value for a keyword began with an open parenthesis, but no close parenthesis was found by the end of the statement. |
System action: The Fastgen process ends.
User response: Review the parenthesis specified on the statement.
Severity: 16

IOH266E DSNAME EXCEEDS 44 CHARACTERS
Explanation: A data set name was specified for the source keyword, but the length of the name exceeded 44 characters.
System action: The Fastgen process ends.
User response: Correct the data set name.
Severity: 16

IOH267E MORE THAN 50 DSnames SPECIFIED
Explanation: The DSN keyword specified more than the maximum number of data set names.
System action: The Fastgen process ends.
User response: Reduce the number of data set names.
Severity: 16

IOH268E DYNAMIC XXXXXXXXXXXXX FAILED RC=XX ERROR CODE=XXXX INFO CODE=XXX
Explanation: A dynamic allocation/concatenation/unallocation request failed. One or both IOH268I messages might appear along with the IOH268E message.
System action: The Fastgen process ends.
User response: Check the error and information codes returned, and correct the error.
Severity: 16

IOH268I DSN XXXXXXXXXXXXXXXXXXXXXXX
Explanation: A dynamic allocation/concatenation/unallocation request completed.
System action: None.
User response: None. This message is informational.
Severity: 16

IOH269W DSN=XXXXXXXXXXXXXXX
Explanation: Dynamic allocation information returned an unexpected value for the DSORG of the specified data set.
System action: The Fastgen process ends.
User response: Verify that the DSORG of the identified data set is valid.
Severity: 16

IOH270E SOURCE DATA SETS HAVE INCONSISTENT DSORG
Explanation: Concatenated data sets do not all have the same data set organization. Some are sequential (PS), and others are PDS(PO).
System action: The Fastgen process ends.
User response: Verify the data set names specified in the IOHPxxx member in order to ensure that all data sets in a concatenation have the same data set organization.
Severity: 16

IOH271S INVALID PARM PASSED TO IOHPDIR
Explanation: An internal error occurred due to an invalid parameter being passed to module IOHPDIR.
System action: The Fast Sysgen process ends.
User response: Contact IBM Software Support for assistance.
Severity: A batch job receives a U4021 abend. In an online environment, the Fast Sysgen request is canceled.

IOH272E TRANSTAT= KEYWORD INVALID PRIOR TO IMS V10
Explanation: IMS sysgen source for an IMS system prior to IMS Version 10 includes an APPLCTN macro with the TRANSTAT keyword. This keyword is not supported prior to IMS V10.
System action: Processing continues.
User response: Ensure that you are trying to generate an IMS system for the proper release of IMS, which is determined by which IMS RESLIB that you are using. If the intended IMS system is earlier than IMS Version 10, remove any TRANSTAT= keywords from the IMS sysgen source.
Severity: 8

IOH281S INVALID PARM PASSED TO IOHRDIR
Explanation: An internal error occurred due to an invalid parameter being passed to module IOHRDIR.
System action: The Fast Sysgen process ends.
User response: Contact IBM Software Support for assistance.
Severity: A batch job receives a U4021 abend. In an online environment, the Fast Sysgen request is canceled.
IOH282E  IMODULE GETMAIN FAILED FOR IOHDSNDI RC=m
Explanation: An IMS IMODULE GETMAIN failed.
System action: The request fails.
User response: Ensure that the IMS control region has sufficient virtual storage to obtain 2 KB of storage above the 16 MB line. Contact IBM Software Support for assistance.
Severity: N/A

IOH291S  INVALID PARM PASSED TO IOHSDIR
Explanation: An internal error occurred due to an invalid parameter being passed to module IOHSDIR.
System action: The Fast Sysgen process ends.
User response: Contact IBM Software Support for assistance.
Severity: A batch job receives a U4021 abend. In an online environment, the Fast Sysgen request is canceled.

IOH301E  ERROR BUILDING DFSAGT00 MATRIX
Explanation: An internal error occurred building the AGN matrix tables.
System action: The Fast Sysgen process ends.
User response: Contact IBM Software Support for assistance.
Severity: A batch job receives a U4021 abend. In an online environment, the Fast Sysgen request is canceled.

IOH311E  INVALID LABEL IN COLUMN 1 - STMT IGNORED
Explanation: The only valid characters that can appear starting in column 1 are a blank or a close parenthesis followed by an open parenthesis followed by a blank.
System action: Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.
User response: Reduce the number of AGN names in the security gen source.
Severity: 16

IOH312E  LOGIC ERROR IN IOHSECB
Explanation: An internal error occurred processing the security control statements.
System action: The Fast Sysgen process ends.
User response: Review the security gen source, and correct the error.
Severity: 16

IOH313E  OPCODE ERROR (INVALID OR OUT OF SEQUENCE - STMT IGNORED)
Explanation: The operation code on the preceding statement is not currently valid (either the operation code is spelled wrong or is out of sequence).
System action: The statement is ignored. Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.
User response: Review the security gen source, and correct the error.
Severity: 16

IOH314E  MISSING REQUIRED OPERAND - STMT IGNORED
Explanation: A required operand for the preceding statement was not specified.
System action: The statement is ignored. Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.
User response: Review the security gen source, and correct the error.
Severity: 16

IOH315E  NO DATA RECORDS FOR PRECEDING CONTROL RECORD
Explanation: A control record - one with a ")" label - had no data records associated with it.
System action: Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.
User response: Review the security gen source, and correct the error.
Severity: 16

IOH316E  DATA RECORD SPECIFIED WITHOUT PRECEDING CONTROL RECORD
Explanation: A data record - one without a ")" label - was encountered before a control record.
System action: The statement is ignored. Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.
User response: Review the security gen source, and correct the error.
Severity: 16
<table>
<thead>
<tr>
<th>IOH317E</th>
<th>SPECIFIED OPERAND NOT DEFINED IN THIS SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong></td>
<td>The resource specified on the preceding statement was not defined in this system.</td>
</tr>
<tr>
<td><strong>System action:</strong></td>
<td>The statement is ignored. Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Review the security gen source, and correct the error.</td>
</tr>
<tr>
<td><strong>Severity:</strong></td>
<td>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IOH318E</th>
<th>TRANSACT SPECIFIED IS FAST PATH EXCLUSIVE (NOT VALID)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong></td>
<td>A transaction name specified on a security gen statement is a Fast Path transaction, and therefore is not valid.</td>
</tr>
<tr>
<td><strong>System action:</strong></td>
<td>The statement is ignored. Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Review the security gen source, and correct the error.</td>
</tr>
<tr>
<td><strong>Severity:</strong></td>
<td>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IOH319E</th>
<th>SPECIFIED COMMAND NOT VALID FOR TCOMMAND</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong></td>
<td>The command specified is not eligible for AOI command processing, and therefore the TCOMMAND statement.</td>
</tr>
<tr>
<td><strong>System action:</strong></td>
<td>The statement is ignored. Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Review the security gen source, and correct the error.</td>
</tr>
<tr>
<td><strong>Severity:</strong></td>
<td>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IOH320E</th>
<th>STORAGE MANAGEMENT ERROR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong></td>
<td>An internal storage management error occurred processing the security control statements.</td>
</tr>
<tr>
<td><strong>System action:</strong></td>
<td>The Fast Sysgen process ends.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Contact IBM Software Support for assistance.</td>
</tr>
<tr>
<td><strong>Severity:</strong></td>
<td>A batch job receives a U4021 abend. In an online environment, the Fast Sysgen request is canceled.</td>
</tr>
<tr>
<td><strong>Severity:</strong></td>
<td>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IOH321E</th>
<th>SPECIFIED PTERM NUMBER ID INVALID</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong></td>
<td>The specified PTERM number is invalid.</td>
</tr>
<tr>
<td><strong>System action:</strong></td>
<td>The statement is ignored. Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Review the security gen source, and correct the error.</td>
</tr>
<tr>
<td><strong>Severity:</strong></td>
<td>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IOH322E</th>
<th>REDUNDANT SIGN / STERM COMMAND</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong></td>
<td>A STERM ALL statement was encountered along with a STERM name statement.</td>
</tr>
<tr>
<td><strong>System action:</strong></td>
<td>The statement is ignored. Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Remove either the STERM ALL statement or all other STERM statements.</td>
</tr>
<tr>
<td><strong>Severity:</strong></td>
<td>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IOH323E</th>
<th>OPERAND EXCEEDS MAXIMUM VALID LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong></td>
<td>A resource name specified in the previous security statement exceeds the maximum allowable length for that type of resource. This is typically 8 characters, or 11 for an IMS command name.</td>
</tr>
<tr>
<td><strong>System action:</strong></td>
<td>The statement is ignored. Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Review the security gen source, and correct the error.</td>
</tr>
<tr>
<td><strong>Severity:</strong></td>
<td>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IOH324E</th>
<th>OPERAND CONTAINS INVALID CHARACTERS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong></td>
<td>The specified operand contained invalid special characters.</td>
</tr>
<tr>
<td><strong>System action:</strong></td>
<td>The statement is ignored. Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Review the security gen source, and correct the error.</td>
</tr>
<tr>
<td><strong>Severity:</strong></td>
<td>16</td>
</tr>
</tbody>
</table>
IOH325E  TCOLUMN * NOT PERMITTED ON CONTROL STMT

Explanation:  A ) ( TCOLUMN * statement was encountered. To use TCOLUMN *, the CTRAN statement must be the control statement (the one with the backwards parenthesis).

System action:  The statement is ignored. Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.

User response:  Review the security gen source, and correct the error.

Severity:  16

IOH326E  INVALID IPAGE ADDRESS

Explanation:  An internal storage management error occurred processing the security control statements.

System action:  The Fast Sysgen process ends.

User response:  Contact IBM Software Support for assistance.

Severity:  A batch job receives a U4021 abend. In an online environment, the Fast Sysgen request is canceled.

IOH327E  INVALID ROW OFFSET CALCULATED

Explanation:  An internal error occurred processing the security control statements.

System action:  The Fast Sysgen process ends.

User response:  Contact IBM Software Support for assistance.

Severity:  A batch job receives a U4021 abend. In an online environment, the Fast Sysgen request is canceled.

IOH328E  DUPLICATE AGN NAME SPECIFIED

Explanation:  An AGNAME control statement was encountered that specified an AGN name already in use.

System action:  The statement is ignored. Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.

User response:  Review the security gen source, and correct the error.

Severity:  16

IOH329E  IMBEDDED PSB, TRAN OR LTERM NAME=ALL

Explanation:  An AGNAME control statement was followed by both specific resource names and an ALL resource name. If a resource of ALL is specified, no other resources of that type might be specified for that AGN.

System action:  The statement is ignored. Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.

User response:  Review the security gen source, and correct the error.

Severity:  16

IOH341E  ROW REDUCTION IPAGE ERROR

Explanation:  An internal error occurred performing matrix row reduction.

System action:  The Fast Sysgen process ends.

User response:  Contact IBM Software Support for assistance.

Severity:  A batch job receives a U4021 abend. In an online environment, the Fast Sysgen request is canceled.

IOH342E  TCOLUMN IPAGE ERROR

Explanation:  An internal error occurred creating the TCOLUMN matrix tables.

System action:  The Fast Sysgen process ends.

User response:  Contact IBM Software Support for assistance.

Severity:  A batch job receives a U4021 abend. In an online environment, the Fast Sysgen request is canceled.

IOH351I  MORE THAN 65535 LTERMS DEFINED. TERMINAL, PASSWORD AND SIGNON MATRICES WILL NOT BE USABLE.

Explanation:  This message is issued as a warning that the number of defined LTERMs makes generation of matrix tables for the identified matrices impossible.

System action:  None.

User response:  None. This message is informational.

Severity:  0

IOH352I  MORE THAN 65535 DATABASES DEFINED. PASSWORD MATRIX WILL NOT BE USABLE.

Explanation:  This message is issued as a warning that the number of defined databases makes generation of matrix tables for the identified matrices impossible.

System action:  None.

User response:  None. This message is informational.

Severity:  0
**IOH353I**  MORE THAN 65535 PROGRAM SPECIFICATION BLOCKS DEFINED. PASSWORD MATRIX WILL NOT BE USABLE.

Explanation: This message is issued as a warning that the number of defined programs makes generation of matrix tables for the identified matrices impossible.

System action: None.

User response: None. This message is informational.

Severity: 0

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**IOH354I**  MORE THAN 65535 TRANSACTION NAMES DEFINED. TERMINAL, PASSWORD AND TRANCMD MATRICES WILL NOT BE USABLE.

Explanation: This message is issued as a warning that the number of defined transactions makes generation of matrix tables for the identified matrices impossible.

System action: None.

User response: None. This message is informational.

Severity: 0

---

**IOH351S**  INVALID PARM PASSED TO IOHSTMG

Explanation: An internal error occurred due to an invalid parameter being passed to IOHSTMG.

System action: The Fast Sysgen process ends.

User response: Contact IBM Software Support for assistance.

Severity: A batch job receives a U4021 abend. In an online environment, the Fast Sysgen request is canceled.

---

**IOH361S**  IMODULE GETMAIN FAILED FOR aaaaaaaaa RC=nn

Explanation: An IMS IMODULE GETMAIN function for the named module failed with the indicated return code.

System action: The Fast Sysgen process ends.

User response: Almost all Fast Sysgen storage is obtained above the 16M line, with the exception of some DCB and other I/O related control blocks. Verify that the amount of storage above the 16M line (extended private) is reasonable for the number of resources being generated. Message IEF374I in the JES messages for the job indicates the amount of private area (VIRT) and extended private area (EXT) used by the job. Increasing the region size to 32M or more might resolve the problem.

Severity: In an online environment, the Fast Sysgen request is canceled.

---

**IOH362S**  GETMAIN FAILED FOR aaaaaaaaa RC=nn

Explanation: A GETMAIN failed for the identified module name. The return code from the GETMAIN macro is shown.

System action: The Fast Sysgen process ends.

User response: Almost all Fast Sysgen storage is obtained above the 16M line, with the exception of some DCB and other I/O related control blocks. Verify that the amount of storage above the 16M line (extended private) is reasonable for the number of resources being generated. Message IEF374I in the JES messages for the job indicates the amount of private area (VIRT) and extended private area (EXT) used by the job. Increasing the region size to 32M or more might resolve the problem.

Severity: A batch job receives a U4021 abend. In an online environment, the Fast Sysgen request is canceled.

---

**IOH363W**  FREEMAIN FAILED FOR aaaaaaaaa RC=nn

Explanation: An error occurred freeing storage for the named module. The FREEMAIN macro return code is also indicated.

System action: The Fast Sysgen process ends.

User response: Contact IBM Software Support for assistance.

Severity: A batch job receives a U4021 abend. In an online environment, the Fast Sysgen request is canceled.

---

**IOH364S**  IMODULE FREEMAIN FAILED FOR aaaaaaaaa RC=nn

Explanation: An IMS IMODULE FREEMAIN failed for the named module with the indicated return code.

System action: The Fast Sysgen process ends.

User response: Contact IBM Software Support for assistance.

Severity: In an online environment, the Fast Sysgen request is canceled.

---

**IOH365W**  LOAD FAILED FOR aaaaaaaaa RC=nn

Explanation: An IMS IMODULE LOAD failed for the named module with the indicated return code.

System action: The Fast Sysgen process ends.

User response: Verify that the named module exists in the job's STEPLIB concatenation.
Severity: A batch job receives a U4021 abend. In an online environment, the Fast Sysgen request is canceled.

**IOH367S**  IMODULE LOAD FAILED FOR aaaaaaaaa RC=nn

Explanation: An IMS IMODULE LOAD for the named module failed with the indicated return code.

System action: The Fast Sysgen process ends.

User response: Verify that the named module exists in the job’s STEPLIB concatenation.

Severity: In an online environment, the Fast Sysgen request is canceled.

**IOH368W**  DELETE FAILED FOR aaaaaaaaa RC=nn

Explanation: A DELETE macro failed for the named module with the indicated return code.

System action: The Fast Sysgen process ends.

User response: Contact IBM Software Support for assistance.

Severity: A batch job receives a U4021 abend. In an online environment, the Fast Sysgen request is canceled.

**IOH369W**  IMODULE DELETE FAILED FOR aaaaaaaaa RC=nn

Explanation: An IMS IMODULE DELETE failed for the named module with the indicated return code.

System action: The Fast Sysgen process ends.

User response: Contact IBM Software Support for assistance.

Severity: In an online environment, the Fast Sysgen request is canceled.

**IOH370S**  MAXIMUM IPAGES EXCEEDED FOR MODULE aaaaaaaa

Explanation: The maximum number of IPAGES of storage was used for the named module. The maximum number of IPAGES is 999.

System action: The Fast Sysgen process ends.

User response: Verify that the named module exists in the job’s STEPLIB concatenation.

Severity: A batch job receives a U4021 abend. In an online environment, the Fast Sysgen request is canceled.

**IOH371S**  IPAGE MODULE NAME ERROR - aaaaaaaa

Explanation: An internal error occurred while creating an IPAGE module.

System action: The Fast Sysgen process ends.

User response: Contact IBM Software Support for assistance.

Severity: A batch job receives a U4021 abend. In an online environment, the Fast Sysgen request is canceled.

**IOH381E**  LOAD FAILED FOR xxxxxxxx RC=rrrr ABCODE=aaaa

Explanation: A LOAD for the named module failed with the indicated return code and abend code.

System action: The Fast Sysgen process ends.

User response: Verify that the named module exists in the job’s STEPLIB concatenation.

Severity: A batch job receives a U4021 abend. In an online environment, the Fast Sysgen request is canceled.

**IOH382E**  FIND SCD FAILED IN IOHPPUE0

Explanation: The partner product initialization exit was unable to locate the SCD for this IMS subsystem.

System action: The IMS control region abends with a U4021 abend.

User response: Contact IBM Software Support for assistance. To circumvent the error, remove the IMS HP Sysgen Tools library from the IMS control region STEPLIB. Or, at least remove module IOHPPUE0 and its alias DFSPPUE0.

Severity: A batch job receives a U4021 abend. In an online environment, the Fast Sysgen request is canceled.

**IOH383E**  INVALID KEYWORD IN DFSPPUE0 STATEMENT – xxxxxxxx

Explanation: An unidentified keyword xxxxxxxx was found in a DFSPPUE0 statement in the IOHPimimid member of PROCLIB.

System action: The keyword parameters are skipped.

User response: Review the DFSPPUE0 statements in the IOHP parameter member of PROCLIB. The only valid keyword allowed on this statement is NAME=.
IOH384E  CONTROL CARD SYNTAX ERROR – UNMATCHED PARENS

Explanation: A DFSPPUE0 statement in the IOHP parameter member of PROCLIB contains an unmatched open or close parenthesis.

System action: The remainder of the statement is ignored.

User response: Review the DFSPPUE0 statements in the IOHP parameter member of PROCLIB. Ensure that each statement has the proper parenthesis in the proper order.

IOH385E  MODULE NAME EXCEEDS 8 CHARACTERS

Explanation: A DFSPPUE0 statement in the IOHP parameter member of PROCLIB included a module name that was longer than 8 characters.

System action: The module name is ignored.

User response: Ensure that the module names included in the DFSPPUE0 NAME= specification are properly specified.

IOH386I  INVOKING USER SPECIFIED DFSPPUE0 EXIT ROUTINE XXXXXXXX

Explanation: IMS HP Sysgen initialization is invoking the specified DFSPPUE0 exit routine as requested on a DFSPPUE0 statement in the IOHP parameter member of PROCLIB.

System action: None.

User response: None. This message is informational.

IOH387E  LOAD FOR USER SPECIFIED DFSPPUE0 EXIT ROUTINE MMMMMMMM FAILED RC=RR ABEND=AAAA

Explanation: The named module, as specified on a DFSPPUE0 statement, failed to load.

System action: The named module is not invoked during IMS initialization.

User response: Ensure the proper name was specified on the DFSPPUE0 statement and that the module is available to the IMS control region.

IOH388E  IMS CTL RGN ABEND U4021 DUE TO INITIALIZATION ERROR IN IOHPPUE0


System action: The IMS control region abends.

User response: Investigate prior IOH messages to determine the cause of the initialization failure.

IOH389W  IOHPPUE0 INVOKED MORE THAN ONCE - BYPASSING INITIALIZATION

Explanation: The Fastgen partner product initialization exit was called twice during IMS restart.

System action: The second call to initialize is ignored because Fastgen was already initialized.

User response: This message causes no problems, but indicates that another user of the IMS partner product initialization exit called IOHPPUE0. The message goes away when another PPUE0 exit is updated to not call Fastgen’s exit a second time.

IOH390E  CSVQUERY FAILED RC=XX

Explanation: A CSVQUERY request from the partner product initialization exit received an unexpected return code.

System action: Fastgen initialization continues. Problems might occur if the PPUE0 exit is called more than once during IMS restart processing.

User response: Contact IBM Software Support to report the incident.

IOH391S  IMODULE LOCATE FOR IOHMWX FAILED RC=rrrr

Explanation: IOHICL0 attempted to find module IOHMWX. An IMODULE LOCATE failed to locate the module.

System action: The IMS control region abends.

User response: Contact IBM Software Support for assistance.

Severity: Abend code U4021.

IOH392S  VERIFICATION FAILED FOR MODULE IOHMWX

Explanation: Validation of control block IOHMWX failed. IMS control region execution is unable to continue.

System action: The IMS control region abends.

User response: Contact IBM Software Support for assistance.

Severity: Abend code U4021.

IOH393E  PARSE OF COMMAND FAILED - /MODIFY COMMAND ABORTED

Explanation: The IMS Sysgen Tool attempted to parse a /MODIFY command to determine if the FASTGEN keyword was specified. The parsing process failed.

System action: The /MODIFY command is rejected.
**IOH394E**  •  **IOH403E**

<table>
<thead>
<tr>
<th>Error Code</th>
<th>Description</th>
<th>Explanation</th>
<th>System action</th>
<th>User response</th>
<th>Severity</th>
</tr>
</thead>
<tbody>
<tr>
<td>IOH394E</td>
<td>FASTGEN PROCESS TERMINATED DUE TO IMS SYSGEN ERROR(S)</td>
<td>An online request for a Fast Sysgen failed due to errors encountered in the IMS stage 1 processing.</td>
<td>The /MODIFY command is canceled.</td>
<td>Run the same process in batch mode to identify the source of the errors and correct them.</td>
<td>None</td>
</tr>
<tr>
<td>IOH395E</td>
<td>FASTGEN PROCESS TERMINATED DUE TO MODULE LINK ERROR(S)</td>
<td>An online request for a Fast Sysgen failed due to errors encountered in control block module link edit processing.</td>
<td>The /MODIFY command is canceled.</td>
<td>Some errors are written to the JES log of the IMS control region address space. Check if any error messages indicate the reason for the failure. If not, run the same process in batch mode to identify the source of the errors and correct them.</td>
<td>None</td>
</tr>
<tr>
<td>IOH396W</td>
<td>STORAGE CLEANUP EXPERIENCED AN ERROR FREEING STORAGE</td>
<td>Cleanup processing following Fast Sysgen processing experienced an error.</td>
<td>None.</td>
<td>Contact IBM Software Support for assistance.</td>
<td>None</td>
</tr>
<tr>
<td>IOH397E</td>
<td>FASTGEN PROCESS TERMINATED DUE TO SECURITY GEN ERROR(S)</td>
<td>An online request for a Fast Sysgen failed due to errors encountered in IMS security gen processing.</td>
<td>The /MODIFY command is canceled.</td>
<td>Some errors are written to the JES log of the IMS control region address space. Check if any error messages indicate the reason for the failure. If not, run the same process in batch mode to identify the source of the errors and correct them.</td>
<td>None</td>
</tr>
<tr>
<td>IOH398E</td>
<td>GETMAIN FAILED FOR IOHSAVEA</td>
<td>A GETMAIN request for subpool 0 storage above the 16M line in the IMS control region address space failed.</td>
<td>The /MODIFY command is canceled.</td>
<td>Ensure there is sufficient storage for 576 bytes of storage in the IMS address space. Contact IBM Software Support for assistance.</td>
<td>None</td>
</tr>
<tr>
<td>IOH399W</td>
<td>FREEMAIN FAILED FOR IOHSAVEA</td>
<td>A FREEMAIN for storage used by IMODULE IOHSAVEA failed.</td>
<td>The /MODIFY command is canceled.</td>
<td>Contact IBM Software Support for assistance.</td>
<td>None</td>
</tr>
<tr>
<td>IOH401I</td>
<td>FASTGEN ONLINE INITIALIZATION COMPLETE</td>
<td>The Fast Sysgen utility completed initialization during IMS control region startup.</td>
<td>None.</td>
<td>None. This message is informational.</td>
<td>None</td>
</tr>
<tr>
<td>IOH402E</td>
<td>UNABLE TO LOCATE CVB ENTRY FOR COMMAND INTERCEPT</td>
<td>The command intercept set failed because the required CVB entry was not found.</td>
<td>The IMS control region abends.</td>
<td>Contact IBM Software Support for assistance.</td>
<td>U4021</td>
</tr>
<tr>
<td>IOH403E</td>
<td>IMS COMMAND PROCESSOR ADDRESS WAS NOT AVAILABLE</td>
<td>The command processor address in the CVB was not available.</td>
<td>The IMS control region abends.</td>
<td>Contact IBM Software Support for assistance.</td>
<td>U4021</td>
</tr>
</tbody>
</table>
**IOH410W**  
IMS HP SYSGEN DETECTED  
GENERIC EXITS-BYPASSING EXIT  

Explanation: IMS HP Sysgen Tools detected that IMS Generic Exits for the Partner Product exit routine is active.

System action: The parameter information for IMS HP Sysgen Tools in PROCLIB member requested that another Partner Product exit routine be called by HP Sysgen. This request was bypassed because Generic Exits is active.

User response: Remove PPUE0= specifications from the IMS HP Sysgen Tools PROCLIB member if you convert to using IBM IMS Tools Generic Exits.

Severity: N/A

---

**IOH421E**  
INV ALID PARM PASSED TO IOHDCB  

Explanation: An internal error occurred because an invalid parameter was passed to module IOHDCB.

System action: The job step abends.

User response: Contact IBM Software Support for assistance.

Severity: U4021

---

**IOH422E**  
CLOSE FAILED FOR DDNAME  

Explanation: Cleanup processing failed to close the specified DDNAME.

System action: The job step completes normally. In an online environment, additional Fast Sysgen requests could experience unpredictable results.

User response: Contact IBM Software Support for assistance.

Severity: None.

---

**IOH423E**  
OPEN FAILED FOR type DDNAME  

ddname ABEND $ aaa RC=m

Explanation: An attempt to open a file failed. The message describes the DD type and DD name, as well as the return code (if there was not an abend condition) or the abend code and return code if an abend condition caused the OPEN failure.

System action: The functions fails.

User response: Review the DD type and/or DDNAME in the message text, as well as the abend code and/or return code. Also, review the MVS SYSLOG for related messages, such as IEC130I DD STATEMENT MISSING, or security error messages.

Severity: 8

---

**IOH424E**  
AN ERROR OCCURRED PARSING THE OLCSTAT DATA SET  

Explanation: IMS HP Sysgen Tools attempted to read the OLCSTAT data set to determine the active MODBLKS data set but encountered an unexpected error while parsing the OLCSTAT data set contents.

System action: The request fails.

User response: Ensure that the OLCSTAT data set name specified is correct in the JCL (if the failing request was in a batch job) or in the IMSID options module, and that the OLCSTAT data set is not corrupted.

Severity: 8

---

**IOH441E**  
UNABLE TO LOCATE FASTGEN MWX CB  

Explanation: An IMODULE LOCATE call to find the IOHMWX module in IMS control region storage failed.

System action: The /DIS MODIFY command fails.

User response: Check for prior Fast Sysgen error messages to see if the cause of the problem occurred during initialization. Contact IBM Software Support for assistance.

Severity: None.

---

**IOH442E**  
INVALID MWX ADDRESS RECEIVED  

Explanation: Verification of the Fast Sysgen MWX control block failed.

System action: The /DIS MODIFY command fails.

User response: Check for prior Fast Sysgen error messages to see if the cause of the problem occurred during initialization. Contact IBM Software Support for assistance.

Severity: None.

---

**IOH443E**  
ERROR UPDATING /DIS MODIFY STATUS INFORMATION  

Explanation: Parsing and attempted update of /DIS MODIFY command output failed.

System action: The /DIS MODIFY command fails.

User response: Check for prior Fast Sysgen error messages to see if the cause of the problem occurred during initialization. Contact IBM Software Support for assistance.

Severity: None.
**IOH461E**

TCOMMAND UPDATE FOR TRAN
name FAILED - SMB NOT FOUND

*Explanation:* While installing a TCOMMAND update, IMS HP Sysgen Tools was unable to locate the SMB for the transaction identified in the message text.

*System action:* The installation of the resource update list fails.

*User response:* This condition should not occur. Contact IBM Software Support for assistance.

*Severity:* N/A

---

**IOH462E**

TCOMMAND MATRIX DFSISTCx NOT FOUND

*Explanation:* While installing a TCOMMAND update, IMS HP Sysgen Tools found that the TCOMMAND MATRIX (module DFSISTCx) was not initialized.

*System action:* The installation of the resource update list fails.

*User response:* This condition should not occur. Contact IBM Software Support for assistance.

*Severity:* N/A

---

**IOH463E**

TERMSEC UPDATE FAILED-type name NOT FOUND

*Explanation:* While installing a TERMSEC update, IMS HP Sysgen Tools was unable to locate a resource (COMMAND, LTERM, or TRANSACT as shown in the message) with the indicated name.

*System action:* The installation of the resource update list fails.

*User response:* This condition should not occur. Contact IBM Software Support for assistance.

*Severity:* N/A

---

**IOH464E**

TERMSEC UPDATE FAILED-INVALID RESOURCE ID FOUND FOR LTERM name

*Explanation:* While installing a TERMSEC update, an invalid row number was found for the indicated IMS LTERM name. The row number in the CVB or SMB exceeded the number of rows in the MATRIX table.

*System action:* The installation of the resource update list fails.

*User response:* This condition should not occur. Contact IBM Software Support for assistance.

*Severity:* N/A

---

**IOH465E**

TERMSEC UPDATE FAILED-LTERM name ACCESS TO resource ALREADY status

*Explanation:* While installing a TERMSEC update, an error occurred trying to allow or disallow (as indicated in the message text) access. If the request was to allow access, the named LTERM already had access to the resource. If the request was to disallow access, the named LTERM did not have access to the resource.

*System action:* The installation of the resource update list fails.

*User response:* This condition should not occur. Contact IBM Software Support for assistance.

*Severity:* N/A

---

**IOH466E**

TERMSEC UPDATE FAILED-RESOURCE name IS NOT PROTECTED

*Explanation:* While installing a TERMSEC update, an error occurred trying to disallow access because the resource was not protected.

*System action:* The installation of the requested resource update list fails.

*User response:* This condition should not occur. Contact IBM Software Support for assistance.

*Severity:* N/A

---

**IOH467E**

TERMSEC UPDATE FAILED-# CVBS IN MATRIX INCONSISTENT WITH SCD

*Explanation:* While installing a TERMSEC update, an error occurred verifying the command verb block (CVB) control blocks.

*System action:* The installation of the requested resource update list fails.

*User response:* This condition should not occur. Contact IBM Software Support for assistance.

*Severity:* N/A

---

**IOH468E**

AGN NAME agnname NOT FOUND IN OLD MATRIX(s)

*Explanation:* While attempting to locate the existing AGN named in the message, the AGN was not found.

*System action:* The installation of the requested resource update list fails.

*User response:* This condition should not occur. Contact IBM Software Support for assistance.

*Severity:* N/A
IOH469E  ERROR DELETING typename FROM AGN agnname CODE x

Explanation: While attempting to remove the named resource from the named AGN, an error occurred.
System action: The installation of the requested resource update list fails.
User response: This condition should not occur. Contact IBM Software Support for assistance.
Severity: N/A

IOH470E  LOAD FAILED FOR modname RC=rc ABCODE= code

Explanation: A LOAD for the specified module name failed. Had the condition not been intercepted, the result would have been an abend with abend code code, reason code rc.
System action: The requested function fails.
User response: Verify that the RESLIB DSN and IMS suffix in the IMSID options are correct.
Severity: N/A

IOH471E  TCOMMAND MATRIX ROW LENGTH INVALID-code

Explanation: The length of an IMS command row in a MATRIX module exceeded twenty bytes. This condition should not occur.
System action: The requested function fails.
User response: Contact IBM Software Support for assistance.
Severity: N/A

IOH501E  MODULE xxxxxxxx LOADED FROM dddddd IS NOT A VALID IMS CONTROL BLOCKS MODULE

Explanation: The compare process loaded the identified control block module from the identified DDNAME. It was determined not to be a valid IMS control block module.
System action: The job step abends.
User response: Verify that the MODBLKS data set was created with the same release of IMS that is contained in the RESLIB data set in the job STEPLIB concatenation.
Severity: U4021

IOH511S  PARM FIELD REQUIRED FOR KEYWORD SUFFIX=

Explanation: Execution of the IMS Sysgen Tool compare utility requires the SUFFIX= parameter in the PARM field of the JCL to identify the module suffix(es).
System action: The job step abends.
User response: Add or correct the PARM field.
Severity: U4021

IOH512S  INVALID KEYWORD IN PARM FIELD

Explanation: The value specified in the PARM field of the EXEC JCL statement included an undefined keyword. The PARM field for IOHCOMP must be of the form PARM="SUFFIX=n".
System action: The job step abends.
User response: Correct the PARM field in the EXEC statement.
Severity: U4021

IOH513S  INVALID VALUE IN PARM FIELD FOR KEYWORD keyword

Explanation: The keyword that is named in the message had a invalid value specified.
System action: The job fails.
User response: Review the PARM= field in the JCL to verify that the named keyword has a valid value associated with it.
Severity: N/A

IOH514S  PARM FIELD DID NOT SPECIFY ANY SUFFIX

Explanation: There was no SUFFIX value specified in the PARM field.
System action: The job fails.
User response: Ensure that the PARM field includes the SUFFIX= keyword with at least one value.
Severity: N/A

IOH515S  UNABLE TO LOCATE TIOT ENTRY FOR DDNAME ddbname

Explanation: A required DD statement was not found.
System action: The job fails.
User response: Verify that the specified DD name is included in the job’s JCL.
Severity: N/A

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IOH516S  SWAREQ FAILED RC=nn
Explanation: An SWAREQ macro failed with the indicated return code.
System action: The job fails.
User response: Contact IBM Software Support for assistance.
Severity: N/A

IOH517S  OPEN FAILED FOR DDNAME ddname
Explanation: An MVS OPEN macro failed for the indicated DD name.
System action: The job fails.
User response: Verify that the DD name that is specified is present in the JCL. Check the job’s JESLOG for any other error conditions that might have prevented the DD name from opening.
Severity: N/A

IOH518S  CLOSE FAILED FOR DDNAME ddname
Explanation: An MVS CLOSE macro failed for the indicated DD name.
System action: The job fails.
User response: Check the job’s JESLOG for any other error messages that might be associated with the close failure.
Severity: N/A

IOH519S  DFSVC000 LOADED FROM STEPLIB IS INVALID
Explanation: Module DFSVC000 was loaded from the job’s STEPLIB, but failed to pass validation. For example, the first four bytes of the module might not have been SSCD.
System action: The job fails.
User response: Verify that module DFSVC000 which is being loaded from the IMS RESLIB data set, is a valid module.
Severity: N/A

IOH521E  LOAD FAILED FOR mmmmmmmmm
RC=rrrr ABCODE=aaaaaa
Explanation: A LOAD for a required module failed. The abend code and reason code are described in the message.
System action: The job step abends.
User response: Verify that the STEPLIB concatenation for the compare utility is correct.
Severity: See message.

IOH522E  UNSUPPORTED IMS RELEASE FOUND IN DFSVC000
Explanation: The IMS release indicated in the DFSVC000 module found in STEPLIB is not supported in this release of the IMS Sysgen Tool.
System action: The job step abends.
User response: Apply the required maintenance or upgrade the IMS Sysgen Tool.
Severity: U4021

IOH523E  EXCESSIVE NUMBER OF SUFFIX PARAMETERS SPECIFIED
Explanation: More than 40 suffix parameters were specified in the PARM field of a compare utility execution. 40 is the maximum number of suffixes permitted.
System action: The job step abends.
User response: Reduce the number of SUFFIX= parameters specified in the PARM field.
Severity: U4021

IOH524E  BDLI MACRO FAILED RC=rrrr
Explanation: A BDLI macro failed with the indicated return code.
System action: The job step abends.
User response: Contact IBM Software Support for assistance.
Severity: U4021

IOH525S  IOHPUNCH DD BLKSIZE IS NOT A MULTIPLE OF 80
Explanation: The block size of the data set specified for the IOHPUNCH DD did not have a block size that was a multiple of 80.
System action: The job step abends.
User response: Review the DD statement or data set specified for the IOHPUNCH DD. Ensure that the data set includes DCB attributes of RECFM=FB and LRECL=80.
Severity: U4021

IOH531S  BOTH MODSTAT AND OLCSTAT DDNAMES PRESENT
Explanation: Both MODSTAT and OLCSTAT data sets were found in the job step’s JCL.
System action: The JCLIN generation function fails.
User response: Identify the correct data set included in the JCLIN generator’s JCL, and change the data set
name to NULLFILE. Or, remove the invalid DD from the JCL.

**Severity:**  8

---

**IOH532S**

**REQUIRED DDNAMES NOT PRESENT FOR MODBLKS DATA SETS**

**Explanation:** One or more MODBLKS data sets required to run the JCLIN function were not present in the job step's JCL.

**System action:** The JCLIN generation function fails.

**User response:** If you specified a MODSTAT or OLCSTAT data set, you are required to include both MODBLKSA and MODBLKSB DD statements with the appropriate data sets. If you did not specify either MODSTAT or OLCSTAT data sets in the JCL, then a MODBLKS DD statement is required with the staging MODBLKS data set.

**Severity:**  8

---

**IOH541E**

**INVALID PARM PASSED TO IOHTIME**

**Explanation:** An internal error occurred because an invalid parameter was passed to module IOHTIME.

**System action:** The job step abends in batch mode or an online Fast Sysgen request is canceled.

**User response:** Contact IBM Software Support for assistance.

**Severity:**  U4021

---

**IOH542E**

**TIME MACRO RETURNED RC=xx**

**Explanation:** A TIME request to MVS returned a non-zero return code. Return codes from a TIME call are documented in the *z/OS MVS Programming: Assembler Services Reference* for your release of MVS or OS/390®.

**System action:** The job step abends in batch mode or an online Fast Sysgen request is canceled.

**User response:** Contact IBM Software Support for assistance.

**Severity:**  U4021

---

**IOH543E**

**MVS DATE CONVERSION ROUTINE macro RETURNED RC=rc**

**Explanation:** The named macro, either STCKCONV or CONVTIME, returned an unexpected return code.

**System action:** The function fails.

**User response:** Review the macro named in the message and the return code issued by that macro. Contact IBM Software Support for further assistance.

**Severity:**  N/A

---

**IOH561E**

**PRINT WAS ATTEMPTED BEFORE OPEN**

**Explanation:** A call to print a message was made before print functionality was available.

**System action:** The job step abends in batch mode or an online Fast Sysgen request is canceled.

**User response:** Contact IBM Software Support for assistance.

**Severity:**  U4021

---

**IOH562E**

**INVALID DD INDICATOR PASSED TO PRINT ROUTINE**

**Explanation:** A call to print a line included an invalid indicator specifying the DDNAME for the print output.

**System action:** The job step abends in batch mode or an online Fast Sysgen request is canceled.

**User response:** Contact IBM Software Support for assistance.

**Severity:**  U4021

---

**IOH563E**

**PRINT TO CURRENT DDNAME REQUESTED BUT NO GEN PROCESS WAS ACTIVE**

**Explanation:** A request to print an input line failed because the indicator for the type of input in progress was not set properly.

**System action:** The job step abends in batch mode or an online Fast Sysgen request is canceled.

**User response:** Contact IBM Software Support for assistance.

**Severity:**  U4021

---

**IOH564E**

**MESSAGE EXCEEDS 132 BYTES**

**Explanation:** A message or header to be printed by IOHPRNT exceeded the maximum size (132 bytes).

**System action:** The job step abends in batch mode or an online Fast Sysgen request is canceled.

**User response:** Contact IBM Software Support for assistance.

**Severity:**  U4021

---

**IOH565E**

**MACRO EXCEEDED 50 LINE LIMIT - ONLY FIRST 50 LINES WILL BE PRINTED**

**Explanation:** An IMS SYSGEN macro encountered in the IMS sysgen input exceeded 50 lines, and an error occurred associated with the macro. If a separate print DD is associated with IMS SYSGEN output (based on the IMSGEN specification in the Fast Sysgen

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parameters), then only the first 50 lines of the macro will be printed in the error summary.

**System action:** The job step abends in batch mode or an online Fast Sysgen request is canceled.

**User response:** Review the macro that experienced the error. Reduce the number of continuation lines used to specify the macro.

**Severity:** U4021

---

**IOH566E** INVALID PRINT FUNCTION REQUEST BYTE

**Explanation:** A request to IOHPRNT specified an invalid function indicator.

**System action:** The job step abends in batch mode or an online Fast Sysgen request is canceled.

**User response:** Contact IBM Software Support for assistance.

**Severity:** U4021

---

**IOH567E** GETMAIN FAILED FOR MSG BUFF IN IOHPRNT

**Explanation:** A GETMAIN for message buffers failed. Processing cannot continue.

**System action:** The job step abends in batch mode or an online Fast Sysgen request is canceled.

**User response:** Contact IBM Software Support for assistance.

**Severity:** U4021

---

**IOH568E** OPEN FAILED FOR PRINT DDNAME xxxxxxx

**Explanation:** Open failed for the specified DDNAME. This DDNAME was specified in the Fast Sysgen parameters as a PRINT= value.

**System action:** The job step abends.

**User response:** Ensure that all print output DDNAMEs specified in the Fast Sysgen parameter specifications are included in the batch job's JCL. If output is directed to a data set instead of SYSOUT, ensure that the DCB attributes are RECFM=FBA,LRECL=133.

**Severity:** U4021

---

**IOH569E** CLOSE FAILED FOR PRINT DDNAME ddddddd

**Explanation:** An MVS CLOSE macro returned with RC=04, leaving the specified print DD name open.

**System action:** The job step abends.

**User response:** Review the MVS SYSLOG for any additional error messages related to this DD name. Contact IBM Software Support for assistance.

**Severity:** U4021

---

**IOH570E** REQUESTED MESSAGE LENGTH EXCEEDS MAX LENGTH

**Explanation:** A message or header to be printed by IOHPRNT exceeded the maximum size (132 bytes).

**System action:** In batch mode, the job step abends. For online Fast Sysgen requests, the command is canceled.

**User response:** Contact IBM Software Support for assistance.

**Severity:** U4021

---

**IOH1500E** IOHIMSID DD STATEMENT MISSING

**Explanation:** The DD statement for the IOH input data set, IOHIMSID, is not present in the JCL. This is a required data set.

**System action:** The job step ends with a return code 12.

**User response:** Correct the JCL and rerun the job.

**Severity:** 12

---

**IOH1501E** - UNABLE TO OPEN DD NAME IOHIMSID

**Explanation:** An error occurred when attempting to open the data set IOHIMSID.

**System action:** The job step ends with a return code 12.

**User response:** Correct the JCL, and rerun the job.

**Severity:** 12

---

**IOH1520E** - IMSID MUST START IN COLUMN 1

**Explanation:** An invalid record was read from the IOHIMSID input. Column 1 must contain either the first character of the IMSID or an asterisk (*).

**System action:** The job step ends with a return code 12.

**User response:** Correct the IOHIMSID input, and rerun the job.

**Severity:** 12

---

**IOH1521E** - INVALID IMSID, MUST BE BLANK AFTER IMSID

**Explanation:** An invalid record was read from the IOHIMSID input. The IMSID must start in column 1 and occupy the first 4 bytes. Column 5 must be a blank and the parameter must start at or after byte 6.
System action: The job step ends with a return code 12.  
User response: Correct the IOHIMSID input, and rerun the job.  
Severity: 12

IOH1522E  - IMSID MORE THAN FOUR BYTES LONG  
Explanation: An invalid record was read from the IOHIMSID input. The IMSID must start in column 1 and occupy the first 4 bytes. Column 5 must be a blank and the parameters must start at or after byte 6.  
System action: The job step ends with a return code 12.  
User response: Correct the IOHIMSID input, and rerun the job.  
Severity: 12

IOH1523E  - MORE IMSID ENTRIES THAN SUPPORTED  
Explanation: The Merge Clone tool supports merging up to 64 IMS systems. The IOHIMSID input contained more than 64 different IMS ID records.  
System action: The job step ends with a return code 12.  
User response: Correct the IOHIMSID input, and rerun the job.  
Severity: 12

IOH1524E  - PARAMETER REQUIRED BUT NONE SUPPLIED  
Explanation: The previous IOHIMSID input record contained what was believed to be a valid IMSID, but the record was missing all parameter information.  
IOHIMSID input parameters must end by byte 72.  
System action: The job step ends with a return code 12.  
User response: Correct the IOHIMSID input, and rerun the job.  
Severity: 12

IOH1525E  - INVALID PARAMETER ENCOUNTERED  
Explanation: The previous IOHIMSID input record contained what was believed to be a valid IMSID, but it also contained an invalid parameter name.  
IOHIMSID input parameters must end by byte 72.  
System action: The job step ends with a return code 12.  
User response: Correct the IOHIMSID input, and rerun the job.  
Severity: 12

IOH1526E  - NOT ENOUGH bytes IN RECORD FOR VALID SUFFIX  
Explanation: The previous IOHIMSID input record reached an end of record condition before a valid parameter was found.  
IOHIMSID input parameters must end by byte 72.  
System action: The job step ends with a return code 12.  
User response: Correct the IOHIMSID input, and rerun the job.  
Severity: 12

IOH1527E  - NO VALUE SUPPLIED FOR SUFFIX PARAMETER  
Explanation: The previous IOHIMSID input record did not contain a valid suffix value. The Merge Clone tool needs to know the IMS gen suffix to determine which MODBLKS data set members to load.  
IOHIMSID input parameters must end by byte 72.  
System action: The job step ends with a return code 12.  
User response: Correct the IOHIMSID input, and rerun the job.  
Severity: 12

IOH1528E  - NOT ENOUGH bytes IN RECORD FOR VALID VERSION  
Explanation: The previous IOHIMSID input record reached an end of record condition before a valid parameter was found.  
IOHIMSID input parameters must end by byte 72.  
System action: The job step ends with a return code 12.  
User response: Correct the IOHIMSID input, and rerun the job.  
Severity: 12

IOH1529E  - NO VALUE SUPPLIED FOR VERSION KEYWORD  
Explanation: The previous IOHIMSID input record did not contain a valid IMS version. The Merge Clone tool needs to know the IMS version so it knows which IOH module to use to read the MODBLKS data set.  
IOHIMSID input parameters must end by byte 72.
IOH1530E • IOH1537E

System action: The job step ends with a return code 12.
User response: Correct the IOHIMSID input, and rerun the job.
Severity: 12

IOH1530E - UNSUPPORTED IMS VERSION SPECIFIED
Explanation: The previous IOHIMSID input record contains either an invalid version number or a version of IMS that is not supported by this release of the Merge Clone tool.

System action: The job step ends with a return code 12.
User response: Correct the IOHIMSID input, and rerun the job.
Severity: 12

IOH1531E - REQUIRED PARAMETERS OMITTED
Explanation: The previous IOHIMSID input record did not contain a valid parameter.

System action: The job step ends with a return code 12.
User response: Correct the IOHIMSID input, and rerun the job.
Severity: 12

IOH1532E - SYNTAX ERROR, OPENING PAREN NOT PRESENT
Explanation: The previous IOHIMSID input record contained invalid syntax. The syntax for the SYSID parameter is "SYSID=(a,b)", where a is the remote SYSID and b is the local SYSID. Both a and b must be numeric values.

System action: The job step ends with a return code 12.
User response: Correct the IOHIMSID input, and rerun the job.
Severity: 12

IOH1533E - SYNTAX ERROR, NON-NUMERIC CHARACTER ENCOUNTERED
Explanation: The previous IOHIMSID input record encountered a non-numeric value in the SYSID. The syntax for the SYSID parameter is "SYSID=(a,b)", where a is the remote SYSID and b is the local SYSID. Both a and b must be numeric values.

System action: The job step ends with a return code 12.
User response: Correct the IOHIMSID input, and rerun the job.
Severity: 12

IOH1534E - END OF RECORD REACHED BEFORE VALID SYSID FOUND
Explanation: The previous IOHIMSID input record did not contain a valid SYSID parameter. The syntax for the SYSID parameter is "SYSID=(a,b)", where a is the remote SYSID and b is the local SYSID.

System action: The job step ends with a return code 12.
User response: Correct the IOHIMSID input, and rerun the job.
Severity: 12

IOH1535E - SYNTAX ERROR, VALID SYSID NOT FOUND
Explanation: The previous IOHIMSID input record did not contain a valid SYSID parameter. The syntax for the SYSID parameter is "SYSID=(a,b)", where a is the remote SYSID and b is the local SYSID.

System action: The job step ends with a return code 12.
User response: Correct the IOHIMSID input, and rerun the job.
Severity: 12

IOH1536E - SYNTAX ERROR, TOO MANY DIGITS IN SYSID
Explanation: The previous IOHIMSID input record contained an invalid SYSID value. Both the remote and local SYSID values might contain up to 4 digits. Valid values for the SYSIDs are from 1 to 2055.

System action: The job step ends with a return code 12.
User response: Correct the IOHIMSID input, and rerun the job.
Severity: 12

IOH1537E - SYSID GREATER THAN MAXIMUM VALUE (2055)
Explanation: The previous IOHIMSID input record contained an invalid SYSID. The maximum value allowed for a SYSID is 2055.

System action: The job step ends with a return code 12.
User response: Correct the IOHIMSID input, and rerun the job.
Severity: 12

IOH1538E - INVALID SYSID, MUST BE GREATER THAN 0

Explanation: The previous IOHIMSID input record contained an invalid SYSID value. The minimum value allowed for a SYSID is 1.

System action: The job step ends with a return code 12.

User response: Correct the IOHIMSID input, and rerun the job.

Severity: 12

IOH1539E - SYNTAX ERROR, PADDING BYTE NOT BLANK

Explanation: The previous IOHIMSID input record was invalid. The byte after the closing parenthesis must be a blank.

System action: The job step ends with a return code 12.

User response: Correct the JCL, and rerun the job.

Severity: 12

IOH1540E - MORE THAN 512 SYSID PAIRS DEFINED

Explanation: A table overflow condition has been encountered. A single IMS can have a maximum of 512 SYSID pairs.

System action: The job step ends with a return code 12.

User response: Ensure all of the SYSID pairs coded for each IMS are necessary. Remove any unnecessary SYSID pairs and rerun the job.

If all SYSID pairs are required, contact IBM Software Support for assistance.

Severity: 12

IOH1550E - NO VALID IMS SECTIONS FOUND

Explanation: After all records have been read from IOHIMSID, there are no valid IMS system records.

System action: The job step ends with a return code 12.

User response: Correct the IOHIMSID, and rerun the job.

Severity: 12

IOH1551E - SYSID nnnn DEFINED AS LOCAL IN MULTIPLE SYSTEMS

Explanation: Each IMS being merged must have unique local SYSID’s. SYSID nnnn was defined as local to multiple systems.

System action: The job step ends with a return code 12.

User response: Correct the IOHIMSID input, and rerun the job.

Severity: 12

IOH1552E - VERSION REQUIRED BUT NOT SPECIFIED FOR: insid

Explanation: The IMS version must be supplied for each IMS being merged. IMS insid did not have a valid version supplied.

The Merge Clone tool needs to know the IMS version in order to call the proper routine to read the IMS MODBLKS data set.

System action: The job step ends with a return code 12.

User response: Supply a valid version for each IMS, and rerun the job.

Severity: 12

IOH1553E - SUFFIX REQUIRED BUT NOT SPECIFIED FOR: insid

Explanation: An IMS gen suffix must be supplied for each IMS being merged. IMS insid did not have a valid version supplied.

The Merge Clone tool needs to know the IMS Gen suffix in order to load the proper members from the IMS MODBLKS data set.

System action: The job step ends with a return code 12.

User response: Supply a valid suffix for each IMS, and rerun the job.

Severity: 12

IOH1554E - AT LEAST ONE SYSID PAIR REQUIRED BUT NONE SPECIFIED FOR: insid

Explanation: A valid SYSID pair must be supplied for each IMS being merged. IMS insid did not have a valid SYSID pair. The Merge Clone tool needs a SYSID pair so it can build the SYSID parameters on the transaction definitions.

System action: The job step ends with a return code 12.
User response: Provide all valid SYSID pairs for each IMS being merged.
Severity: 12

**IOH1555E - MORE THAN ONE IMS REQUIRED**

Explanation: In order to perform a merge of IMS systems, there must be more than one IMS.
System action: The job step ends with a return code 12.
User response: Correct the IOHIMSID input, and rerun the job.
Severity: 12

**IOH1556E - ERROR ENCOUNTERED IN REMOTE SYSID TABLE**

Explanation: An error has been detected in the IMS MSC cross reference checking. Check for prior error messages in the IOHLIST output.
System action: The job step ends with a return code 12.
User response: Correct the IOHIMSID input, and rerun the job.
Severity: 12

**IOH1557E - imsid1 DOES NOT HAVE ANY LINKS TO imsid2**

Explanation: In order to build the correct SYSID definitions on the IMS transactions, each IMS must have a SYSID pair that points to each IMS system being merged. In this case, imsid1 did not have any SYSID pairs that pointed to imsid2.
System action: The job step ends with a return code 12.
User response: Correct the IOHIMSID input, and rerun the job.
Severity: 12

**IOH1600W - ** TRANSACTION tran ON IMS imsid HAD PROGRAM CHANGED FROM pgm1 TO pgm2**

Explanation: A definition conflict existed for transaction tran. The definition for tran was changed on IMS imsid. The program to which tran was assigned was changed from pgm1 to pgm2.
System action: Processing continues and a return code of 4 is set. If a more severe error is encountered, the return code for that error will be used.
User response: Review the IMS gen and, if desired, update the definition before running the IMS gen.
Severity: 4

**IOH1601W - ** TRANSACTION tran ON IMS imsid WAS CHANGED FROM REMOTE OUTSIDE THE PLEX TO LOCAL**

Explanation: A definition conflict existed for transaction tran. Transaction tran was defined local on at least one system in the IMSplex and remote on imsid. Since it was local on one system, it is changed to local in all systems.
System action: Processing continues and a return code of 4 is set. If a more severe error is encountered, the return code for that error will be used.
User response: Review the IMS gen and, if desired, update the definition before running the IMS gen.
Severity: 4

**IOH1602I - TRANSACTION tran ON IMS imsid CHANGED TO MULTSEG**

Explanation: A definition conflict existed for transaction tran. Transaction tran was defined MULTSEG on at least one system in the IMSplex, so it was changed to MULTSEG on all systems.
System action: Processing continues.
User response: Review the IMS gen and, if desired, update the definition before running the IMS gen.
Severity: 0

**IOH1603I - TRANSACTION tran ON IMS imsid CHANGED TO NONRESPONSE**

Explanation: A definition conflict existed for transaction tran. The definition for tran was changed on IMS imsid. The conflict was resolved using the default transaction definition selected by the Merge Clone utility.
System action: Processing continues.
User response: Review the IMS gen and, if desired, update the definition before running the IMS gen.
Severity: 0
IOH1604I  - TRANSACTION tran ON IMS insid
CHANGED TO RESPONSE

Explanation: A definition conflict existed for transaction tran. The definition for tran was changed on IMS insid. The conflict was resolved using the default transaction definition selected by the Merge Clone utility.

See “Conflict resolution” on page 232 for a description of how conflicts are resolved.

System action: Processing continues.

User response: Review the IMS gen and, if desired, update the definition before running the IMS gen.

Severity: 0

IOH1605I  - TRANSACTION tran ON IMS insid
CHANGED TO CONVERSATIONAL

Explanation: A definition conflict existed for transaction tran. The definition for tran was changed on IMS insid. The transaction was defined as conversational on at least one system, so it was defined changed to conversational on insid.

See “Conflict resolution” on page 232 for a description of how conflicts are resolved.

System action: Processing continues and a return code of 4 is set. If a more severe error is encountered, the return code for that error will be used.

User response: Review the IMS gen and, if desired, update the definition before running the IMS gen.

Severity: 4

IOH1606I  - TRANSACTION tran ON IMS insid
CHANGED TO EDIT=ULC

Explanation: A definition conflict existed for transaction tran. The definition for tran was changed on IMS insid. The conflict was resolved using the default transaction definition selected by the Merge Clone utility.

See “Conflict resolution” on page 232 for a description of how conflicts are resolved.

System action: Processing continues.

User response: Review the IMS gen and, if desired, update the definition before running the IMS gen.

Severity: 0

IOH1607I  - TRANSACTION tran ON IMS insid
CHANGED TO EDIT=UC

Explanation: A definition conflict existed for transaction tran. The definition for tran was changed on IMS insid. The conflict was resolved using the default transaction definition selected by the Merge Clone utility.

See “Conflict resolution” on page 232 for a description of how conflicts are resolved.

System action: Processing continues.

User response: Review the IMS gen and, if desired, update the definition before running the IMS gen.

Severity: 0
IOH1611I - TRANSACTION tran ON IMS imsid
CHANGED TO DCLWA=YES

Explanation: A definition conflict existed for transaction tran. The definition for tran was changed on IMS imsid. The conflict was resolved using the default transaction definition selected by the Merge Clone utility.

See "Conflict resolution" on page 232 for a description of how conflicts are resolved.

System action: Processing continues.

User response: Review the IMS gen and, if desired, update the definition before running the IMS gen.

Severity: 0

IOH1615I - TRANSACTION tran ON IMS imsid
CHANGED TO WFI

Explanation: A definition conflict existed for transaction tran. The definition for tran was changed on IMS imsid. The conflict was resolved using the default transaction definition selected by the Merge Clone utility.

See "Conflict resolution" on page 232 for a description of how conflicts are resolved.

System action: Processing continues.

User response: Review the IMS gen and, if desired, update the definition before running the IMS gen.

Severity: 0

IOH1611I - TRANSACTION tran ON IMS imsid
CHANGED TO ROUTING=NO

Explanation: A definition conflict existed for transaction tran. The definition for tran was changed on IMS imsid. The conflict was resolved using the default transaction definition selected by the Merge Clone utility.

See "Conflict resolution" on page 232 for a description of how conflicts are resolved.

System action: Processing continues.

User response: Review the IMS gen and, if desired, update the definition before running the IMS gen.

Severity: 0

IOH1616I - TRANSACTION tran ON IMS imsid
CHANGED TO SCHD=n

Explanation: A definition conflict existed for transaction tran. The definition for tran was changed on IMS imsid. The conflict was resolved using the default transaction definition selected by the Merge Clone utility.

See "Conflict resolution" on page 232 for a description of how conflicts are resolved.

System action: Processing continues.

User response: Review the IMS gen and, if desired, update the definition before running the IMS gen.

Severity: 0

IOH1613I - TRANSACTION tran ON IMS imsid
CHANGED TO NOT A WFI

Explanation: A definition conflict existed for transaction tran. The definition for tran was changed on IMS imsid. The conflict was resolved using the default transaction definition selected by the Merge Clone utility.

See "Conflict resolution" on page 232 for a description of how conflicts are resolved.

System action: Processing continues.

User response: Review the IMS gen and, if desired, update the definition before running the IMS gen.

Severity: 0

IOH1617I - TRANSACTION tran ON IMS imsid
CHANGED TO INQ=NO

Explanation: A definition conflict existed for transaction tran. The definition for tran was changed on IMS imsid. The conflict was resolved using the default transaction definition selected by the Merge Clone utility.

See "Conflict resolution" on page 232 for a description of how conflicts are resolved.

System action: Processing continues.

User response: Review the IMS gen and, if desired, update the definition before running the IMS gen.

Severity: 0
IOH1618I - TRANSACTION tran ON IMS imsid
CHANGED TO RECOVER

Explanation: A definition conflict existed for transaction tran. The definition for tran was changed on IMS imsid. The conflict was resolved using the default transaction definition selected by the Merge Clone utility.

See “Conflict resolution” on page 232 for a description of how conflicts are resolved.

System action: Processing continues.

User response: Review the IMS gen and, if desired, update the definition before running the IMS gen.

Severity: 0

IOH1619I - TRANSACTION tran ON IMS imsid
CHANGED TO SERIAL=NO

Explanation: A definition conflict existed for transaction tran. The definition for tran was changed on IMS imsid. The conflict was resolved using the default transaction definition selected by the Merge Clone utility.

See “Conflict resolution” on page 232 for a description of how conflicts are resolved.

System action: Processing continues.

User response: Review the IMS gen and, if desired, update the definition before running the IMS gen.

Severity: 0

IOH1620I - TRANSACTION tran ON IMS imsid
CHANGED TO SERIAL=YES

Explanation: A definition conflict existed for transaction tran. The definition for tran was changed on IMS imsid. The conflict was resolved using the default transaction definition selected by the Merge Clone utility.

See “Conflict resolution” on page 232 for a description of how conflicts are resolved.

System action: Processing continues.

User response: Review the IMS gen and, if desired, update the definition before running the IMS gen.

Severity: 0

IOH1621I - TRANSACTION tran ON IMS imsid
CHANGED FROM FPATH=(POTENTIAL/EXCLUSIVE) TO FPATH=NO

Explanation: A definition conflict existed for transaction tran. The definition for tran was changed on IMS imsid. The conflict was resolved using the default transaction definition selected by the Merge Clone utility.

See “Conflict resolution” on page 232 for a description of how conflicts are resolved.

System action: Processing continues.

User response: Review the IMS gen and, if desired, update the definition before running the IMS gen.

Severity: 0

IOH1622I - TRANSACTION tran ON IMS imsid
CHANGED TO FPATH=YES (POTENTIAL)

Explanation: A definition conflict existed for transaction tran. The definition for tran was changed on IMS imsid. The conflict was resolved using the default transaction definition selected by the Merge Clone utility.

See “Conflict resolution” on page 232 for a description of how conflicts are resolved.

System action: Processing continues.

User response: Review the IMS gen and, if desired, update the definition before running the IMS gen.

Severity: 0

IOH1623I - TRANSACTION tran ON IMS imsid
CHANGED TO FPATH=YES (EXCLUSIVE)

Explanation: A definition conflict existed for transaction tran. The definition for tran was changed on IMS imsid. The conflict was resolved using the default transaction definition selected by the Merge Clone utility.

See “Conflict resolution” on page 232 for a description of how conflicts are resolved.

System action: Processing continues.

User response: Review the IMS gen and, if desired, update the definition before running the IMS gen.

Severity: 0

IOH1624W - ** TRANSACTION tran ON IMS imsid
DEFINED WITH TRANSACTION EDIT ROUTINE

Explanation: A definition conflict existed for transaction tran. The definition for tran was changed on IMS imsid. Transaction tran was defined on at least one IMS as using a Transaction Edit Routine, so all systems will now use the Transaction Edit Routine.

See “Conflict resolution” on page 232 for a description of how conflicts are resolved.

System action: Processing continues and a return code
of 8 is set. If a more severe error is encountered, then a higher return code might be set at termination.

**User response:** When receiving this message you are required to edit your stage 1 source. The Merge Clone tool cannot determine the name of the Edit Routine you had on your Transaction so it fills in the stage 1 TRANSACT macro with 8 plus signs ("++++++++++"). You will need to replace all the plus signs with the valid Transaction Edit Routine name.

If adding new Transaction Edit Routines or changing the sequence of the Edit Routine in the gen, you will need to run a minimum of a CTLBLKS gen.

**Severity:** 8

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**IOH1625I** - ** TRANSACTION tran ON IMS imsid CHANGED TO CLASS n**

**Explanation:** A definition conflict existed for transaction tran. The definition for tran was changed on IMS imsid. The conflict was resolved using the default transaction definition selected by the Merge Clone utility.

See [“Conflict resolution” on page 232](#) for a description of how conflicts are resolved.

**System action:** Processing continues.

**User response:** Review the IMS gen and, if needed, update the definition before running the IMS gen.

**Severity:** N/A

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**IOH1630I** - ** APPLCTN psb ON IMS imsid CHANGED TO RESIDENT**

**Explanation:** A definition conflict existed for APPLCTN psb. The definition for psb was changed on IMS imsid. If the APPLCTN macro was defined as Resident on any IMS system, it is defined that way in all IMS systems.

See [“Conflict resolution” on page 232](#) for a description of how conflicts are resolved.

**System action:** Processing continues.

**User response:** Review the IMS gen and, if needed, update the definition before running the IMS gen.

**Severity:** 0

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**IOH1631I** - ** APPLCTN psb ON IMS imsid CHANGED TO DOPT**

**Explanation:** A definition conflict existed for APPLCTN psb. The definition for psb was changed on IMS imsid. If the APPLCTN macro was defined as DOPT on any IMS system, it is defined that way in all IMS systems. (If the APPLCTN macro was previously found to be Resident, then all DOPT checking is bypassed.)

See [“Conflict resolution” on page 232](#) for a description of how conflicts are resolved.

**System action:** Processing continues.

**User response:** Review the IMS gen and, if desired, update the definition before running the IMS gen.

**Severity:** 0
IOH1632W - APPLCTN psb ON IMS imsid
CHANGED TO PARALLEL

Explanation: A definition conflict existed for APPLCTN psb. The definition for psb was changed on IMS imsid. If the APPLCTN was defined as PARALLEL on any IMS system, it is defined that way in all IMS systems.

See “Conflict resolution” on page 232 for a description of how conflicts are resolved.

System action: Processing continues.

User response: Review the IMS gen and, if desired, update the definition before running the IMS gen.

Severity: 0

IOH1633I - APPLCTN psb ON IMS imsid HAD
GPSB REMOVED

Explanation: A definition conflict existed for APPLCTN psb. The definition for psb was changed on IMS imsid. The APPLCTN was defined on at least one system as non-GPSB and the PSBLIB contained a member with the same name as psb.

See “Conflict resolution” on page 232 for a description of how conflicts are resolved.

System action: Processing continues.

User response: Review the IMS gen and, if desired, update the definition before running the IMS gen.

Severity: 0

IOH1634I - APPLCTN psb ON IMS imsid HAD
GPSB REMOVED

Explanation: A definition conflict existed for APPLCTN psb. The definition for psb was changed on IMS imsid. At least one IMS system in the IMSplex had the same named PSB defined as a non-GPSB and PSBLIB contained a member with the same name as psb.

See “Conflict resolution” on page 232 for a description of how conflicts are resolved.

System action: Processing continues.

User response: Review the IMS gen and, if desired, update the definition before running the IMS gen.

Severity: 0

IOH1635W - APPLCTN psb ON IMS imsid IS NOW
GENNED AS FPATH=NO

Explanation: A definition conflict existed for APPLCTN psb. The definition for psb was changed on IMS imsid. The conflict was resolved using the default transaction definition selected using the Merge Clone utility.

See “Conflict resolution” on page 232 for a description of how conflicts are resolved.

System action: Processing continues.

User response: Review the IMS gen and, if desired, update the definition before running the IMS gen.

Severity: 0

IOH1636W - APPLCTN psb ON IMS imsid IS NOW
GENNED AS FPATH=nnn

Explanation: A definition conflict existed for APPLCTN psb. The definition for psb was changed on IMS imsid. The conflict was resolved using the default transaction definition selected using the Merge Clone utility.

See “Conflict resolution” on page 232 for a description of how conflicts are resolved.

System action: Processing continues with a return code 4 set. If a more severe error is encountered, that return code will be used at program termination.

User response: Review the IMS gen and, if desired, update the definition before running the IMS gen.

Severity: 0

IOH1637I - APPLCTN psb ON IMS imsid
CHANGED TO PGMTYPE=TP

Explanation: A definition conflict existed for APPLCTN psb. The definition for psb was changed on IMS imsid. If the APPLCTN macro was defined as TP in any IMS system, it will be defined that way in all IMS systems.

See “Conflict resolution” on page 232 for a description of how conflicts are resolved.

System action: Processing continues.

User response: Review the IMS gen and, if desired, update the definition before running the IMS gen.

Severity: 0

IOH1638I - DATABASE dbd ON IMS imsid
IS NOW GENNED AS RESIDENT

Explanation: A definition conflict existed for database dbd. The definition for dbd was changed on IMS imsid. If a database is defined as Resident on any IMS system, it will be defined as Resident in all IMS systems.

See “Conflict resolution” on page 232 for a description of how conflicts are resolved.

System action: Processing continues.

User response: Review the IMS gen and, if desired, update the definition before running the IMS gen.
Severity: 0

**IOH1641I** - DATABASE dbd ON IMS imsid
CHANGED TO ACCESS=RO

**Explanation:** A definition conflict existed for database dbd. The definition for dbd was changed on IMS imsid. Another IMS system has database dbd defined with ACCESS=EX. When this occurs, all other IMS systems will have dbd reset to ACCESS=RO.

See "Conflict resolution" on page 232 for a description of how conflicts are resolved.

**System action:** Processing continues.

**User response:** Review the IMS gen and, if desired, update the definition before running the IMS gen.

Severity: 0

**IOH1642I** - DATABASE dbd ON IMS imsid
CHANGED TO ACCESS=UP

**Explanation:** A definition conflict existed for database dbd. The definition for dbd was changed on IMS imsid. Database dbd was defined as ACCESS=UP on more than one IMS system, or it was specified as a database name in the IOHSHLVL input, so it was made UP on all IMS systems.

See "Conflict resolution" on page 232 for a description of how conflicts are resolved.

**System action:** Processing continues.

**User response:** Review the IMS gen and, if desired, update the definition before running the IMS gen.

Severity: 0

**IOH1643I** - DATABASE dbd ON IMS imsid
DEFINED WITH ACCESS=xx

**Explanation:** Database dbd was added to IMS imsid and defined with ACCESS=xx.

**System action:** Processing continues.

**User response:** Review the IMS gen and, if desired, update the definition before running the IMS gen.

Severity: 0

**IOH1699I** - NO EXCEPTIONS ENCOUNTERED

**Explanation:** IOH editing completed without encountering a definition conflict.

**System action:** Processing continues.

**User response:** Review the IMS gen and, if desired, update the definition before running IMS gen.

Severity: 0

**IOH1700E** - IOHLIST DD STATEMENT MISSING

**Explanation:** IOHLIST is a required DD statement but is not present.

**System action:** Processing ends with a return code 12.

**User response:** Correct the JCL, and rerun the job.

Severity: 12

**IOH1701E** - UNABLE TO OPEN DD IOHLIST

**Explanation:** An error was encountered attempting to open data set IOHLIST.

**System action:** Processing ends with a return code 12.

**User response:** Check the job log for additional information, correct the JCL and rerun the job.

Severity: 12

**IOH1702E** - IOHPUNCH DD STATEMENT MISSING

**Explanation:** IOHPUNCH is a required DD statement but is not present.

**System action:** Processing ends with a return code 12.

**User response:** Correct the JCL, and rerun the job.

Severity: 12

**IOH1703E** - UNABLE TO OPEN DD IOHPUNCH

**Explanation:** An error was encountered attempting to open DD IOHPUNCH.

**System action:** Processing ends with a return code 12.

**User response:** Check the job log for additional information, correct the JCL and rerun the job.

Severity: 12

**IOH1704E** - IMS DD STATEMENT MISSING

**Explanation:** IMS is a required DD statement but is not present.

**System action:** Processing ends with a return code 12.

**User response:** Correct the JCL, and rerun the job.

Severity: 12

**IOH1705E** - UNABLE TO OPEN DD IMS

**Explanation:** An error was encountered attempting to open DD IMS.

**System action:** Processing ends with a return code 12.

**User response:** Check the job log for additional information, correct the JCL and rerun the job.

Severity: 12
<table>
<thead>
<tr>
<th>IOH1706E</th>
<th>IOHEXCPT DD STATEMENT MISSING</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong></td>
<td>IOHEXCPT is a required DD statement but is not present.</td>
</tr>
<tr>
<td><strong>System action:</strong></td>
<td>Processing ends with a return code 12.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Correct the JCL, and rerun the job.</td>
</tr>
<tr>
<td><strong>Severity:</strong></td>
<td>12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IOH1707E</th>
<th>UNABLE TO OPEN DD IOHEXCPT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong></td>
<td>An error was encountered attempting to open DD IOHEXCPT.</td>
</tr>
<tr>
<td><strong>System action:</strong></td>
<td>Processing ends with a return code 12.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Check the job log for additional information, correct the JCL and rerun the job.</td>
</tr>
<tr>
<td><strong>Severity:</strong></td>
<td>12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IOH1708I</th>
<th>AFFINITY PROCESSING BYPASSED, IOHAFFIN DD STATEMENT MISSING</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong></td>
<td>IOHAFFIN input is used to force transaction routing to certain systems. When this DD statement is not supplied, all transaction routing is determined using database ACCESS and PSB PROCOPT values.</td>
</tr>
<tr>
<td><strong>System action:</strong></td>
<td>Processing continues.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>None. This message is informational.</td>
</tr>
<tr>
<td><strong>Severity:</strong></td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IOH1709E</th>
<th>UNABLE TO OPEN DD IOHAFFIN</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong></td>
<td>An error was encountered attempting to open DD IOHAFFIN.</td>
</tr>
<tr>
<td><strong>System action:</strong></td>
<td>Processing ends with a return code 12.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Check the job log for additional information, correct the JCL, and rerun the job.</td>
</tr>
<tr>
<td><strong>Severity:</strong></td>
<td>12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IOH1710E</th>
<th>SHARELVL PROCESSING BYPASSED, IOHSHLVL DD STATEMENT MISSING</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong></td>
<td>IOHSHLVL input is used to force SharelV(3) on certain databases. When this is done, these databases are defined with ACCESS=UP in all systems regardless of how they were previously defined.</td>
</tr>
<tr>
<td><strong>System action:</strong></td>
<td>Processing continues.</td>
</tr>
</tbody>
</table>

When this DD statement is not supplied, the Merge Clone tool determines database access as described in "Conflict resolution" on page 232.

<table>
<thead>
<tr>
<th>IOH1711E</th>
<th>UNABLE TO OPEN DD IOHSHLVL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong></td>
<td>An error was encountered attempting to open DD IOHSHLVL.</td>
</tr>
<tr>
<td><strong>System action:</strong></td>
<td>Processing ends with a return code 12.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Check the job log for additional information, correct the JCL and rerun the job.</td>
</tr>
<tr>
<td><strong>Severity:</strong></td>
<td>12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IOH1712E</th>
<th>IOHPUNCH DATA SET MUST BE LRECL 80</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong></td>
<td>The data set defined by DD IOHPUNCH must be defined as LRECL 80.</td>
</tr>
<tr>
<td><strong>System action:</strong></td>
<td>Processing ends with a return code 12.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Correct the JCL/data set allocation, and rerun the job.</td>
</tr>
<tr>
<td><strong>Severity:</strong></td>
<td>12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IOH1719E</th>
<th>ERROR LOADING MODULE mod FOR IMS: imsid</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong></td>
<td>An error was encountered attempting to load module mod. This module is the Merge Clone tool’s MODBLKS extraction routine and is shipped as part of the base product.</td>
</tr>
<tr>
<td><strong>System action:</strong></td>
<td>Processing ends with a return code 12.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Ensure the product has been installed correctly and that this module is available to be loaded. Check the job log for additional information, correct the problem and rerun the job.</td>
</tr>
<tr>
<td><strong>Severity:</strong></td>
<td>12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IOH1720E</th>
<th>REQUIRED DDNAME ddn NOT PRESENT IN JCL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong></td>
<td>Each IMS system defined through IOHIMSID input must have an associated MODBLKS data set defined in the JCL. The DD name is created by appending the IMSID to the character string 'MBLK'. For example, IMS1 would require a DD name of MBLKIMS1 pointing to IMSI’s MODBLKS data set.</td>
</tr>
<tr>
<td><strong>System action:</strong></td>
<td>Processing ends with a return code 12.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Correct the JCL, and rerun the job.</td>
</tr>
<tr>
<td><strong>Severity:</strong></td>
<td>12</td>
</tr>
</tbody>
</table>
IOH1721E - ERROR OPENING DATA SET, DD NAME=ddn

Explanation: An error was encountered attempting to open data set ddn.

System action: Processing ends with a return code 12.

User response: Check the job log for additional information, correct the JCL and rerun the job.

Severity: 12

IOH1730E - SPECIFIED IMS NOT FOUND: imsid

Explanation: An input record in the IOHAFFIN data set contained an invalid IMS.

System action: Processing ends with a return code 12.

User response: Correct the job input, and rerun the job.

Severity: 12

IOH1731E - SYNTAX ERROR, COLUMN 5 MUST BE BLANK

Explanation: The previous IOHAFFIN input record did not follow correct record syntax. The IMSID must start in column 1, column 5 must contain a blank and the transaction name must start in column 6.

System action: Processing ends with a return code 12.

User response: Correct IOHAFFIN input data, and rerun the job.

Severity: 12

IOH1732E - TRANSACTION NAME MORE THAN EIGHT CHARACTERS

Explanation: The previous record contains an invalid transaction name. The name is greater than eight characters.

System action: Processing ends with a return code 12.

User response: Correct the IOHAFFIN input data, and rerun the job.

Severity: 12

IOH1733E - SYNTAX ERROR, TRAN NAME NOT PRESENT OR NOT STARTING IN COLUMN 6

Explanation: Either the transaction name is not supplied or it does not start in column 6. The IMSID must start in column 1, column 5 must contain a blank and the transaction name must start in column 6.

System action: Processing ends with a return code 12.

User response: Correct the IOHAFFIN input data, and rerun the job.

Severity: 12

IOH1734E - TRAN: tran NOT DEFINED IN ANY SYSTEM

Explanation: Transaction tran was specified in an IOHAFFIN input record, but is not present in any IMS system. In order to define the transaction with the requested routing, the transaction must first be present in an existing IMS.

System action: Processing ends with a return code 12.

User response: Either remove the transaction from the IOHAFFIN input data, or add the desired transaction to one (or more) of the IMS regions being merged.

Severity: 12

IOH1741E - DATA BASE NAME MORE THAN EIGHT CHARACTERS

Explanation: The previous record read from IOHSHLVL contained an invalid database name. It is more than eight characters long.

System action: Processing ends with a return code 12.

User response: Correct the IOHSHLVL input, and rerun the job.

Severity: 12

IOH1742E - DATA BASE NAME MISSING OR NOT STARTING IN COLUMN 1

Explanation: The previous record read from IOHSHLVL was incorrect. Either the database name was not provided or does not start in column 1.

System action: Processing ends with a return code 12.

User response: Correct the IOHSHLVL input and rerun the job.

Severity: 12

IOH1743E - DATA BASE: dbd NOT DEFINED TO ANY IMS

Explanation: The specified database is not defined in any of the IMS regions defined in the IOHIMSID input. In order to set the database access using the IOHSHLVL input, the database must first be defined to one of the IMS regions being merged.

System action: Processing ends with a return code 12.

User response: Either remove the database from the IOHSHLVL input data or add it to one (or more) of the IMS systems being merged.

Severity: 12
IOH1751E - JOB TERMINATING, UNABLE TO LOAD MODULE IOHCNTL0

Explanation: This module is part of the Merge Clone tool product. The module must be available for this job to process successfully.

System action: Processing ends with a return code 12.

User response: Check job log for additional information, correct the problem and rerun the job.

Severity: 12

IOH1752E - JOB TERMINATING, UNABLE TO LOAD MODULE IOHEDIT0

Explanation: This module is part of the Merge Clone tool product. The module must be available for this job to process successfully.

System action: Processing ends with a return code 12.

User response: Check job log for additional information, correct the problem and rerun the job.

Severity: 12

IOH1753E - JOB TERMINATING, UNABLE TO LOAD MODULE IOHPSBS0

Explanation: This module is part of the Merge Clone tool product. The module must be available for this job to process successfully.

System action: Processing ended with a return code 12.

User response: Check job log for additional information, correct the problem and rerun the job.

Severity: 12

IOH1754I - NO RECORDS IN TRANSACTION AFFINITY LIST

Explanation: There were no user-specified transaction routing requirements. Transaction routing will be determined by the Merge Clone tool, based upon the database access and the PSB PROCOPT values.

System action: Processing continues.

User response: None. This message is informational.

Severity: 0

IOH1755I - NO RECORDS IN DATA BASE SHARELVL LIST

Explanation: There were no input records supplied in the IOHSHLVL data set. The Merge Clone tool will determine database access as described in “Conflict resolution” on page 232.

System action: Processing continues.

User response: None. This message is informational.

Severity: 0

IOH1756E - JOB TERMINATING, UNABLE TO LOAD MODULE IOHPRT0

Explanation: This module is part of the Merge Clone tool product. The module must be available for this job to process successfully.

System action: Processing ends with a return code 12.

User response: Check the job log for additional information, correct the problem and rerun the job.

Severity: 12

IOH1800E - ERROR LOADING MODULE mod FROM DD ddn

Explanation: An error was encountered attempting to load a module from an IMS MODBLKS data set. The last four characters of the DD name are the IMS that is being processed. The last character of the module name is obtained from the SUFFIX parameter as supplied in the IOHIMSID input data.

System action: Processing ends with a return code 12.

User response: Verify that the correct IMS MODBLKS data set names are used and that the correct IMS gen suffix was specified in the IOHIMSID input data. Correct the problem, and rerun the job.

Severity: 12

IOH1801E - BLDL FAILED FOR DDNAME xxxxxxxx RC=nn REASON=rr

Explanation: An MVS BLDL macro was used to get module lengths for the IMS MODBLKS modules. the BLDL macro failed with the indicated return code and reason code.

System action: The function fails.

User response: Check the BLDL return code and reason code and verify that the named MODBLKS data set contains valid load modules.

Severity: 12

IOH1802E ERROR PROCESSING MODULE mmmmmmmmm FROM DDNAME dddddddd

Explanation: An MVS BLDL macro was used to get module lengths for the IMS MODBLKS modules. The BLDL macro failed with the indicated return code and reason code.

System action: The function fails.

User response: Check the BLDL return code and reason code and verify that the named MODBLKS data set contains valid load modules.

Severity: 12

Chapter 20. Runtime messages (IOH)  285
IOH1900I - STAGE1 GENERATION STARTED

Explanation: The Merge Clone tool has started generating the IMS stage 1 source.
System action: Processing continues.
User response: None. This message is informational.
Severity: 0

IOH1901I - ** TRANSACTION tran REQUIRES EDITING BEFORE RUNNING IMS GEN

Explanation: Transaction tran was defined on at least one IMS as using a Transaction Edit Routine so all systems will now use the Transaction Edit Routine.
See "Conflict resolution" on page 232 for a description of how conflicts are resolved.
System action: Processing continues and a return code of 8 is set. If a more severe error is encountered, then a higher return code might be set at when processing ends.
User response: When receiving this message you are required to edit your stage 1 source. The Merge Clone tool cannot determine the name of the Edit Routine you had on your Transaction so it fills in the stage 1 TRANSACT macro with 8 plus signs ("++++++++"). You will need to replace all the plus signs with name valid Transaction Edit Routine name.

If adding new Transaction Edit Routines or changing the sequence of the Edit Routine in the gen, you will need to run a minimum of a CTLBLK gen.
Severity: 8

IOH1902I - STAGE1 GENERATION COMPLETED

Explanation: The Merge Clone tool has completed generating the IMS stage 1 source.
System action: Processing continues.
User response: None. This message is informational.
Severity: 0

IOH1903I - ERROR ENCOUNTERED DURING STOW FOR member RETURN CODE mmmmm

Explanation: An error was encountered attempting to STOW the PDS member member. The return code from the STOW is indicated in mmmmm.
System action: Processing ends with a return code 12.
User response: Check the job log for additional messages, ensure that the IOHPUNCH is allocated as a PDS, correct the problem, and rerun the job.
Severity: 12

IOH1904I - MEMBER member HAS BEEN SAVED

Explanation: The Merge Clone tool has completed building the stage 1 for member member and written it to the IOHPUNCH.
System action: Processing continues.
User response: None. This message is informational.
Severity: 0

IOH2010W - ** DBD dbd IN PSB psb NOT FOUND, ALL RELATED TRANSACTIONS DEFINED LOCAL

Explanation: While performing routing analysis on PSB psb, the Merge Clone tool attempted to load DBD dbd. It was unable to load this DBD, so it could not complete its analysis. It therefore chose to make all transactions that use this PSB local in all IMS regions.
System action: Processing continues and return code 4 is set. If a more severe error is encountered, this job will end with a higher return code.
User response: If possible, make the DBD available to the IMS DD data set and rerun the job. Otherwise, review the IMS stage 1 and verify that the transactions using this PSB are routed properly.
Severity: 4

IOH2011W - ** PSB psb NOT FOUND, ALL RELATED TRANSACTIONS DEFINED LOCAL

Explanation: Unable to load PSB psb and could not perform routing analysis. Therefore, the Merge Clone process defaulted to make all transactions assigned to this PSB local in all IMS regions.
System action: Processing continues and return code 4 is set. If a more severe error is encountered, this job will end with a higher return code.
User response: If possible, make the PSB available to the IMS DD data set and rerun the job. Otherwise, review the IMS stage 1 and verify that the transactions using this PSB are routed properly.
Severity: 4

IOH2012W - ** DBD dbd REFERENCED BY PSB psb BUT NOT DEFINED IN ANY SYSTEM

Explanation: Database dbd was referenced by PSB psb, but it was not defined in any IMS region. The PSB is assumed to be NOTINIT and all transactions are made local in all IMS systems.
System action: Processing continues and return code 4 is set. If a more severe error is encountered, this job ends.
will end with a higher return code.

**User response:** Ensure the correct PSB is being used. Review the IMS stage 1 and verify the transactions are routed to the correct systems.

**Severity:** 4

---

**Explanation:** Merge Clone PROCOPT analysis could not find an IMS where the database access for all databases met the PROCOPT requirements of PSB *psb*. Therefore, the PSB is defined as local everywhere.

**System action:** Processing continues and return code is set to 4. If a more severe error is encountered the job might end with a higher return code.

**User response:** Review the routing for all transactions associated with the PSB.

**Severity:** 4

---

**Explanation:** A transaction was found that was defined to use PDIR *psb*, but *psb* was not defined as an APPLCTN on any IMS in the IMSplex. It is therefore assumed that the APPLCTN was defined as a remote APPLCTN and the Merge Clone tool will build a remote APPLCTN.

**System action:** Processing continues.

**User response:** None. This message is informational.

**Severity:** 0

---

**Explanation:** PSB *psb* was referenced in a transaction, but was not in the PDIR table. It will be added and treated as a local APPLCTN.

**System action:** Processing continues.

**User response:** Review the IMS stage 1 input and verify that the transactions for PSB *psb* are defined with proper routing information.

**Severity:** 0

---

**Explanation:** An error was encountered while attempting to analyze PSB *psb*. An address outside the range of the PSB was detected. This is typically the case when the module *psb* that was loaded from the IMS DD is a program rather than a PSB.

**System action:** Processing continues and return code is set to 4. If a more severe error is encountered the job might end with a higher return code.

**User response:** Ensure the member name *psb* that was loaded from the IMS DD data set is a valid PSB. If not, correct the PSB and rerun the job. If the member is a valid PSB, contact IBM Software Support for assistance.

**Severity:** 4

---

**Explanation:** An MVS LOAD for the named module failed. The LOAD return code and the abend code are shown in the message.

**System action:** The utility ends with return code 12.

**User response:** Verify that the load module named in the message is present in the STEPLIB of the batch utility job.

**Severity:** 12

---

**Explanation:** The block size of the IOHOPT data set was less than the required size. The IOHOPT data set should have a block size of at least 4096.

**System action:** The utility ends with return code 12.

**User response:** Reallocation the IOHOPT data set with RECFM=U and a block size of at least 4096.

**Severity:** 12

---

**Explanation:** An unknown keyword or syntax error was found processing the PARM field passed to the utility on the EXEC card.

**System action:** The utility ends with return code 12.

**User response:** Review the PARM= field specified on the JCL EXEC card. The PARM field may contain only IMSID=xxxx and the keyword LIST or UPDATE, separated by a comma.

**Severity:** 12

---

**Explanation:** An error occurred parsing the PARM field specified on the JCL EXEC card. The keyword and the reason for the error are shown in the message text. The possible keywords are IMSID, LIST, or UPDATE. The conditions that may occur are MISSING, INVALID, or NOT ALLOWED.
IOH2205E  •  IOH2242E

**System action:** The utility ends with return code 8.

**User response:** Review the PARM= field specified on the JCL EXEC card. The PARM field may contain only IMSID=xxxx and the keyword LIST or UPDATE, separated by a comma. Only the IMSID keyword can have an equal sign following the keyword.

**Severity:** 8

---

**IOH2205E**  
**keyword NOT INCLUDED IN PARM FIELD**

**Explanation:** Either the IMSID or the function (LIST or UPDATE) was not specified in the PARM field. The message indicates which type of keyword was not present.

**System action:** The utility ends with return code 12.

**User response:** Review the PARM= field specified on the JCL EXEC card. The PARM field must contain the IMSID=xxxx keyworkd and either the LIST or UPDATE keywords.

**Severity:** 12

---

**IOH2206E**  
**MVS NOTE FAILED STORING MEMBER member R15=rc R0=reason**

**Explanation:** An MVS NOTE macro failed with an unexpected return code.

**System action:** The utility ends with return code 12.

**User response:** Review the JESLOG for the batch utility for other messages related to this problem. The return code and reason code returned during the NOTE macro are shown in the message text.

**Severity:** 12

---

**IOH2207E**  
**IMSID OPTIONS NOT FOUND FOR IMS imsid**

**Explanation:** IMSID options member for the named IMSID was not found in the IOHOPT data set during a LIST request.

**System action:** The utility ends with return code 12.

**User response:** Ensure that the proper IMSID was specified in the PARM field of the batch utility, and that the appropriate IOHOPT data set name was specified.

**Severity:** 12

---

**IOH2208E**  
**UNABLE TO SAVE imsid OPTIONS-IOHOPT OUT OF DIRECTORY SPACE**

**Explanation:** The IOHOPT data set was out of directory space when the utility attempted to save the updated IMSID options member in the IOHOPT data set.

**System action:** The utility ends with return code 8.

**User response:** Review the statement preceding this error message and ensure that an equal sign was placed after the keyword.

**Severity:** 8

---

**IOH2209E**  
**STOW FAILED FOR imsid OPTIONS R15=rc R0=reason**

**Explanation:** An MVS STOW macro failed with an unexpected return code.

**System action:** The utility ends with return code 12.

**User response:** Review the JESLOG for the batch utility for other messages related to this problem. The return code and reason code returned during the STOW macro are shown in the message text.

**Severity:** 12

---

**IOH2210E**  
**ABEND OCCURRED WRITING imsid OPTIONS - ABEND code**

**Explanation:** An abend was intercepted while writing the updated IMSID options member to the IOHOPT data set.

**System action:** The utility ends with return code 12.

**User response:** Review the JESLOG for the batch utility for other messages related to this problem. The abend code that would have occurred is shown in the message text.

**Severity:** 12

---

**IOH2241E**  
**SYNTAX ERROR IN PRIOR STATEMENT - MISSING =**

**Explanation:** A syntax error occurred processing the SYSIN statements. A statement was found that did not include the equal sign (=).

**System action:** The utility ends with return code 8.

**User response:** Review the statement preceding this error message and ensure that an equal sign was placed after the keyword.

**Severity:** 8

---

**IOH2242E**  
**OPEN FAILED FOR DDNAME ddname RC=rc**

**Explanation:** An MVS OPEN for the ddname shown in the message failed. The open return code is shown in the message text.

**System action:** The utility ends with return code 8.

**User response:** Review the JESLOG for the batch utility for other messages related to this problem. The OPEN macro return code and the DDNAME being opened are shown in the message text.
Severity: 8

**IOH2243E**  CLOSE FAILED FOR DDNAME ddname

**Explanation:** An MVS CLOSE for the ddname shown in the message failed. The close return code is shown in the message text.

**System action:** The utility ends with return code 8.

**User response:** Review the JESLOG for the batch utility for other messages related to this problem. The CLOSE macro return code and the DDNAME being closed are shown in the message text.

**Severity:** 8

**IOH2244E**  PRIOR STATEMENT HAS AN INVALID KEYWORD

**Explanation:** The keyword specified on the prior statement is unknown.

**System action:** The utility ends with return code 8.

**User response:** Review the statement preceding this error message and ensure that the keyword specified is specified correctly.

**Severity:** 8

**IOH2245E**  VALUE SPECIFIED IN PRIOR STATEMENT EXCEEDS MAXIMUM LENGTH FOR THE KEYWORD

**Explanation:** The length of the value specified in the prior statement is longer than the maximum length allowed for this keyword.

**System action:** The utility ends with return code 8.

**User response:** Review the statement preceding this error message to ensure that the value specified for the keyword is correct.

**Severity:** 8

**IOH2246E**  PRIOR STATEMENT INCLUDES A COMMA BUT IS NOT ELIGIBLE FOR CONTINUATION

**Explanation:** A comma was encountered following the value specified for a keyword, but continuation statements are not permitted for this keyword.

**System action:** The utility ends with return code 8.

**User response:** Review the statement preceding this error message. Ensure that both the keyword and value are specified on the same line. Also ensure that the first non-blank character following the value is not a comma.

**Severity:** 8

**IOH2247E**  ERROR REPOSITIONING FOR NEXT KEYWORD VALUE

**Explanation:** An unexpected error occurred parsing a continued statement.

**System action:** The utility abends with abend code U4081.

**User response:** Contact the IBM Software Support for assistance.

**Severity:** 8

**IOH2248E**  TOO MANY SOURCE DATA SETS WERE SPECIFIED

**Explanation:** The number of source data set names specified on the preceding statement exceeds the maximum allowed for this keyword.

**System action:** The utility ends with return code 8.

**User response:** Review the statement preceding this error message. Ensure that no more than 30 IMS sysgen source data set names or 10 security source data set names were specified.

**Severity:** 8

**IOH2249E**  INVALID VALUE SPECIFIED FOR OLC - MUST BE LOCAL OR GLOBAL

**Explanation:** An invalid value was specified on the OLC= statement.

**System action:** The utility ends with return code 8.

**User response:** Review the statement preceding this error message. Ensure that the value specified for the OLC = keyword is either LOICAL or GLOBAL.

**Severity:** 8

**IOH2250E**  INVALID VALUE SPECIFIED FOR DRD - MUST BE ENABLED OR DISABLED

**Explanation:** An invalid value was specified for the option DRD.

**System action:** The statement is ignored.

**User response:** Correct the value specified for DRD. The only valid values are ENABLED and DISABLED.

**Severity:** 12

**IOH2251E**  INVALID VALUE SPECIFIED FOR REPOSITORY - MUST BE ENABLED OR DISABLED

**Explanation:** An invalid value was specified for the option REPOSITORY.

**System action:** The statement is ignored.
User response: Correct the value specified for REPOSITORY. The only valid values are ENABLED and DISABLED.

Severity: 12

IOH2300E  ERROR PROCESSING TRAN EDIT ROUTINES - reason

Explanation: An error occurred while attempting to find or process the IMS transaction edit routine table during the transaction edit routine. The reason text in the message assists IBM Software Support in identifying the source of the error.

System action: The requested action fails.

User response: Contact IBM Software Support for assistance.

Severity: N/A

IOH3001I  message_text

Explanation: This message contains an APPC error message retrieved from the APPC error extract service. IMS HP Sysgen Tools uses this APPC message to show the information retrieved from APPC.

An APPC call returned an unexpected return code and provided the text in this error message for documentation of the problem.

System action: None.

User response: Use the APPC error information in this message in conjunction with the information in message IOH3002E to determine the reason for the APPC call failure.

Severity: N/A

IOH3002E  APPC CALL TO module FAILED RC=rc

Explanation: The call for APPC services to the named module failed. The module name might be ATBALC2 (for Allocate), ATBSEND (for Send), ATBCRW (for Receive), or ATBEEES3 (for Error Extract).

System action: The requested function fails.

User response: Determine whether the failure was caused by an environmental problem, such as an APPC or VTAM problem, or by an abend in HP Sysgen code running in the APPC address space by reviewing the MVS SYSLOG on the systems where both the TSO user was logged on and the system where IMS runs. For other problems, contact IBM Software Support for assistance.

Severity: N/A

IOH3045E  UNKNOWN ISPF MESSAGE RECEIVED FROM APPC - msgid

Explanation: An ISPF message identifier was received from IMS HP Sysgen Tools while it was running in an APPC initiator, but the message ID was not a known message.

System action: The requested function fails.

User response: Contact IBM Software Support for assistance.

Severity: N/A

IOH3052E  ERROR RETRIEVING IMS insid OPTIONS reason

Explanation: An error occurred attempting to read and interpret IMSID options for the named IMSID. The reason text describes the reason for the failure.

System action: The requested function fails.

User response: Ensure that the named IMSID has an options module present on the MVS system where the TSO user is logged on, and that the options module is valid. This error could also occur if a group is defined with a name that begins with IOH@.

Severity: N/A

IOH3053E  ERROR RETRIEVING IMS OPTIONS FOR PLEX MEMBER insid-reason

Explanation: While attempting to install a resource update list, the IMSIDs of all IMS subsystems in the IMSplex are retrieved from the OLCSTAT data set. While attempting to read and interpret the IMSID options for this IMS system, an error occurred.

System action: The requested function fails.

User response: Ensure that the named IMSID is defined to IMS HP Sysgen Tools on the MVS system where the TSO user is logged on, and that the options module for that IMS subsystem is valid. This error may occur for an IMSID that was not the target of the install request, but was required because it is in the same IMSplex as the target of the install.

Severity: N/A

IOH3054E  EXPECTED CONFIG DATA NOT RECEIVED FOR GLOBAL ONLINE CHANGE TARGET

Explanation: An attempt to obtain a list of the IMSIDs defined in the OLCSTAT data set for a Global Online Change enabled target IMS subsystem did not return the expected information from the IMS HP Sysgen Tools APPC transaction program.

System action: The requested function fails.
IOH3055E  UNEXPECTED CONFIG DATA NOT RECEIVED FOR LOCAL ONLINE CHANGE TARGET

Explanation: Global online change configuration information was received for an IMS subsystem that was identified as a local online change enabled target IMS subsystem.

System action: The requested function fails.

User response: Contact IBM Software Support for assistance.

Severity: N/A

IOH3056E  INSTALL SYNC POINT DATA NOT RECEIVED - code

Explanation: During an install request, expected sync point confirmation was not received.

System action: The requested function fails.

User response: Review the MVS SYSLOG where the target IMS subsystem(s) run to determine whether there are any IMS HP Sysgen Tools messages related to an APPC processing error. Such messages would begin with IOH.

Severity: N/A

IOH3061E  INVALID MESSAGE DATA RECEIVED FROM APPC ADDRESS SPACE

Explanation: An IMS HP Sysgen Tools APPC transaction program returned a message to the TSO user, but the message length was invalid.

System action: The requested function fails.

User response: Review the MVS SYSLOG where the target IMS subsystem(s) run to determine whether any IMS HP Sysgen Tools messages were issued at the time of the failure. Such messages would begin with IOH. Contact IBM Software Support for assistance.

Severity: N/A

IOH3135E  FASTGEN PROCESS TERMINATED DUE TO IMS SYSGEN ERROR(S)

Explanation: The HP Sysgen Fastgen process failed.

System action: None.

User response: Determine the reason for the failure by reviewing the sysgen output listings for other IOH prefixed messages.

Severity: N/A

IOH3136E  FASTGEN PROCESS TERMINATED DUE TO MODULE LINK ERROR(S)

Explanation: The HP Sysgen Fastgen process failed.

System action: None.

User response: Determine the reason for the failure by reviewing the sysgen output listings for other IOH prefixed messages.

Severity: N/A

IOH3138E  FASTGEN PROCESS TERMINATED DUE TO IMS SECURITY ERROR(S)

Explanation: The HP Sysgen Fastgen process failed.

System action: None.

User response: Determine the reason for the failure by reviewing the sysgen output listings for other IOH prefixed messages.

Severity: N/A

IOH3201E  LOAD FAILED FOR modname RC=rc ABCODE=code

Explanation: An MVS LOAD macro failed with the indicated return code and abend code for the named load module.

System action: The job fails.

User response: Review the abend code and module name to determine the cause of the load failure. Contact IBM Software Support for assistance.

Severity: 8

IOH3202E  keyword WAS ALREADY SPECIFIED ON A PRIOR STATEMENT

Explanation: The indicated keyword statement was specified more than once in the SYSIN data stream. This keyword can only be specified one time in the SYSIN data.

System action: The job fails.

User response: Remove the additional occurrences of the named keyword.

Severity: 8

IOH3203E  UNKNOWN KEYWORD SPECIFIED

Explanation: The keyword value specified on the prior statement was not a valid keyword.

System action: The job fails.

User response: Review the SYSIN statement prior to this error message for an error. Ensure that the keyword value is spelled correctly.

Severity: 8

User response: Contact IBM Software Support for assistance.

Severity: N/A
IOH3204E  KEYWORD VALUE FOR keyword condition
Explanation:  The value specified for the named keyword was either missing or invalid.
System action:  The job fails.
User response:  If the value was missing, be sure to specify a value for the keyword. If the value was invalid, ensure that the value was one of the allowable values for the keyword or that the value does not exceed four characters for an IMSID or eight characters for a resource update list name.
Severity:  8

IOH3205E  NUMBER OF SELMBR NAMES EXCEEDS MAXIMUM (512)
Explanation:  The number of SELMBR values specified in the job exceeded the maximum of 512 names.
System action:  The job fails.
User response:  Reduce the number of SELMBR values specified so that the number is less than 512. You can break the members into multiple jobs, or use generic member names to reduce the number of names specified in the job.
Severity:  8

IOH3206E  MISSING REQUIRED STATEMENT (LIST= IMSID= SOURCE= or CTLBLKS=)
Explanation:  The IOHCLIST control cards did not include one of the required keyword statements.
System action:  The job fails.
User response:  Ensure that the keyword statements include all the required statements, and that valid values were specified for these keywords.
Severity:  8

IOH3207E  UNBALANCED OR INVALID PARENTHESIS SPECIFIED
Explanation:  Parentheses were used improperly in the prior statement. Either there was a close parenthesis before an open parenthesis, or there were multiple open parentheses.
System action:  The job fails.
User response:  Review the prior control card to ensure that parentheses were used properly.
Severity:  8

IOH3208E  UNSUPPORTED IMS RELEASE
Explanation:  The release of IMS currently running for the IMS subsystem identified by the IMSID= statement is not supported by this level of IMS HP Sysgen Tools.
System action:  The job fails.
User response:  Contact IBM Software Support for assistance.
Severity:  8

IOH3209E  IOHCLNS Reported a cleanup error
Explanation:  The IMS HP Sysgen Tools cleanup processor encountered an error while closing files and freeing storage.
System action:  The job fails.
User response:  Review the MVS SYSLOG for additional IOH error messages that define the error condition. Contact IBM Software Support for assistance.
Severity:  8

IOH3210E  MISSING KEYWORD VALUE FOR SRCHLST
Explanation:  No value was specified for keyword SRCHLST.
System action:  Processing stops.
User response:  Specify one or multiple valid value for the SRCHLST keyword.
Severity:  8

IOH3211E  TOO MANY KEYWORD VALUES SPECIFIED FOR SRCHLST - xxxxxxxx AND SUCCEEDING VALUES IGNORED
Explanation:  The maximum number of values for keyword SRCHLST was exceeded. xxxxxxxx indicates the value for keyword SRCHLST at the time when the maximum number was exceeded.
The maximum number of values allowed for keyword SRCHLST is 2560.
System action:  Processing continues for keyword values up to 2560 values.
Keyword values 2561 and greater are ignored and not processed.
User response:  Ensure that the number of values specified for keyword SRCHLST is 2560 values or less.
Run additional jobs to accommodate 2561 or greater values.
Severity:  4
<table>
<thead>
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<tbody>
<tr>
<td>IOH3212E</td>
<td>MISSING KEYWORD IMSID= OR CTLBLKS= OR SRCHLST= IN SYSIN</td>
<td>Either IMSID=, CTLBLKS=, or SRCHLST= keyword was not specified, or was specified incorrectly, in the IOHBRVRS PARM field.</td>
<td>The job step ends.</td>
<td>Review the IOHBRVRS PARM field to ensure that all of the IMSID=, CTLBLKS=, and SRCHLST= keywords are included. Check for any error messages that may have occurred while parsing the PARM field.</td>
<td>8</td>
</tr>
<tr>
<td>IOH3214E</td>
<td>NO MEMBERS WERE SELECTED BY THE SELMBR VALUE(S) SPECIFIED</td>
<td>There were no members of the IOHGEN data set selected for the SELMBR name(s) specified in the IOHCLIST control cards.</td>
<td>The job fails.</td>
<td>Correct the SELMBR specifications specified in the job. Also, ensure that the members that you intended to select are present in the first and only data set in the IOHGEN DD. Concatenated PDSs are not supported.</td>
<td>8</td>
</tr>
<tr>
<td>IOH3215E</td>
<td>UPDATE LIST MEMBER name ALREADY EXISTS BUT REPLACE NOT SPECIFIED</td>
<td>The specified resource update list name already exists in the IOHPDS data set. REPLACE was not specified.</td>
<td>The job fails.</td>
<td>Either change the LIST= keyword to specify a different resource update list member name, or include the REPLACE keyword on the LIST= statement.</td>
<td>8</td>
</tr>
<tr>
<td>IOH3216E</td>
<td>INVALID ERROR MESSAGE RETURNED FROM APPC PROCESSING</td>
<td>The length of an error message returned from IMS HP Sysgen Tools APPC processing was not valid.</td>
<td>The job fails.</td>
<td>Contact IBM Software Support for assistance.</td>
<td>8</td>
</tr>
<tr>
<td>IOH3225E</td>
<td>AN INTERNAL ERROR OCCURRED WRITING IZTPUNCH</td>
<td>An internal error occurred determining the current output block for the IZTPUNCH data set.</td>
<td>The job step ends.</td>
<td>Contact IBM Software Support for assistance.</td>
<td>8</td>
</tr>
<tr>
<td>IOH3226E</td>
<td>MISSING PARM KEYWORD (IMSID= OR CTLBLKS=)</td>
<td>Either IMSID= or CTLBLKS= was not specified, or was specified incorrectly, in the IOHBRVRS PARM field.</td>
<td>The job step ends.</td>
<td>Review the IOHBRVRS PARM field to ensure that both the IMSID= and CTLBLKS= keywords are included. Check for any error messages that may have occurred while parsing the PARM field.</td>
<td>8</td>
</tr>
<tr>
<td>IOH3227E</td>
<td>IOHPUNCH DD HAS AN INVALID BLKSIZE (NOT A MULTIPLE OF 80)</td>
<td>The DCB attributes for the IOHPUNCH DD are invalid.</td>
<td>The job step ends.</td>
<td>Verify that the IOHPUNCH DD is allocated properly. It must have LRECL=80, BLKSIZE which is a multiple of 80, and RECFM=FB.</td>
<td>8</td>
</tr>
<tr>
<td>IOH3241I</td>
<td>OPTIONS IN USE option</td>
<td>This message describes the options selected for this execution of the IOHCLIST utility. The options in use are based on the control cards read from the SYSIN DD.</td>
<td>None.</td>
<td>None. This message is informational.</td>
<td>N/A</td>
</tr>
<tr>
<td>IOH3243I</td>
<td>NUMBER OF DEFINED resources number</td>
<td>This message describes the IMS version and number of each resource type defined in the target subsystem.</td>
<td>None.</td>
<td>None. This message is informational.</td>
<td>N/A</td>
</tr>
</tbody>
</table>
IOH3244I  IOHGEN MEMBERS SELECTED:
Explanation: This message describes the IMS sysgen source members of the IOHGEN DD which were selected for processing based on control card input provided by the user.
System action: None.
User response: None. This message is informational.
Severity: N/A

IOH3301E  INVALID ENTRY VECTOR DETECTED IN IOHCLST2
Explanation: The entry vector used to determine the function to be performed by module IOHCLST2 was not valid.
System action: The job fails.
User response: Contact IBM Software Support for assistance.
Severity: 8

IOH3302E  MVS BLDL DDNAME IOHPDS FAILED RC=rc REASON CODE reason
Explanation: An MVS BLDL macro returned an unexpected return code and reason code, as indicated in the message text.
System action: The job fails.
User response: Review the MVS SYSLOG for any additional error messages that may be related to this problem. Contact IBM Software Support for assistance.
Severity: 8

IOH3303E  MVS STOW DDNAME IOHPDS FAILED RC=rc REASON CODE reason
Explanation: An MVS STOW macro returned an unexpected return code and reason code, as indicated in the message text.
System action: The job fails.
User response: Review the MVS SYSLOG for any additional error messages that may be related to this problem. Contact IBM Software Support for assistance.
Severity: 8

IOH3304E  IOHPDS DIRECTORY FULL - UNABLE TO SAVE UPDATE LIST
Explanation: There was not sufficient space in the PDS directory to store the resource update list.
System action: The job fails.
User response: Delete unneeded members from the IOHPDS data set, or reallocate the data set with additional directory blocks.
Severity: 8

IOH3307W  NO UPDATE LIST ENTRIES ARE REQUIRED
Explanation: The comparison of sysgen source and IMS system control blocks resulted in no required changes to IMS control blocks.
System action: The job completes, but no updates are made to the IOHPDS data set.
User response: None.
Severity: 4

IOH3308E  MVS ENQUEUE FOR IOHPDS FAILED RC=rc
Explanation: An MVS ENQ macro returned with an unexpected return code, as indicated in the message. The QNAME used in the ENQ was IOHPDS01, and the RNAME was the data set name of the IOHPDS data set.
System action: The job fails.
User response: Review the MVS SYSLOG for additional messages that may be related to this problem. Contact IBM Software Support for assistance.
Severity: 8

IOH3309E  IOHPDS DATA SET IN USE
Explanation: The IOHPDS data set was being read or written when the job attempted to write the resource update list.
System action: The job fails.
User response: Retry the job when the IOHPDS data set is no longer being written.
Severity: 8

IOH3310E  NUMBER OF UPDATE LIST ENTRIES EXCEEDS MAX OF 32767
Explanation: The maximum number of entries allowed for a single resource update list has been exceeded.
System action: The job fails.
User response: Reduce the number of entries that are created by the job. If this is not a practical solution, contact IBM Software Support for assistance.
Severity: 8
IOH3311E  ERROR IN ACB RELOAD/AGN ENTRY

Explanation: An internal error occurred processing $IOHGEN macro requests.
System action: The job fails.
User response: Retain the dump that accompanies this error, and contact IBM Software Support for assistance.
Severity: 8

IOH3316E  ERROR CONDITION x OCCURRED WRITING UPDATE LIST MEMBER name

Explanation: An internal error occurred while writing the resource update list to the IOHPDS data set.
System action: The job fails.
User response: Contact IBM Software Support for assistance.
Severity: 8

IOH3317E  AN MVS NOTE FAILED FOR MEMBER name RC=rc

Explanation: An MVS NOTE macro returned an unexpected return code and reason code, as indicated in the message text, while processing the resource update list member of the IOHPDS data set.
System action: The job fails.
User response: Review the MVS SYSLOG for any additional error messages that may be related to this problem. Contact IBM Software Support for assistance.
Severity: 8

IOH3341I  UPDATE LIST ENTRY CREATED TO CHANGE type name FOR THE FOLLOWING PARAMETERS:

Explanation: This message shows the resource type and name that were identified as inconsistent in definition attributes between IMS sysgen source macros and control blocks in the MODBLKS data set or the control blocks in use by the target IMS subsystem. The named resource was present in the sysgen source, but not in the control blocks.
System action: An entry in the generated resource update list is created.
User response: None. This message is informational.
Severity: N/A

IOH3345I  UPDATE LIST ENTRY CREATED TO UPDATE AGN agn-name TO action type-name

Explanation: This message shows information about an AGN update that was requested through a $IOHGEN statement included in the IMS sysgen source. The value specified in the message text includes the AGN name to be updated, the action (CONNECT or DISCONNECT) to be performed, the resource type (PSB, TRAN, or LTERM), and the resource name.
System action: An entry in the generated resource update list is created.
User response: None. This message is informational.
Severity: N/A
IOH4001E  message_text

Explanation: This message contains an APPC error message retrieved from the APPC error extract service. IMS HP Sysgen Tools uses this APPC message to show the information retrieved from APPC.

An APPC call returned an unexpected return code

System action: None.

User response: Use the APPC error information in this message in conjunction with the information in message IOH4024E to determine the reason for the APPC call failure.

Severity: N/A

IOH4020E  GETMAIN FAILED IN IOH APPC PROGRAM IOHZRCB

Explanation: A GETMAIN request failed.

System action: The function fails.

User response: For errors related to the failure in an APPC/MVS initiator, review the MVS SYSLOG on the system where IMS is running. Review the amount of storage above the 16 megabyte line that is available to the APPC task.

Severity: N/A

IOH4021E  APPC request-1 REQUEST SEQUENCE ERROR-LAST REQUEST request-2

Explanation: There was an unexpected request from an IMS HP Sysgen Tools module for an APPC/MVS action. The requested action was inconsistent with the state of the APPC/MVS conversation.

System action: The function fails.

User response: For errors related to an APPC error in an APPC/MVS initiator, review the MVS SYSLOG on the system where IMS is running. There may be messages preceding this message that indicate a reason for the sequence error.

Severity: N/A

IOH4022E  IOHZAPPC RECEIVED AN INVALID APPC REQUEST TYPE

Explanation: There was an unknown request type received from an IMS HP Sysgen Tools module for an APPC/MVS action.

System action: The function fails.

User response: Review the MVS SYSLOG on the system where IMS is running for errors related to an APPC error in an APPC/MVS initiator. Ensure that the SVC dump that was produced following this error is retained, and contact IBM Software Support for additional assistance.

Severity: N/A

IOH4023E  LOAD FAILED FOR MODULE module ABEND=aaa RC=nn

Explanation: A message bound for an APPC transaction program exceeded the maximum expected length (100K).

System action: The request fails. An abend dump is produced for the APPC transaction program.

User response: An MVS LOAD for the stated APPC module failed. Ensure that APPC callable service modules are available through the MVS link list, or add the APPC callable services library to the STEPLIB concatenation of the IOHTPADd JCL (after EXEC PGM=IOHZMAIN). Contact IBM Software Support for assistance. Retain the APPC transaction program dump written to the dump data set specified in the IOHTPADd job in the SIOHAMP data set.

Severity: U4001 abend occurs in the address space of the APPC transaction program.

IOH4024E  APPC CALL TO module FAILED RC=nn

Explanation: The call for APPC services to the named module failed. The module name might be ATBALC2 (for Allocate), ATBSNED (for Send), ATBRCVW (for Receive), or ATBEES3 (for Error Extract).

System action: The requested function fails.

User response: Review the MVS SYSLOG on the systems where IMS runs to determine whether the failure was caused by an environmental problem, such as an APPC or VTAM problem, or by a problem with HP Sysgen code running in the APPC transaction program address space. Contact IBM Software Support for assistance.

Severity: U4001 abend occurs in the address space of the APPC transaction program.

IOH4025E  APPC request RECEIVE RETURNED AN UNEXPECTED DATA RECEIVED VALUE nn

Explanation: An unexpected value was returned by APPC for the value of the DATA RECEIVED parameter. The APPC function requested is shown in the message text.

System action: The requested function fails.

User response: Contact IBM Software Support for assistance.

Severity: N/A
IOH4100E  AN ERROR OCCURRED CHECKING AN UPDATE LIST AN UNKNOWN RESOURCE TYPE WAS ENCOUNTED - type

Explanation: The header of a resource update list element did not contain a valid resource type indicator.

System action: The requested function fails.

User response: Retain a copy of the resource update list being processed for problem determination. Contact IBM Software Support for assistance.

Severity: 8

IOH4101E  AN ERROR OCCURRED CHECKING AN UPDATE LIST AN UNKNOWN FUNCTION WAS ENCOUNTED - type

Explanation: The header of a resource update list element did not contain a valid function indicator.

System action: The requested function fails.

User response: Retain a copy of the resource update list being processed for problem determination. Contact IBM Software Support for assistance.

Severity: 8

IOH4102E  TRAN transcode REQUESTS EDIT ROUTINE NAME editname BUT THAT NAME IS NOT DEFINED

Explanation: The edit routine name specified for this transaction was not already present in this IMS subsystem. Transaction edit routines cannot be dynamically added; they must already exist in the target IMS subsystem.

System action: The requested function fails. Resource checking is stopped following this error condition.

User response: If the transaction definition in the resource update list specifies a transaction edit routine not defined in this IMS control region, change the edit routine name to a name already present in this IMS system. Otherwise, contact IBM Software Support for assistance.

Severity: 8

IOH4103E  MULTIPLE RESOURCE UPDATES FOR type name PRESENT IN THIS UPDATE LIST

Explanation: There was more than one resource update list entry for a single resource. There can be only one resource update list entry for a specific resource.

System action: The requested function fails. Resource checking is stopped following this error condition.

User response: Remove all but one occurrence of the entries that duplicate add, delete, or update the resource type and name indicated in the message.

Severity: N/A

IOH4104E  ADD FOR type name FAILED BECAUSE IT IS ALREADY DEFINED

Explanation: A resource update list entry requested that a resource that was already defined be added.

System action: The resource list check continues.

User response: Change the resource list check continues.

Severity: N/A

IOH4105E  DELETE FOR type name FAILED BECAUSE IT IS NOT DEFINED

Explanation: A resource update list entry requested that a resource that does not exist be deleted.

System action: The resource list check continues.

User response: Change the resource update list entry so that it does not attempt to delete an undefined resource.

Severity: N/A

IOH4106E  UPDATE FOR type name FAILED BECAUSE IT IS NOT DEFINED

Explanation: A resource update list entry requested that a resource does not exist be deleted.

System action: The resource list check continues.

User response: Change the resource update list entry so that it does not attempt to update an undefined resource.

Severity: N/A

IOH4107E  type NAME name IS INVALID. FIRST CHAR MUST BE ALPHA, OTHERS ALPHANUMERIC.

Explanation: A resource update list entry requested that a resource be added, but the specified name is invalid.

System action: The resource list check continues.

User response: Change the resource update list entry to have a valid name for the resource being added.

Severity: N/A
IOH4108E  type name name IS INVALID. NAME IS RESERVED.

Explanation: A resource update list entry requested that a resource be added, but the specified name is a reserved name.

System action: The resource list check continues.

User response: Change the resource update list entry to have a valid name for the resource.

Severity: N/A

IOH4109E  type name name HAS AN INVALID PSB NAME psbname

Explanation: A resource update list entry specified an undefined or invalid PSB name to be associated with the transaction or route code.

System action: The resource list check continues.

User response: Change the resource update list entry to have a valid PSB name for the resource or route code.

Severity: N/A

IOH4110E  action FOR PROGRAM name FAILED-MUST ALSO DELETE type value

Explanation: A resource update list entry requesting a delete or rename of program name did not also delete or change all transactions and route codes that were associated with the program. Transactions and route codes defined to IMS must be associated with a defined PSB name.

Where:
- action is RENAME or DELETE.
- name is the PSB name.
- type is TRANSACT or RCODE.
- value is the transaction or return code.

System action: The resource list check continues.

User response: When deleting a program definition, all transactions and route codes must also be deleted or changed to be associated with some other PSB.

Severity: N/A

IOH4111E  RCODE name REQUIRES THAT PSB psbname HAVE FPATH=YES

Explanation: The named route code was associated with a PSB that did not have FPATH=YES specified.

System action: The verify or install request fails.

User response: Ensure that route codes are always associated with PSB names that have FPATH=YES specified.

Severity: N/A

IOH4112E  type name OPTION opt1 CONFLICTS WITH OPTION opt2

Explanation: Incompatible options were requested. Note that one of the specified options could be a PSB option (such as a schedule type SERIAL), and the other option could be a transaction option (such as MAXRGN).

System action: The resource list check continues.

User response: Review the options specified for the named resource. The two options specified in the message are incompatible. Make changes as required for a valid definition.

Severity: N/A

IOH4113E  type name OPTION opt1 IS REQUIRED FOR OPTION opt2

Explanation: Incompatible options were requested. Note that one of the specified options could be a PSB option (such as a schedule type SERIAL), and the other option could be a transaction option (such as MAXRGN).

System action: The resource list check continues.

User response: Review the options specified for the named resource. Ensure that the first option is specified properly, or change the second option to make it compatible with the first.

Severity: N/A

IOH4114E  type name REQUIRES FPATH WHICH IS NOT ACTIVE IN THE TARGET IMS

Explanation: A resource option specified requires that Fast Path be present in the IMS control region. Fast Path is not present in the target IMS environment.

System action: The resource list check continues.

User response: Remove the requirement for Fast Path from the named resource definition.

Severity: N/A

IOH4115E  type name CONTAINS AN INVALID VALUE FOR option

Explanation: The resource update list entry contained an invalid value for the option specified.

System action: The resource list check continues.

User response: Review the resource update list entry for the named resource, and correct the value of the named option.

Severity: N/A
IOH4116E  type name OPTION option VALUE value IS NOT SUPPORTED IN THE TARGET IMS

Explanation: The resource update list entry contained an invalid value for the option specified.
System action: The resource list check continues.
User response: Review the resource update list entry for the named resource, and change the value of the named option to a value that is supported in the appropriate IMS environment (and release).
Severity: N/A

IOH4117E  TRANSACT name CONTAINS SYSID VALUE(S) BUT MSC IS NOT SUPPORTED IN THE TARGET IMS

Explanation: The resource update list entry contained values for the remote and/or local SYSID attributes. The target IMS environment does not contain support for MSC.
System action: The resource list check continues.
User response: Review the resource update list entry for the named resource, and remove the SYSID values from the resource options.
Severity: N/A

IOH4118E  TRANSACT name EXCEEDS THE MAXIMUM ALLOWED SYSID VALUE FOR THIS IMS

Explanation: The resource update list entry contained values for the remote and/or local SYSID attributes that were invalid.
System action: The resource list check continues.
User response: Review the resource update list entry for the named resource, and change the SYSID values to values that are compatible with the target IMS environment.
Severity: N/A

IOH4119E  TRANSACT name option IS NOT DEFINED AS AN APPROPRIATE LOCAL OR REMOTE SYSID

Explanation: The resource update list entry contained values for the remote and/or local SYSID attributes that were invalid.
System action: The resource list check continues.
User response: Review the resource update list entry for the named resource, and change the SYSID values to values that are compatible with the target IMS environment.
Severity: N/A

IOH4120E  TRANSACT name CLASS EXCEEDS THE MAXIMUM CLASS FOR THIS IMS

Explanation: The resource update list entry contained an invalid value for the CLASS option. The class number must not exceed the maximum number of classes supported by this IMS subsystem.
System action: The resource list check continues.
User response: Review the resource update list entry for the named resource, and change the CLASS values to values that are compatible with the target IMS environment.
Severity: N/A

IOH4121E  TRANSACT name REQUIRES CONVERSATIONAL PROCESSING BUT THIS IMS WAS NOT GENNED FOR CONVERSATIONAL TRANS

Explanation: The resource update list entry contained an invalid value for the SPA size option. The target IMS does not contain support for conversational transactions.
System action: The resource list check continues.
User response: Review the resource update list entry for the named resource, and change the SPA value to blank. Conversational transactions are not supported in the target IMS environment.
Severity: N/A

IOH4122E  TRANSACT NAME trancode DUPLICATES AN EXISTING LTERM OR LINK NAME

Explanation: A transaction name to be added already exists in the target IMS subsystem as an LTERM name.
System action: The verify or install request fails.
User response: Ensure that transaction names to be added to the IMS system definition do not duplicate LTERM names that are included in the IMS sysgen or that are created dynamically by ETO when a user logs on.
Severity: N/A

IOH4123E  resource-type name CANNOT BE DELETED BECAUSE IT IS ACTIVE

Explanation: An attempt was made to delete a resource, but the resource was active.
System action: The verify or install request fails.
User response: Ensure that resources that are being deleted are not active.
Severity: N/A

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IOH4124E  DATABASE dbname CANNOT BE DELETED BECAUSE IT HAS NOT BEEN /DBR'D

Explanation: IMS HP Sysgen Tools will not delete a database unless the database has already been taken offline by using a /DBR command.

System action: The verify or install request fails.

User response: When you delete a database definition, ensure that the DB has been the object of an IMS /DBR command before installing the resource update list.

Severity: N/A

IOH4125E  TRANSACT trancode CANNOT BE DELETED BECAUSE IT HAS MESSAGES QUEUED

Explanation: A resource update list that is being verified or installed included a transaction delete, but the transaction has messages queued and waiting to process. HP Sysgen cannot delete a transaction that has messages queued.

System action: The verify or install request fails.

User response: Ensure that no messages are queued for transaction codes that are to be deleted in a resource update list.

Severity: N/A

IOH4126E  FPATH EXCLUSIVE TRAN trancode DOES NOT HAVE A MATCHING ROUTE CODE DEFINED

Explanation: A fast path exclusive transaction code is required to have a matching route code definition. The named fast path exclusive transaction does not have a matching route code defined.

System action: The verify or install request fails.

User response: Ensure that the named transaction code has a fast path route code with the same name defined, or change the named transaction so that it is not a fast path exclusive transaction.

Severity: N/A

IOH4127E  FASTPATH EXCLUSIVE PROGRAM name HAS NON-FASTPATH TRANSACTION trancode

Explanation: A fast path exclusive application program cannot have a non-fast path transaction associated with it.

System action: The verify or install request fails.

User response: Verify that the named program should be a fast path exclusive program, or that the named transaction code should be non-fast path.

Severity: N/A

IOH4128E  INVALID COMMAND ENCLOSED-MUST BEGIN WITH A SLASH

Explanation: The first character of the IMS command specified in an update list entry did not begin with a slash (/).

System action: The verification or installation of the resource update list fails.

User response: Correct the IMS command specified in the resource update list to ensure that it is a type one command and that it begins with a slash (/).

Severity: N/A

IOH4129E  IMS TRAN COMMAND SECURITY IS NOT ACTIVE-TCOMMAND CHANGES INVALID

Explanation: The target IMS subsystem does not have transaction command security active. TCOMMAND changes cannot be made when transaction command security is not active.

System action: The verification or installation of the resource update list fails.

User response: TCOMMAND changes are not valid for the specified IMS subsystem. Remove the TCOMMAND update list entries or change the IMS subsystem to a subsystem name that supports the TCOMMAND function.

Severity: N/A

IOH4130E  RELOAD FOR type name FAILED reason

Explanation: The PSB or DBD name that was requested for a reload was not successfully reloaded. The reason in the message text indicates why the reload attempt failed: Either the PSB or DBD is not defined in the target IMS system, or the PSB's option specification is not supported for the Process option or release of IMS.

System action: The verification or installation of the resource update list fails.

User response: If the PSB or DBD is not defined, verify that the correct resource name and type were specified. If the option of the PSB is not supported, review the Process and PSB's option specifications, and the release of the target IMS system, and correct the error.

Severity: N/A
IOH4131E RELOAD ENTRY CONTAINS INVALID RESOURCE TYPE - type

Explanation: An invalid value was found for the resource type, as shown in the message text. Only PSB and DBD are permitted.

System action: The verification or installation of the resource update list fails.

User response: Change the resource type in the resource update list entry to be either PSB or DBD.

Severity: N/A

IOH4132E COMMAND ENTRY CONTAINS INVALID SEQUENCE - sequence

Explanation: The sequence field for the IMS command contains an invalid value. The only valid values are BEFORE and AFTER.

System action: The verification or installation of the resource update list fails.

User response: Change the sequence field specified on the command entry to either BEFORE or AFTER. The value specified is not a valid value.

Severity: N/A

IOH4133E ALESERV function FAILED RC=nn

Explanation: An MVS ALESERV macro failed for function ADD or DELETE, as identified in the message text, for addressability to the IMS control region address space.

System action: The request is stopped.

User response: Contact IBM Software Support for assistance.

Severity: N/A

IOH4134E TERMSEC ENTRY CONTAINS AN INVALID STATIC LTERM NAME - name

Explanation: The LTERM name specified in a TERMSEC update list entry (as shown in the message text) is not a valid static LTERM name for the target IMS subsystem.

System action: The verification or installation of the resource update list fails.

User response: The TERMSEC request contains an invalid LTERM name. Change the LTERM name to a valid static LTERM name for the target IMS subsystem.

Severity: N/A

IOH4135E TERMSEC ENTRY CONTAINS AN INVALID type NAME - name

Explanation: A TERMSEC entry in the resource update list contains a COMMAND or TRANSACT, as shown by the type in the message text that is not defined in the target IMS subsystem.

System action: The verification or installation of the resource update list fails.

User response: Change the resource name (either command name or transaction code) to a name that is valid in the target IMS subsystem.

Severity: N/A

IOH4136E type SECURITY IS NOT ACTIVE. CANNOT PROCESS type ENTRIES

Explanation: The named security type (AGN or TERMINAL) is not active in the target IMS subsystem. AGN or TERMSEC update list entries are not valid when the associated security feature is not active.

System action: The verification or installation of the resource update list fails.

User response: Resource update list entries for AGN or TERMSEC updates, as shown in the message text, cannot be processed for the target IMS subsystem. Either change the target IMS subsystem to a subsystem that has the required security feature active, or delete the AGN or TERMSEC entries from the resource update list.

Severity: N/A

IOH4137E AGN name action FOR type BECAUSE IT IS reason DEFINED

Explanation: The requested action cannot be performed. If the request was to add a resource to an AGN, it cannot be performed because it is already defined to the AGN. If the request was to delete a resource from an AGN, it cannot be performed because a resource type with the name specified is not defined for AGN.

System action: The verification or installation of the resource update list fails.

User response: Change the AGN update request to a valid resource name, type, and action. Be sure that the resource type/name is not already included for an ADD request, or that the resource type/name is included in the AGN definition for a DELETE request.

Severity: N/A
IOH4138E TERMSEC UPDATED FAILED - name IS NOT PROTECTED

Explanation: IMS HP Sysgen Tools does not support adding security for a resource that is not currently protected.

System action: The verification or installation of the resource update list fails.

User response: To add security for a currently unprotected command or transaction, perform an IMS security gen, and use online change to implement the new security gen definitions.

Severity: N/A

IOH4139E TERMSEC UPDATED FAILED - LTERM name ACCESS TO resource ALREADY status

Explanation: The access requested in the update list TERMSEC entry is already defined.

System action: The verification or installation of the resource update list fails.

User response: The terminal security request is already defined. Remove the TERMSEC entry from the resource update list.

Severity: N/A

IOH4140E TERMSEC UPDATED FAILED - INVALID RESOURCE ID FOUND FOR LTERM name

Explanation: While installing a TERMSEC update, an invalid row number was found for the indicated IMS LTERM name. The row number in the CVB or SMB exceeded the number of rows in the matrix table.

System action: The verification or installation of the resource update list fails.

User response: This condition should not occur. Contact IBM Software Support for assistance.

Severity: N/A

IOH4141E UNABLE TO UPDATE type ENTRIES FOR AGN name BECAUSE IT WAS GENNED FOR type ALL

Explanation: When an AGN definition specifies ALL for a resource type (PROGRAM, TRANSACT, or LTERM), individual entries cannot be added or deleted from the AGN definition.

System action: The verification or installation of the resource update list fails.

User response: Remove any AGN requests for the indicated AGN name and resource type. It was generated for all of the indicated resource types, therefore, individual resource names cannot be added or deleted.

Severity: N/A

IOH4142E RELOAD of type name FAILED - reason

Explanation: An ACBLIB reload request failed. The type (PSB or DBD) and ACBLIB member names are shown in the message, along with the reason for the failure. The reason for the failure is of the following.

NOT STOPPED
The named program or database named in the message was not stopped. IMS HP Sysgen Tools should automatically stop the resource when the reload request is processed. Contact IBM Software Support for assistance.

PSB SCHEDULED
The program named in the message was active at the time that the reload was in progress. Ensure that the application program is not active at the time that a reload request is installed.

DBD OPEN
The database named in the message was still open when the reload request was attempted. Ensure that a database whose DBD is to be reloaded is not open when a reload is attempted.

DBD IS A HALDB PART
The database named in the message is a HALDB partition. Only the master HALDB name has a DBD, so only the master can be reloaded. Change the name of the database to the HALDB master name.

DB NOT /DBR'ED
The database to be reloaded must have been the object of an IMS /DBR command in order to reload the DBD. Ensure that the database has been processed by the /DBR command before reloading the DBD.

DBD HAS ERROR BLOCKS
The named database has EEQE elements that should be resolved before the DBD is reloaded. Recover the database (using the old DBD) before attempting to reload the DBD.

DBD IS ACTIVE
The database named in the message is currently in use. Before reloading the database, ensure that no applications are using the database.

DB IS AN MSDB
IMS HP Sysgen Tools does not support reloading the DBD of an MSDB type database.

FP NOT PRESENT
An attempt was made to reload the DBD of a
**OM NOT ACTIVE**

No OM address space is available for the target IMS system. The OM address space must be available before issuing the IMS INITIATE OLC command. When the IMS member level global online change method is used, the IMS INITIATE OLC command reloads a PSB or DBD.

**System action:** The reload of the indicated ACBLIB member fails, but any other changes are implemented in the resource update lists being installed.

**User response:** Review the reason for the ACBLIB member reload failure, and take the appropriate action.

**Severity:** N/A

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**IOH4143E • UNABLE TO VERIFY EDIT ROUTINE NAME editrtn FOR TRAN tranocode DUE TO PRIOR ERROR**

**Explanation:** IMS HP Sysgen Tools was unable to verify the named edit routine because of a prior error.

**System action:** The install request fails.

**User response:** Review error messages preceding this message to determine the reason for the failure of IMS HP Sysgen Tools to identify the transaction edit routine names present in the target IMS subsystem.

**Severity:** N/A

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**IOH4144E • VERIFY FUNCTION REQUESTED FOR AN UPDATE LIST WITH NO ENTRIES**

**Explanation:** An attempt was made to verify or install a resource update list that contained no entries.

**System action:** The requested action fails.

**User response:** Ensure that resource update lists that you specify for the verify or install functions are not empty.

**Severity:** N/A

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**IOH4145E • IMS DYNAMIC RESOURCE DEFINITION (DRD) ENABLED**

**Explanation:** The maintenance level of IMS HP Sysgen Tools does not support IMS Dynamic Resource Definition (DRD).

**System action:** The request fails.

**User response:** This maintenance level of IMS HP Sysgen Tools does not support an IMS system with DRD activated. HP sysgen maintenance may be available to resolve this problem. Contact IBM Software Support for assistance.

**Severity:** N/A
**IOH4146E**  
**Explanation:** Resource update lists cannot be installed while IMS is being stopped.

**System action:** The request fails.

**User response:** Retry the request when IMS is not being shut down.

**Severity:** N/A

**IOH4147E**  
**Explanation:** A randomizer reload was requested that required that the named database be processed by the /DBR command. An area in the database is currently being preloaded, or has a long-running region that is accessing the area. A /DBR is not possible at this time.

**System action:** The randomizer reload request fails.

**User response:** Retry the request when IMS is in the long-running region or area preload has completed.

**Severity:** N/A

**IOH4148E**  
**Explanation:** A randomizer reload was included in the resource update list being verified or installed, but Fast Path is not included in the target IMS system. IMS HP Sysgen Tools can only reload randomizers for DEDB databases. Because Fast Path is not included in the target IMS system, there cannot be any DEDB databases defined.

**System action:** The request fails.

**User response:** Remove any requests for DEDB randomizer reloads from the resource update list, and retry the operation.

**Severity:** N/A

**IOH4149E**  
**Explanation:** A randomizer reload was included in the resource update list being verified or installed, but there were no DEDB databases defined in the target IMS system.

**System action:** The request fails.

**User response:** Ensure that the proper target IMS system was used to verify or install the resource update list. Remove the DEDB randomizer reload entry from the resource update list for target IMS systems that have no DEDBs defined.

**Severity:** N/A

**IOH4150E**  
**Explanation:** A randomizer reload was included in the resource update list being verified or installed, but the randomizer was not found in any active DEDB databases.

**System action:** The request fails.

**User response:** Review the randomizer name(s) specified for DEDB randomizer reload to ensure that the randomizer name is currently in use. Use the IMS HP Sysgen Tools View option to verify that the randomizer name is currently loaded. Note that if a DEDB has been processed by the /DBR command, the randomizer would not currently be loaded.

**Severity:** N/A

**IOH4151E**  
**Explanation:** The number of databases using the requested randomizer changed during the process of reloading the randomizer module.

**System action:** The request fails.

**User response:** Ensure that the databases using the randomizer being reloading were not started during the randomizer reload process.

**Severity:** N/A

**IOH4152E**  
**Explanation:** An MVS load failed for the module named in the message. The message shows the load macro return code and the abend code that would have occurred.

**System action:** The request fails.

**User response:** Review the MVS syslog on the LPAR where the target IMS subsystem is running for other error messages that may be associated with the load failure. Contact the IBM Support Center for assistance.

**Severity:** N/A

**IOH4153E**  
**Explanation:** A resource update list contained a request for a resource type that is not supported in the target IMS subsystem. The message identifies the type of resource (DATABASE, TRAN, or RTCODE) and the target IMS subsystem type (DBCTL or DCCTL).

**System action:** The request fails.
User response: Remove resource update list entries that are not appropriate for the type of target IMS subsystem.

Severity: N/A

IOH4201E  INVALID COMMAND REQUESTED - CODE x
Explanation: The command entered was not found in the IMS HP Sysgen Tools list of valid commands.
System action: The command is not issued.
User response: Verify that the command entered on the panel begins with a slash (/) and that it contains a valid three character command immediately following the slash.
Severity: N/A

IOH4202E  AN ERROR OCCURRED LOADING MODULE modname ABEND abede REASON CODE rc
Explanation: An MVS LOAD macro returned an unexpected return code.
System action: The command is not issued.
User response: Review the abend code and return code to determine the cause of the MVS LOAD macro failure. Review the MVS SYSLOG on the MVS system where the requested IMS subsystem runs to determine whether there are any associated MVS error messages.
Severity: N/A

IOH4203E  MODULE modulename RECEIVED AN APPC MESSAGE WITH AN UNKNOWN REQUEST TYPE - reqtype
Explanation: An unknown function was supplied in the APPC message received by module IOHZCMA or IOHZRCB.
System action: The command is not issued.
User response: Contact IBM Software Support for assistance.
Severity: N/A

IOH4204E  APPC/IMS CALL TO modname FAILED RC=rc
Explanation: An unknown function was supplied in the APPC message received by module IOHZCMA.
System action: The command is not issued.
User response: Review the MVS SYSLOG on the system for any messages related to the APPC/IMS session failure. Also, determine whether APPC returned any message text that would be documented in message IOH4205I, which follows this message.
Severity: N/A

IOH4205I  message_text
Explanation: This message contains an APPC error message retrieved from the APPC error extract service. IMS HP Sysgen Tools uses this APPC message to show the information retrieved from APPC.

A call to an APPC module to service an APPC/IMS session returned with an unexpected return code. The error text returned by the error extract APPC service is documented in this message.
System action: The command is not issued.
User response: Review this message and the IOH4204E message that precedes it. For assistance with resolving the problem, contact IBM Software Support.
Severity: N/A

IOH4206E  NAME/TOKEN SERVICE IEANTCR FAILED WITH RETURN CODE rc
Explanation: An unexpected return code was received from the MVS Name/Token service, and is documented in the message text.
System action: The command is not issued.
User response: The return code present in message is not documented in z/OS MVS Programming: Assembler Services Reference. For assistance with resolving the problem, contact IBM Software Support.
Severity: N/A

IOH4208E  AN INTERNALLY GENERATED COMMAND HAD AN UNEXPECTED RESPONSE, AS FOLLOWS:
Explanation: An internally generated IMS command, such as START or STOP, returned an unexpected response.
System action: The requested action fails.
User response: Review the command and the unexpected response. Contact IBM Software Support for assistance.
Severity: N/A

IOH4209E  AN EMPTY RESOURCE UPDATE LIST WAS PRESENTED FOR INSTALL
Explanation: An attempt was made to verify or install a resource update list that contained no entries.
System action: The requested action fails.
User response: Ensure that resource update lists that you specify for the verify or install functions are not empty.
Severity: N/A
**IOH4210E**  IMS SHUTDOWN DETECTED

*Explanation:* IMS HP Sysgen Tools determined that IMS was in the process of shutting down at the time the requested function was being processed.

*System action:* The request fails.

*User response:* Ensure that IMS is not being shut down when the function was requested. Many IMS HP Sysgen Tools functions, including verifying or installing a resource update list or issuing an IMS command.

*Severity:* N/A

**IOH4401E**  UNEXPECTED RETURN CODE FROM IMS AIB CALL

*Explanation:* An IMS call using the AIB interface completed with an unexpected return code.

*System action:* The request fails.

*User response:* Look up the return code and reason code in the IMS Messages and Codes to determine the reason for the AIB call failure.

*Severity:* N/A

**IOH4302E**  AN ERROR OCCURRED LOADING MODULE modname ABEND abcd reason rc

*Explanation:* An unexpected return code was received from the MVS Name/Token service and is documented in the message text.

*System action:* The command is not issued.

*User response:* The return code present in the message is documented in the z/OS MVS Programming: Assembler Services Reference. Contact IBM Software Support for assistance.

*Severity:* N/A

**IOH4303E**  MODULE IOHZCMB RECEIVED AN APPC MESSAGE WITH AN UNKNOWN REQUEST TYPE -reqtype

*Explanation:* An unknown function was supplied in the APPC message received by module IOHZCMB.

*System action:* The command is not issued.

*User response:* Contact IBM Software Support for assistance.

*Severity:* N/A

**IOH4401E**  AN ERROR OCCURRED CHECKING AN UPDATE LIST-AN UNKNOWN RESOURCE TYPE WAS ENCOUNTED-type

*Explanation:* The resource update list sent to the APPC transaction program contained an unknown function in the APPC message.

*System action:* The installation is stopped.

*User response:* Contact IBM Software Support for assistance.

*Severity:* N/A
IOH4402E  AN ERROR OCCURRED CHECKING AN UPDATE LIST-AN UNKNOWN FUNCTION WAS ENCOUNTERED-

Explanation: The resource update list sent to the APPC transaction program contained an unknown function code in the APPC message.
System action: The installation is stopped.
User response: Contact IBM Software Support for assistance.
Severity: N/A

IOH4403E  type name function ERROR-RESOURCE reason

Explanation: The resource update list being installed contained an element for the resource type and name specified in the message. The function identified in the message was the action requested in the resource update list. The reason identifies the error condition encountered attempting to perform the requested function.
System action: The installation is stopped.
User response: Check the status of the resource type and name specified in the message.
Severity: N/A

IOH4404E  type name CONTAINS AN INVALID VALUE FOR option

Explanation: An error occurred while installing the named resource type and name specified in the message. The value for the specified option is not a valid value.
System action: The installation is stopped.
User response: Check the value specified for the option attribute for the named resource type and name. Use the VERIFY function to validate the content of the field. Contact IBM Software Support for assistance.
Severity: N/A

IOH4405E  AN ERROR OCCURRED PROCESSING DBD dbdname FOR THE VALUE OF THE option PARM

Explanation: While processing a resource update list entry for the named database, an error occurred while interpreting the value of the named option.
System action: The installation is stopped.
User response: Check the value specified for the option attribute for the named database. Use the VERIFY function to validate the content of the field. Contact IBM Software Support for assistance.
Severity: 8
IOH4411E ALESER function FAILED RC=rc
Explanation: An MVS ALESER macro failed for function ADD or DELETE for addressability to the IMS control region address space.
System action: The request fails.
User response: Contact IBM Software Support.
Severity: 8

IOH4421E MODULE IOHZRCB ENCOUNTERED AN ERROR PARSING type CONTROL BLOCKS
Explanation: Module IOHZRCB encountered an error while it was parsing the named type of IMS control block.
System action: The request fails.
User response: Contact IBM Software Support for assistance.
Severity: N/A

User response: Contact IBM Software Support for assistance.
Severity: N/A

IOH4503E type name function ERROR-RESOURCE reason
Explanation: The resource update list being installed contained an element for the resource type and name specified in the message. The function identified in the message was the action requested in the resource update list. The reason identifies the error condition encountered while attempting to perform the requested function.
System action: The installation is stopped.
User response: Check the status of the resource type and name specified in the message.
Severity: N/A

IOH4504E type name CONTAINS AN INVALID VALUE FOR option
Explanation: An error occurred while installing the named resource type and name specified in the message. The value for the specified option is not a valid value.
System action: The installation is stopped.
User response: Check the value specified for the option attribute for the named resource type and name. Use the VERIFY function to validate the content of the field. Contact IBM Software Support for assistance.
Severity: N/A

IOH4505E AN ERROR OCCURRED PROCESSING DBD dbname FOR THE VALUE OF THE option PARM
Explanation: While processing a resource update list entry for the named database, an error occurred while interpreting the value of the named option.
System action: The installation is stopped.
User response: Check the value specified for the option attribute for the named database. Use the VERIFY function to validate the content of the field. Contact IBM Software Support for assistance.
Severity: N/A

IOH4506E AN ERROR OCCURRED PROCESSING PSB psbname FOR THE VALUE OF THE option PARM
Explanation: While processing a resource update list entry for the named program, an error occurred while interpreting the value of the named option.
System action: The installation is stopped.
User response: Check the value specified for the option attribute for the named program. Use the VERIFY function to validate the content of the field. Contact IBM Software Support for assistance.

Severity: N/A

**IOH4507E** TRANS trancode INDICATES EDIT ROUTINE NUMBER n1 BUT ONLY n2 EXISTS

Explanation: The value of the transaction edit routine number created by IMS HP Sysgen Tools n1 exceeds the maximum number of transaction edit routines n2.

System action: The installation is stopped.

User response: Verify that a valid transaction edit routine name was included in the resource update list. Contact IBM Software Support for assistance.

Severity: N/A

**IOH4701E** ERROR INTERPRETING IMS COMMAND MATRIX (1)

Explanation: An error occurred retrieving information from the IMS transaction command matrix. The length of a row in the matrix was an unexpected value (not 8 for IMS Version 8 and earlier or 9 for IMS Version 9 and later).

System action: The request fails.

User response: Contact IBM Software Support for assistance.

Severity: N/A

**IOH4702E** MODULE IOHZGET RECEIVED AN INVALID RESOURCE TYPE=resource

Explanation: IMS HP Sysgen Tools initiated a request through APPC to extract the attributes of a resource. The APPC message contained an invalid value for the type of resource to be obtained.

System action: The operation is stopped.

User response: Contact IBM Software Support for assistance.

Severity: N/A

**IOH4703E** MODULE IOHZGET RECEIVED AN APPC MESSAGE WITH AN UNKNOWN REQUEST TYPE=type

Explanation: IMS HP Sysgen Tools initiated a request through APPC to extract the attributes of a resource. The APPC message contained an invalid value for the function to be performed.

System action: The operation is stopped.

User response: If DRD is not active, re-create the IMSID setup parameters to ensure that IMS HP Sysgen Tools does not support DRD.

Severity: N/A

**IOH4713E** DRD ENVIRONMENT IS NOT SUPPORTED

Explanation: IMS HP Sysgen Tools determined that DRD is active on the target IMS system. IMS HP Sysgen Tools does not support DRD.

System action: The request fails.

User response: If DRD is not active, re-create the IMSID setup parameters to ensure that IMS HP Sysgen Tools does not support DRD.

Severity: N/A
Tools obtains the current DRD status.

**Severity:** 8

---

**IOH4714E** LOAD FAILED FOR modname RC=rc ABCODE= code

**Explanation:** A LOAD for the specified module name failed. Had the condition not been intercepted, the result would have been an abend with abend code code, reason code rc.

**System action:** The requested function fails.

**User response:** Verify that the RESLIB DSN and IMS suffix in the IMSID options are correct.

**Severity:** N/A

---

**IOH4715E** DRD RESOURCES REQUESTED BUT DRD DISABLED - x

**Explanation:** A request for DRD information was received, but DRD is not active in the target IMS subsystem. The code at the end of the message indicates the reason for the error.

**System action:** The request fails.

**User response:** Ensure that the IMSID options are set properly in the HP Sysgen setup options.

**Severity:** 8

---

**IOH4716E** ERROR LOCATING IMS RDDS DATA SET NAMES - x

**Explanation:** An error occurred while trying to find the data set names for the RDDSs that are used by an IMS subsystem. The code at the end of the message indicates the reason for the error.

**System action:** The request fails.

**User response:** Contact IBM Software Support.

**Severity:** 8

---

**IOH4720E** DRD PROCESSING REQUESTED IN NON-DRD ENVIRONMENT

**Explanation:** A request was received for information about IMS DRD resources, but DRD is not enabled in the IMS subsystem.

**System action:** The request fails.

**User response:** Change your request so that non-DRD resources are requested in an IMS subsystem that has DRD disabled.

**Severity:** 8

---

**IOH4725E** CMDERR RC=xx REASON CODE=yy

**Explanation:** An error message was received in response to an IMS type 2 command. The CMDERR return and reason codes are shown in the message text.

**System action:** The request fails.

**User response:** Investigate the reason for the IMS type 2 command failure.

**Severity:** 8

---

**IOH4726E** CMDERR text

**Explanation:** An error message was received in response to an IMS type 2 command. The CMDERR text is shown in the message text.

**System action:** The request fails.

**User response:** Investigate the reason for the IMS type 2 command failure.
IOH4727E  CMDSECERR EXIT RC=ww SAF RC=xx
   RACFRC=yy RACFRSN=zz

Explanation: An error message was received in response to an IMS type 2 command. The command security error return and reason codes are shown in the message text.

System action: The request fails.

User response: Investigate the reason for the IMS type 2 command failure.

Severity: 8

IOH4728E  RESPONSE text

Explanation: An error message was received in response to an IMS type 2 command. The error text response is shown in the message text.

System action: The request fails.

User response: Investigate the reason for the IMS type 2 command failure.

Severity: 8

IOH4730E  ACBMBR OLC NOT SUPPORTED: reason

Explanation: An ACBLIB reload request failed for the reason specified in the message text. Either global online change is not active, or IMS SCI or OM is not active.

System action: The verification or installation of the resource update list fails.

User response: Either change the ACB reload request from an IMS member level global online change to an HP Sysgen ACB reload process, or correct the environment in the target IMS system to make available the one or more IMS features that are indicated.

Severity: N/A

IOH4731E  TOO MANY ACB RELOAD NAMES IN THE RESOURCE UPDATE LIST(S)

Explanation: There were more than 100 ACB reload entries in the one or more resource update lists that were to be installed. All ACB reload requests in the resource update lists that are being installed are performed in a single IMS command. IMS limits the number of ACB members that can be specified in an INITIATE OLC TYPE(ACBMBR) command to 100 names.

System action: The verification or installation of the resource update list fails.

User response: Change how the resource update lists are installed to limit the number of reload ACB requests to 100 names for each install request. Either install only one resource update list at a time, or break the resource update list into multiple lists, and install each independently.

Severity: N/A

IOH4801E  GETMAIN FAILED FOR SYSID TABLE

Explanation: A GETMAIN request for above the 16M line storage failed.

System action: The request is stopped.

User response: Verify that sufficient storage is available in the APPC transaction program JCL (see sample library SIOHSAMP member IOHTPADD). Contact IBM Software Support for assistance.

Severity: N/A

IOH4802E  ALESERV function FAILED RC=rc

Explanation: An ALESERV macro, with function ADD or DELETE, as shown in the message, failed.

System action: The request is stopped.

User response: Contact IBM Software Support for assistance.

Severity: N/A

IOH4803E  FIND FAILED FOR A LOCAL MSC SYSID

Explanation: While reviewing the MSC SYSID table, a local SYSID value was not found.

System action: The request is stopped.

User response: Contact IBM Software Support for assistance.

Severity: N/A

IOH4901E  UNABLE TO INSTALL UPDATES - ONLINE CHANGE IS ACTIVE

Explanation: The IMS subsystem has an online change in progress. IMS HP Sysgen Tools cannot install a resource update list if an online change is already in progress.

System action: The request is stopped.

User response: Determine the reason why an online change is in progress. Use the /MODIFY ABORT command to end the active online change, and then retry the operation.

Severity: N/A
IOH4902E  THE HP SYSGEN PSB NAME DEFINED IN THE SETUP OPTIONS WAS NOT FOUND

Explanation: The PSB name that was specified in the IMSID options for this IMS system was not found in the IMS online control blocks.

System action: The request fails.

User response: Verify that the proper PSB name was entered in the IMSID options for this IMS subsystem. If correct, ensure that the PSB name is included in the IMS system definition.

Severity: N/A

IOH4903E  LOAD FAILED FOR MODULE modname RC=rc

Explanation: An MVS LOAD failed with the indicated return code.

System action: The request is stopped.

User response: Review the MVS SYSLOG on the system where IMS is active for messages related to the load failure.

Severity: N/A

IOH4904E  LOCAL ONLINE CHANGE REQUESTED IN GLOBAL ONLINE CHANGE ENVIRONMENT

Explanation: A request for local online change process was made for an IMS subsystem with global online change enabled.

System action: The requested action fails.

User response: Contact IBM Software Support for assistance.

Severity: N/A

IOH4905E  GETMAIN FAILED FOR storage RC=rc

Explanation: An MVS GETMAIN failed with the indicated return code. The type of storage being obtained is indicated in the message text.

System action: The request is stopped.

User response: Review the MVS SYSLOG on the system where IMS is active for messages related to the load failure. Contact IBM Software Support for assistance.

Severity: N/A

IOH4908E  MVS ATTACH FOR DFSRRC00 FAILED-RC=rc

Explanation: An MVS ATTACH failed with the indicated return code.

System action: The request is stopped.

User response: Review the MVS SYSLOG on the system where IMS is active for messages related to the attach request failure. The ATTACH return code is indicated in the message text. Contact IBM Software Support for assistance.

Severity: N/A

IOH4909E  SUBTASK FAILED-ABEND=ab-code

Explanation: An attached task abended with the indicated abend code.

System action: The request is stopped.

User response: Review the MVS SYSLOG on the system where IMS is active for messages related to the subtask failure. There might be additional IMS HP Sysgen Tools messages displayed at the user’s terminal, which should also be in the MVS SYSLOG.

Severity: N/A

IOH4912E  IMS imsid HAS AN UNKNOWN APPC STATUS=STATUS

Explanation: The indicated IMS subsystem contained an unknown value in LSCD field LSCD_STATUS.

System action: The request is stopped.

User response: Contact IBM Software Support for assistance.

Severity: N/A

IOH4913E  IMS imsid HAS A TRANSITORY APPC STATUS=code

Explanation: The indicated IMS subsystem contained a transitory status in LSCD field LSCD_STATUS.

System action: The request is stopped.

User response: Determine the reason why APPC/IMS status is either being started or being stopped.

Severity: N/A

IOH4914E  INSTALLATION FAILED WITH UNDETERMINED CAUSE

Explanation: The install request experienced an error.

System action: Installation fails.

User response: Review the messages in the MVS SYSLOG where the target IMS subsystem runs for additional information about this error.

Severity: N/A
Severity: N/A

IOH4924E  RETRIEVE FOR OLCSTAT IMSIDS FAILED
Explanation: An attempt to retrieve the active IMSIDs from an OLCSTAT data set failed.
System action: The requested action fails.
User response: Contact IBM Software Support for assistance.
Severity: N/A

IOH4925E  COPYMOD REQUEST RECEIVED FOR LOCAL ONLINE CHANGE IMS SYSTEM
Explanation: A request to perform the COPYMOD function was invalid. The COPYMOD request copies the active MODBLKS information to the inactive MODBLKS data set for an IMSplex member that is not being updated by a resource update list. The target IMS subsystem does not have global online change active.
System action: The requested action fails.
User response: If the IMS system that received this error message was recently converted from global online change to local online change, ensure that this IMSID is removed from the old OLCSTAT data set by performing an online change for the old IMSplex. Otherwise, contact IBM Software Support for assistance.
Severity: N/A

IOH5001E  LOAD FAILED FOR MODULE modname RC=rc
Explanation: An MVS LOAD macro returned an unexpected return code while loading the indicated module name.
System action: The request is stopped.
User response: Review the MVS SYSLOG on the system where IMS is active for additional messages related to the LOAD failure. Contact IBM Software Support for assistance.
Severity: N/A

IOH5003E  UNKNOWN FUNCTION PASSED TO IOHZMAIN-function
Explanation: The APPC message received did not contain a valid IMS HP Sysgen Tools function code in the message text.
System action: The request is stopped.
User response: Contact IBM Software Support for assistance.
Severity: N/A

IOH5010E  IMS NOT ACTIVE ON THIS MVS IMAGE-IMS imsid
Explanation: The IMS SCD for the named IMSID was not found on the MVS.
System action: The request is stopped.
User response: Contact IBM Software Support for assistance.
Severity: N/A
User response: Ensure that IMS is active. Also, ensure that the APPC symbolic destination supplied in the SETUP options for this IMSID is correct for the MVS system where this IMS runs.

Severity: N/A

IOH5011E IMS insid IS RUNNING AN UNKNOWN VERSION OF IMS version
Explanation: The version of IMS indicated in the SCD, and shown in the message text, is not supported.
System action: The request is stopped.
User response: Contact IBM Software Support for assistance.
Severity: N/A

IOH5012E IMS insid HAS AN UNKNOWN APPC STATUS-code
Explanation: The indicated IMS subsystem contained an unknown value in LSCD field LSCD_STATUS.
System action: The request is stopped.
User response: Contact IBM Software Support for assistance.
Severity: N/A

IOH5013E IMS insid HAS A TRANSITORY APPC STATUS-code
Explanation: The indicated IMS subsystem contained a transitory status in LSCD field LSCD_STATUS.
System action: The request is stopped.
User response: Determine the reason why APPC/IMS status is either being started or being stopped.
Severity: N/A

IOH5014E IMS insid WAS SHUT DOWN WHILE AN UPDATE LIST WAS BEING IMPLEMENTED
Explanation: The requested IMS subsystem ended during the resource update list installation process. The process could not be completed.
System action: The request is stopped.
User response: Retry the operation when IMS is restarted.
Severity: N/A

IOH5015E OPEN FAILED FOR IOHOPT
Explanation: An MVS OPEN request for IOHOPT DD failed.
System action: The function fails.

User response: For errors related to the OPEN failure in an APPC/MVS initiator, review the MVS SYSLOG where IMS is running. This could include security errors or “DD statement missing” types of MVS errors. Contact IBM Software Support for additional assistance.
Severity: N/A

IOH5016E THE RESPONSE MESSAGE WAS LARGER THAN THE MAXIMUM SIZE PERMITTED
Explanation: The response to an APPC request was larger than the maximum message size permitted by IMS HP Sysgen Tools.
System action: The request is stopped.
User response: Review the MVS SYSLOG on the system where IMS is running for any error messages. Contact IBM Software Support for assistance.
Severity: N/A

IOH5017E NAME/TOKEN SERVICE IENATCR FAILED WITH RETURN CODE=rc
Explanation: A request to create an MVS name/token returned an unexpected return code.
System action: The request is stopped.
User response: Contact IBM Software Support for assistance.
Severity: N/A

IOH5018E THE HP SYSGEN PSB NAME DEFINED IN THE SETUP OPTION WAS NOT FOUND
Explanation: The PSB name that was specified in the IMSID options for this IMS system was not found in the IMS online control blocks.
System action: The request fails.
User response: If a resource update list installation was in progress when you attempted to install a second resource update list, this error may occur. Verify that the proper PSB name was entered in the IMSID options for this IMS subsystem. If it is correct, ensure that the PSB name is included in the IMS system definition.
Severity: N/A

IOH5020E function FAILED FOR IMS INSTALL RC=nn
Explanation: An ENQUEUE or DEQUEUE function, as indicated in the message text, received an unexpected return code.
System action: The requested action fails.
User response: If a resource update list installation was in progress when you attempted to install a second resource update list, this error may occur. Contact IBM
Software Support for assistance.

Severity: N/A

---

**IOH5021E**  
**EXTAEX MACRO FAILED**  
**RC=nn REASON=nn**

**Explanation:**  
An ESTAEX macro received an unexpected return code.

**System action:**  
The requested action fails.

**User response:**  
Contact IBM Software Support for assistance.

Severity: N/A

---

**IOH5022E**  
**DEVTYPE MACRO FAILED**  
**RC=nn REASON=nn**

**Explanation:**  
A DEVTYPE macro received an unexpected return code.

**System action:**  
The requested action fails.

**User response:**  
Contact IBM Software Support for assistance.

Severity: N/A

---

**IOH5023E**  
**DEALLOCATION FAILED**  
**DD ddname ERROR CODE=code INFO CODE=code**

**Explanation:**  
A dynamic allocation deallocation request received an unexpected return code.

**System action:**  
The requested action fails.

**User response:**  
Review the dynamic allocation error code, and contact IBM Software Support for assistance, if necessary.

Severity: N/A

---

**IOH5024E**  
**SDUMP FAILED**  
**RC=rc REASON=reason**

**Explanation:**  
An MVS SDUMP macro returned with an unexpected return code and/or reason code.

**System action:**  
The dump request fails.

**User response:**  
Review the MVS SYSLOG where the function failed for additional messages indicating the reason the MVS SVC dump failed.

Severity: N/A

---

**IOH5024I**  
**message text**

**Explanation:**  
This IMS HP Sysgen Tools message shows the results of an APPC Error Extract request for the error message text associated with an APPC error.

**System action:**  
None.

**User response:**  
Review the error message text to determine the cause of the APPC failure described by this error. There are additional IMS HP Sysgen Tools error messages that describe the APPC function being performed and the return code from that function.

Severity: N/A

---

**IOH5025E**  
**DUPLICATE DUMP SUPPRESSED BY DAE**

**Explanation:**  
MVS Dump Analysis and Elimination services suppressed an SVC dump, probably because a duplicate SVC dump was already taken.

**System action:**  
An SVC dump is not taken.

**User response:**  
None.

Severity: N/A

---

**IOH5100F**  
**APPC error message**

**Explanation:**  
This message contains an APPC error message that is retrieved from the APPC error extract service. IMS HP Sysgen Tools uses this message to show the information that is retrieved from APPC.

**System action:**  
None

**User response:**  
Use the APPC error information in this message in conjunction with the information in message IOH5104E to determine the reason for the APPC call failure.

Severity: N/A

---

**IOH5101E**  
**EXPECTED MESSAGE DFS3499I NOT RECEIVED FOR MODIFY type COMMAND**

**Explanation:**  
While attempting to install a resource update list, an IMS /MODIFY command (either PREPARE or COMMIT as indicated in the message) did not return a DFS3499I message indicating that the function had completed.

**System action:**  
The request is stopped.

**User response:**  
Determine the reason for the failed online change command. Contact IBM Software Support for assistance.

Severity: N/A

---

**IOH5102E**  
**AN ERROR OCCURRED LOADING MODULE modname ABEND abcode REASON CODE rc**

**Explanation:**  
An MVS LOAD macro failed for the indicated module name. The abend code and return code indicate the reason for the LOAD failure.

**System action:**  
The request is stopped.

**User response:**  
Review the reason for the load failure as indicated in the abend code and return code, as well
as any additional messages that might be present in the MVS SYSLOG on the system where IMS is running.

Severity: N/A

---

**IOH5103E**  APPLIC/IMS SECURITY ERROR

** issuinCmd command**

Explanation: While attempting to issue the IMS command shown in the message text, an APPLIC/IMS return code indicated that a security error occurred.

System action: The request is stopped.

User response: Ensure that the authorized user ID specified for this IMSID in the SETUP options has authority to issue the command shown in the message.

Severity: N/A

---

**IOH5104E**  APPLIC CALL TO module FAILED RC=rc

Explanation: An APPLIC/IMS request issued to the indicated APPLIC service module failed with the indicated return code.

System action: The request is stopped.

User response: Review the MVS SYSLOG on the system where IMS is running as well as the IMS MTO log for additional indications of the reason for the APPLIC/IMS session error. When APPLIC provides additional error text, it is shown in message IOH5111I. Contact IBM Software Support for assistance.

Severity: N/A

---

**IOH5105E**  DISPLAY MODIFY FAILED TO SHOW NO WORK PENDING

Explanation: While performing an online change for MODBLKS, the /DIS MODIFY ALL command failed to show that there was no work pending.

System action: The request is stopped.

User response: Contact IBM Software Support for assistance.

Severity: N/A

---

**IOH5106E**  NAME/TOKEN SERVICE IENTRT FAILED WITH RETURN CODE rc

Explanation: The MVS Name/Token service provided an unexpected return code while retrieving the IMS HP Sysgen Tools token.

System action: The request is stopped.

User response: Contact IBM Software Support for assistance.

Severity: N/A

---

**IOH5107E**  /MODIFY PREPARE WAS UNSUCCESSFUL-SEE MVS SYSLOG FOR MESSAGES

Explanation: IMS HP Sysgen Tools issued a /MODIFY PREPARE MODBLKS command, but the command failed.

System action: The request is stopped.

User response: Review the MVS SYSLOG on the system where IMS is running indicating the reason for a failure in the /MODIFY PREPARE command that was issued.

Severity: N/A

---

**IOH5108E**  /MODIFY COMMIT DID NOT COMPLETE

Explanation: IMS HP Sysgen Tools issued a /MODIFY COMMIT command, but the command failed.

System action: The request is stopped.

User response: Review the MVS SYSLOG on the system where IMS is running and the IMS MTO log for IMS messages indicating the reason for a failure in the /MODIFY COMMIT command that was issued.

Severity: N/A

---

**IOH5109E**  UNEXPECTED RESPONSE TO MODIFY type COMMAND

Explanation: The response to an IMS /MODIFY PREPARE or COMMIT command was not the expected response. The message that follows is the response received from IMS.

System action: The request fails.

User response: Review the message that follows this message for the response to the /MODIFY command. Contact IBM Software Support to review the cause of the unexpected response.

Severity: N/A

---

**IOH5201E**  UNEXPECTED RESPONSE TO command COMMAND

Explanation: A response to the indicated command was not expected. The message that follows the IOH5201E message shows the unexpected response segment.

System action: The request is stopped.

User response: Review this and the message that follows it (which is the unexpected response text). Contact IBM Software Support for assistance.

Severity: N/A

---
<table>
<thead>
<tr>
<th>Code</th>
<th>Message</th>
<th>Explanation</th>
<th>System Action</th>
<th>User Response</th>
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</tr>
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<tr>
<td>IOH5202E</td>
<td>AN ERROR OCCURRED LOADING MODULE modname ABEND abcde REASON CODE rc</td>
<td>An MVS LOAD macro failed for the indicated module name. The abend code and return code indicate the reason for the LOAD failure.</td>
<td>The request is stopped.</td>
<td>Review the reason for the LOAD failure as indicated in the abend code and return code, as well as any additional messages that might be present in the MVS SYSLOG on the system where IMS is running.</td>
<td>N/A</td>
</tr>
<tr>
<td>IOH5501E</td>
<td>AN ERROR OCCURRED CHECKING AN UPDATE LIST-AN UNKNOWN RESOURCE TYPE WAS ENCOUNTERED-resource</td>
<td>The resource update list sent to the APPC transaction program contained an unknown resource type in the APPC message.</td>
<td>The installation is stopped.</td>
<td>Contact IBM Software Support for assistance.</td>
<td>N/A</td>
</tr>
<tr>
<td>IOH5502E</td>
<td>AN ERROR OCCURRED CHECKING AN UPDATE LIST-AN UNKNOWN FUNCTION WAS ENCOUNTERED-code</td>
<td>The resource update list sent to the APPC transaction program contained an unknown function code in the APPC message.</td>
<td>The installation is stopped.</td>
<td>Contact IBM Software Support for assistance.</td>
<td>N/A</td>
</tr>
<tr>
<td>IOH5503E</td>
<td>MODBLKS MODULE modname IS INCONSISTENT WITH MATRIX TABLE id</td>
<td>The active MODBLKS and MATRIX libraries have an inconsistency in the number of resources defined in the named module name and the MATRIX table id specified in the message text.</td>
<td>The request is stopped.</td>
<td>Ensure that the proper IMS libraries were specified in the SETUP for this IMSID and that the MATRIX libraries have only members that were created in the last IMS security gen process.</td>
<td>N/A</td>
</tr>
</tbody>
</table>

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IOH5505E  RESOURCE TYPE resource REQUESTED BUT MODBLKS MEMBER modname WAS NOT FOUND
Explanation: A request for the stated resource type was received, but the MODBLKS module that identifies resources of that type was not present in the MODBLKS data set.
System action: The request is stopped.
User response: Contact IBM Software Support for assistance.
Severity: N/A

IOH5506E  RESOURCE TYPE resource REQUESTED BUT MODBLKS MEMBER modname HAS AN INVALID LENGTH
Explanation: A request for the stated resource type was received, but the MODBLKS module that identifies resources of that type appears to be invalid.
System action: The request is stopped.
User response: Verify that the stated MODBLKS module is valid.
Severity: N/A

IOH5507E  IMS ONLINE AND MODBLKS HAVE A DIFFERENT NUMBER OF resource
Explanation: The number of resources of the type identified in the message text defined in the active MODBLKS data set and the number present in the IMS online environment are not the same.
System action: The request is stopped.
User response: Verify that the stated MODBLKS module for the stated resource type is valid.
Severity: N/A

IOH5508E  VALIDATION FAILED FOR MATRIX TABLE id
Explanation: The MATRIX table loaded from the active MATRIX library did not contain valid header information.
System action: The request is stopped.
User response: Verify that the stated MATRIX module containing the stated table ID is a valid MATRIX table.
Severity: N/A

IOH5509E  MATRIX MEMBER modname WAS NOT FOUND IN THE ACTIVE MATRIX DATASET
Explanation: The stated module name was not found in the active MATRIX library, although definitions appear to have been loaded from the member when IMS was started.
System action: The request is stopped.
User response: Verify that the stated MATRIX module containing the stated table ID is a valid MATRIX table.
Severity: N/A

IOH5510E  A CMD ENTRY IN THE RESOURCE UPDATE LIST HAS AN INVALID SEQUENCE - value
Explanation: The value found in an IMS command entry of a resource update list was not a valid value. Only values of BEFORE or AFTER are permitted.
System action: Processing stops.
User response: Verify that IMS command entries in the resource update lists contain valid values for the command sequence field. The value must be either BEFORE or AFTER. The value found is shown in the message text.
Severity: N/A

IOH5511E  RESOURCE COUNT MISMATCH FOR resource IN matrix MATRIX
Explanation: The number of resources defined in the MATRIX table type identified in the message text does not agree with the number of resources defined in the MODBLKS data set.
System action: The request is stopped.
User response: Contact IBM Software Support for assistance.
Severity: N/A

IOH5512E  AN EMPTY RESOURCE UPDATE LIST WAS PRESENTED FOR INSTALL
Explanation: An attempt was made to install a resource update list that contained no entries.
System action: The requested action fails.
User response: Ensure that any resource update list that you specify for the install function is not an empty list.
Severity: N/A

IOH5601E  UNKNOWN DDNAME FOUND IN DDNAME LIST
Explanation: A call to retrieve DDNAME information from the IMS control region contained an unexpected value for one of the DD names specified.
System action: The request is stopped.
User response: Contact IBM Software Support for assistance.

Severity: N/A

**IOH5603E** SETLOCK type FAILED RC=rc

Explanation: An MVS SETLOCK macro request received an unexpected return code. The function (OBTAINT or RELEASE) is also specified in the message text.

System action: The request is stopped.

User response: Contact IBM Software Support for assistance.

Severity: N/A

**IOH5604E** function FOR ECSA FAILED RC=rc

Explanation: An MVS GETMAIN or FREEMAIN macro request received an unexpected return code. The request was for ECSA storage.

System action: The request is stopped.

User response: Review the documentation, including any messages that might be in the MVS SYSLOG on the system where the IMS control region runs. Contact IBM Software Support for assistance.

Severity: N/A

**IOH5605E** SRB ERROR IEAMSCHD RC=10 COMP=synchcomp CODE=abend-code REASON=rc (STATUS xxxx)

Explanation: An SRB scheduled to gather information from the IMS control region address space failed due to the abend code and reason code stated in the message text. The status information displayed indicates the activity type that was being processed at the time of the failure.

System action: The request is stopped.

User response: Review the documentation, including any messages that might be in the MVS SYSLOG on the system where the IMS control region runs. Contact IBM Software Support for assistance.

Severity: N/A

**IOH5606E** IEAMSCHD FAILED RC=XX

Explanation: An MVS IEAMSCHD (schedule) macro completed with an unexpected return code.

System action: The request is stopped.

User response: Review the documentation, including any messages that might be in the MVS SYSLOG on the system where the IMS control region runs. Contact IBM Software Support for assistance.

Severity: N/A

**IOH5607E** IOHSRB00 FAILED - SEE SYSLOG MESSAGE(S) (STATUS=XXXX)

Explanation: Module IOHSRB00 failed to gather the documentation requested. The status information identifies the activity in progress at the time of the failure.

System action: The request is stopped.

User response: Review the documentation, including any messages that might be in the MVS SYSLOG on the system where the IMS control region runs. Contact IBM Software Support for assistance.

Severity: N/A

**IOH5609E** BDL FAILED RC=rc REASON=reason

Explanation: While attempting to verify the presence of modules DFSVNUC n, DFSISDC n, and DFSCVC00 in the IMS control region STEPLIB data sets, an error occurred during the BDL process. The return code and severity code associated with the BDL macro are shown.

System action: The request fails.

User response: Contact IBM Software Support for assistance.

Severity: N/A

**IOH5610E** MODULE modname NOT FOUND IN IMS CONTROL REGION STEPLIB

Explanation: While attempting to verify the presence of modules DFSVNUC n, DFSISDC n, and DFSCVC00 in the IMS control region STEPLIB data sets, the listed module was not found.

System action: The request fails.

User response: Contact IBM Software Support for assistance.

Severity: N/A

**IOH5611E** MODULE modname NOT FOUND IN SAME LIBRARY AS MODULE modname

Explanation: While attempting to verify the presence of modules DFSVNUC n, DFSISDC n, and DFSCVC00 in the IMS control region STEPLIB data sets, the modules were found, but not all in the same library.

System action: The request fails.

User response: Contact IBM Software Support for assistance.

Severity: N/A
IOH5712E  SWAREQ FAILED FOR type RC=rc

Explanation: An MVS SWAREQ macro returned with an unexpected return code while trying to retrieve either the SIOT or a JFCB, as identified in the message text.

System action: The request is stopped.

User response: Review the documentation, including any messages that might be in the MVS SYSLOG on the system where the IMS control region runs. Contact IBM Software Support for assistance.

Severity: N/A

IOH5801E  GETMAIN FAILED FOR SYSID TABLE

Explanation: An MVS GETMAIN macro failed for storage above the 16M line.

System action: The request fails.

User response: Verify that sufficient virtual storage is available to the APPC application programs. The REGION= keyword used in the IOHTPADD job executed at product installation time might be related to this problem.

Severity: N/A

IOH5802E  ALESERV function FAILED RC=rc

Explanation: An MVS ALESERV macro failed for function ADD or DELETE, as identified in the message text, for addressability to the IMS control region address space.

System action: The request is stopped.

User response: Contact IBM Software Support for assistance.

Severity: N/A

IOH5902E  ONLINE SYSTEM UPDATES WERE NOT BACKED OUT

Explanation: Removal of a partially installed resource update list was unsuccessful.

System action: A partial resource update list installation might be left in place.

User response: Review the MVS SYSLOG on the system where the IMS control region runs for messages with associated IMS HP Sysgen Tools. Contact IBM Software Support for assistance.

Severity: N/A

IOH6001E  AN ERROR OCCURRED CHECKING AN UPDATE LIST-AN UNKNOWN RESOURCE TYPE WAS ENCOUNTERED-type

Explanation: The resource update list sent to the APPC transaction program contained an unknown resource type in the APPC message.

System action: The installation is stopped.

User response: Contact IBM Software Support for assistance.

Severity: N/A

IOH6002E  AN ERROR OCCURRED CHECKING AN UPDATE LIST-AN UNKNOWN RESOURCE TYPE WAS ENCOUNTERED-function

Explanation: The resource update list sent to the APPC transaction program contained an unknown function code in the APPC message.

System action: The installation is stopped.

User response: Contact IBM Software Support for assistance.

Severity: N/A
IOH6003E resource name function
ERROR-RESOURCE condition

Explanation: While attempting to install the named resource definition, an inconsistency was found. The condition that caused the error is identified in the message text.

System action: The installation is stopped.

User response: Contact IBM Software Support for assistance.

Severity: N/A

IOH6004E resource name CONTAINS AN INVALID VALUE FOR option

Explanation: While attempting to install the named resource definition, an inconsistency was found. An invalid value for the option identified in the message text was encountered.

System action: The installation is stopped.

User response: Contact IBM Software Support for assistance.

Severity: N/A

IOH6005E ERROR INSERTING ENTRY IN modname

Explanation: An error occurred while inserting a resource definition entry in the named MODBLKS module.

System action: The installation is stopped.

User response: Contact IBM Software Support for assistance.

Severity: N/A

IOH6006E AN EMPTY RESOURCE UPDATE LIST WAS PRESENTED FOR INSTALL

Explanation: An attempt was made to install a resource update list that contained no entries.

System action: The requested action fails.

User response: Ensure that the resource update lists that you specify for the install function are not empty.

Severity: N/A

IOH6101E INVALID LOG RECORD LENGTH-reason

Explanation: A request to log an IMS update contained an error in the record, which is indicated in the reason code in the message text.

System action: The request is stopped.

User response: Review the MVS SYSLOG on the system where IMS is running for additional error messages related to the OPEN failure. Contact IBM Software Support for assistance.

Severity: N/A

IOH6102E TIME MACRO FAILED RC=rc

Explanation: The MVS TIME macro returned an unexpected return code.

System action: The request is stopped.

User response: Review the return code returned by the MVS TIME macro. Contact IBM Software Support for assistance.

Severity: N/A

IOH6103E INVALID RESOURCE TYPE IN LOG RECORD-type

Explanation: A request to log an IMS update contained an invalid control block type in the record.

System action: The request is stopped.

User response: Contact IBM Software Support for assistance.

Severity: N/A

IOH6104E AN EMPTY RESOURCE UPDATE LIST WAS PRESENTED FOR INSTALL

Explanation: An attempt was made to install a resource update list that contained no entries.

System action: The requested action fails.

User response: Ensure that any resource update list that you specify for the install function is not empty.

Severity: N/A

IOH6201E OPEN FAILED FOR IOHOPT

Explanation: An attempt to open the IOHOPT data set failed.

System action: The request is stopped.

User response: Review the MVS SYSLOG on the system where IMS is running for additional error messages related to the OPEN failure. Contact IBM Software Support for assistance.

Severity: N/A

IOH6202E CLOSE FAILED FOR IOHOPT

Explanation: An attempt to close the IOHOPT data set failed.

System action: The request is stopped.

User response: Review the MVS SYSLOG on the system where IMS is running for additional error messages related to the CLOSE failure. Contact IBM Software Support for assistance.

Severity: N/A
messages related to the OPEN failure. Contact IBM Software Support for assistance.

Severity: N/A

IOH6204E  IOH OPTIONS MODULE modname IS INVALID

Explanation: The IMS HP Sysgen Tools options module named in the message text is invalid.

System action: The request is stopped.

User response: Contact IBM Software Support for assistance.

Severity: N/A

IOH6301E  INTERNAL ERROR WRITING OUTPUT - INVALID BUFFER INDICATOR

Explanation: An unexpected condition occurred while writing the JCLIN file.

System action: The job step abends.

User response: Contact IBM Software Support for assistance.

Severity: U4021
**IOH6302E**  INVALID MODULE LENGTH DETECTED FOR MODBLKS MEMBER xxxxxxxx

**Explanation:** The length of the MODBLKS module specified in the message was not valid for the release of IMS found in the RESLIB data set.

**System action:** The job step abends.

**User response:** Ensure that a valid MODBLKS data set was supplied as input to the IOHJCLIN process and that the RESLIB data set is the same release is the MODBLKS data set. Contact IBM Software Support for assistance.

**Severity:** U4021

**IOH6303E**  AN ERROR OCCURRED PROCESSING DBD aaaaaaaa FOR THE VALUE OF THE ppppppppp PARAMETER

**Explanation:** While trying to interpret the value of the specified parameter for DBD aaaaaaaa, an unexpected value was encountered.

**System action:** The job step abends.

**User response:** Ensure that a valid MODBLKS data set was supplied as input to the IOHJCLIN process and that the RESLIB data set is the same release is the MODBLKS data set. Contact IBM Software Support for assistance.

**Severity:** U4021

**IOH6304E**  AN ERROR OCCURRED PROCESSING PSB aaaaaaaa FOR THE VALUE OF THE ppppppppp PARAMETER

**Explanation:** While trying to interpret the value of the specified parameter for PSB aaaaaaaa, an unexpected value was encountered.

**System action:** The job step abends.

**User response:** Ensure that a valid MODBLKS data set was supplied as input to the IOHJCLIN process and that the RESLIB data set is the same release is the MODBLKS data set. Contact IBM Software Support for assistance.

**Severity:** U4021

**IOH6305E**  AN ERROR OCCURRED PROCESSING THE TRANSACTION EDIT ROUTINE FOR TRAN hhhhhhh

**Explanation:** The transaction edit routine number found in the SMB definition for the transaction specified was not valid. The transaction edit routine number exceeded the number of transaction edit routines included in the IMS nucleus.

**System action:** The job step abends.

**User response:** Ensure that a valid MODBLKS data set was supplied as input to the IOHJCLIN process and that the RESLIB data set is the same release is the MODBLKS data set. Contact IBM Software Support for assistance.

**Severity:** U4021

**IOH6401E**  IOH BMP PSB ADDRESS condition

**Explanation:** There was an error locating the IMS HP Sysgen Tools BMP PSB. The address was missing or invalid.

**System action:** Processing stops.

**User response:** Contact IBM Software Support for assistance.

**Severity:** U4021

**IOH6501E**  ERROR PARSING INITIATE OLC COMMAND - CODE=nn

**Explanation:** IMS HP Sysgen Tools failed to successfully parse the output of the initiate OLC command output.

**System action:** The requested action fails.

**User response:** Contact IBM Software Support for assistance.

**Severity:** N/A

**IOH6502E**  IMS SCI function CALL FAILED RC=rc REASON CODE=reason

**Explanation:** An IMS SCI call received an unexpected return code or reason code.

**System action:** The requested action fails.

**User response:** Review the requested SCI function and return/reason codes or contact IBM Software Support for assistance.

**Severity:** N/A

**IOH6503E**  UNEXPECTED IMSID imsid FOUND IN RESPONSE TO GLOBAL /DIS MODIFY ALL

**Explanation:** IMS HP Sysgen Tools encountered an unexpected IMSID in the output of a global DIS MODIFY ALL command.

**System action:** The requested action fails.

**User response:** Contact IBM Software Support for assistance.

**Severity:** N/A
IOH6504E  GLOBAL ONLINE CHANGE REQUESTED IN LOCAL ONLINE CHANGE ENVIRONMENT

Explanation:  IMS HP Sysgen Tools attempted to perform a global online change for an IMS subsystem with local online change enabled.

System action:  The requested action fails.

User response:  Contact IBM Software Support for assistance.

Severity:  N/A

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IOH6521E  GLOBAL OLC PREPARE FAILED FOR IMS insid WITH CONDITION CODE rc

Explanation:  IMS HP Sysgen Tools issued a global online change INIT OLC PHASE(PREPARE) TYPE(MODBLKS) command, but received an unexpected return code, as shown in the message text.

System action:  The requested action fails.

User response:  Review the return code received, or contact IBM Software Support for assistance.

Severity:  N/A

---

IOH6522E  GLOBAL OLC COMMIT FAILED FOR IMS insid WITH CONDITION CODE rc

Explanation:  IMS HP Sysgen Tools issued a global online change INIT OLC PHASE(COMMIT) command, but received an unexpected return code, as shown in the message text.

System action:  The requested action fails.

User response:  Review the return code received, or contact IBM Software Support for assistance.

Severity:  N/A

---

IOH6523E  GLOBAL OLC TERM FAILED FOR IMS insid WITH CONDITION CODE rc

Explanation:  IMS HP Sysgen Tools issued a global online change TERM OLC command, but received an unexpected return code, as shown in the message text.

System action:  The requested action fails.

User response:  Review the return code received, or contact IBM Software Support for assistance.

Severity:  N/A

---

IOH6524E  GLOBAL OLC PREPARE HAS WORK PENDING FOR IMS insid

Explanation:  IMS HP Sysgen Tools encountered an unexpected work pending condition in a DIS MODIFY ALL command.

System action:  The requested action fails.

User response:  Review the return code received, or contact IBM Software Support for assistance.

Severity:  N/A

---

IOH7001E  MATRIX MODULE modname TABLE ID shows num type RESOURCES library

Explanation:  An inconsistent number of resources were defined in the MATRIX and either the MODBLKS or RESLIB data set.

System action:  Dummy resource names (one alphabetic character and a 7-digit number) are generated for names of the resource type that is shown in the message.

User response:  Verify that the MATRIX, MODBLKS, and RESLIB data sets in use by this reverse MATRIX process have consistent definitions. The MATRIX library must have been created by using the supplied MODBLKS and RESLIB data sets.

Severity:  N/A

---

IOH7004E  MATRIX MODULE modname TABLE ID has aaa-bbb type ENTRIES library

Explanation:  An inconsistent number of resources were defined in the MATRIX and either the MODBLKS or RESLIB data set.

System action:  Dummy resource names (one alphabetic character and a 7-digit number) are generated for names of the resource type that is shown in the message.

User response:  Verify that the MATRIX, MODBLKS, and RESLIB data sets in use by this reverse MATRIX process have consistent definitions. The MATRIX library must have been created by using the supplied MODBLKS and RESLIB data sets.

Severity:  N/A

---

IOH7101E  LOAD FAILED FOR module RC=nn ABCODE=code

Explanation:  An MVS LOAD macro failed due to the indicated return code and abend code.

System action:  The job fails.

User response:  Review the reason for the load failure. Ensure that the requested module is present in the STEPLIB data set for the job. Increase the region size.
that was specified if the job might have run out of private storage.

Severity: N/A

**IOH7102E**  
OPEN FAILED FOR DDNAME *ddname*  
RC=*nn*

**Explanation:** An MVS OPEN macro failed with the indicated return code.

**System action:** The job fails.

**User response:** Verify that an appropriate DD statement was specified for the indicated DD name. Review the job’s JESLOG for any indications of a security or other error that might have prevented the data set from opening.

Severity: N/A

**IOH7103E**  
CLOSE FAILED FOR DDNAME RC=*nn*

**Explanation:** An MVS CLOSE macro failed for the indicated DD name and return code.

**System action:** The job fails.

**User response:** Review the job’s JESLOG for any indications of a security or other error that might have prevented the data set from closing.

Severity: N/A

**IOH7104E**  
INVALID STATEMENT TYPE - *type*

**Explanation:** An invalid statement was encountered in the SYSIN statements.

**System action:** The statement is ignored.

**User response:** Review the statement in error. The statement must begin with an asterisk in column 1 (for a comment), or the first word on the line must be VERIFY or INSTALL. If the indicated statement was to be continued from a prior statement, ensure that a comma was specified at the end of the preceding line.

Severity: N/A

**IOH7105E**  
INVALID KEYWORD - *keyword*

**Explanation:** An unknown keyword was specified on a SYSIN statement.

**System action:** The statement is ignored.

**User response:** Review the statement to ensure that the keyword (either NAME= or IMSID=) was specified correctly.

Severity: N/A

**IOH7106E**  
INVALID VALUE SPECIFIED FOR KEYWORD *keyword* value

**Explanation:** An invalid value was found in a SYSIN statement for the indicated keyword.

**System action:** The statement is ignored.

**User response:** Review the value that was coded for the specified keyword and correct the error.

Severity: N/A

**IOH7107E**  
DUPLICATE SPECIFICATION OF KEYWORD *keyword*

**Explanation:** A statement in the SYSIN stream included a duplicate specification of the indicated keyword.

**System action:** The statement is ignored.

**User response:** Review the statement and remove the redundant specifications of the indicated keyword.

Severity: N/A

**IOH7108E**  
ERROR PARSING ABOVE STATEMENT

**Explanation:** A statement that was read from the SYSIN stream was invalid.

**System action:** The statement is ignored.

**User response:** Review the statement to determine the cause of the syntax error.

Severity: N/A

**IOH7109E**  
REQUIRED KEYWORD (IMSID OR NAME) NOT SPECIFIED

**Explanation:** A statement that was read from the SYSIN stream did not specify both the IMSID= and NAME= keywords.

**System action:** The statement is ignored.

**User response:** Review the statement, and supply both the IMSID= and NAME= keywords.

Severity: N/A

**IOH7110E**  
SECOND OPEN PAREN WITHOUT A CLOSE PAREN

**Explanation:** A second open parenthesis was encountered without the first open parentheses being closed. Nested parenthesis are not permitted.

**System action:** The statement is ignored.

**User response:** Verify that the parentheses that are specified on the statement are balanced. Note that nested parentheses are not permitted.

Severity: N/A
**IOH7111E**  
**CLOSE PAREN WITHOUT AN OPEN PAREN**

**Explanation:** A closing parenthesis was found before an open parenthesis was encountered.

**System action:** The statement is ignored.

**User response:** Verify that the parentheses that are specified on the statement are balanced.

**Severity:** N/A

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**IOH7112E**  
**CONTINUATION CARD EXPECTED-BLANK CARD FOUND**

**Explanation:** A blank line was encountered following a statement that indicated that it was continued.

**System action:** The statement is ignored.

**User response:** Remove the blank line that is embedded within a continued statement.

**Severity:** N/A

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**IOH7113E**  
**EXPECTED CONTINUATION CARD-NEW STATEMENT FOUND**

**Explanation:** A new statement was encountered when a continuation was expected.

**System action:** The prior statement is ignored.

**User response:** Ensure that the prior statement was complete. Complete the statement or remove any commas at the end of the line, and ensure that all open parentheses were closed.

**Severity:** N/A

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**IOH7114E**  
**UNEXPECTED OPEN PAREN ENCOUNTERED**

**Explanation:** An open parenthesis was encountered when it was not expected.

**System action:** The statement is ignored.

**User response:** Remove the extraneous open parenthesis.

**Severity:** N/A

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**IOH7115E**  
**MULTIPLE IMSID PARAMETERS NOT ALLOWED**

**Explanation:** More than one IMSID was specified on a statement. Only one IMSID can be specified.

**System action:** The statement is ignored.

**User response:** Ensure that the statement includes only a single IMSID specification in the IMSID= keyword value.

**Severity:** N/A

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**IOH7116E**  
**IMSID EXCEEDS 4 CHARACTERS**

**Explanation:** The IMSID value that was specified is not valid. IMSID lengths are limited to four bytes.

**System action:** The statement is ignored.

**User response:** Correct the specification of the IMSID= value.

**Severity:** N/A

---

**IOH7117E**  
**MORE THAN 256 UPDATE LIST NAMES WERE REQUESTED**

**Explanation:** More than the maximum number of resource update list names were specified in a single statement.

**System action:** The statement is ignored.

**User response:** Reduce the number of resource update list names that are specified in the NAME= specification so that less than 256 names are included.

**Severity:** N/A

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**IOH7118E**  
**ERROR IN STATEMENT TYPE FLAG**

**Explanation:** An error occurred while determining the statement type (verify or install) when the prior statement was being processed.

**System action:** The job abends.

**User response:** Contact IBM Software Support for assistance.

**Severity:** N/A

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**IOH7119E**  
**STATEMENT SKIPPED DUE TO PRIOR ERROR**

**Explanation:** An error occurred when the prior statement was being processed. The statement was ignored because of the error.

**System action:** The prior statement was ignored.

**User response:** Review other error messages describing the reason the statement was skipped.

**Severity:** N/A

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**IOH7120E**  
**BOTH IMSID AND TARGET WERE SPECIFIED-USE ONLY ONE OF THESE KEYWORDS**

**Explanation:** Both IMSID= and TARGET= keywords were found in an IOHBLIST job PARM field. These are mutually exclusive parameters.

**System action:** The job step ends.

**User response:** Update the PARM= field of the batch resource update list verify/install job step. Ensure that
either IMSID= or TARGET= was specified, but not both.

Severity: N/A

IOH7141E  BLDL FOR MEMBER member IN DDNAME IOHPDS FAILED WITH RETURN CODE nn

Explanation: An MVS BLDL macro returned an unexpected return code for the indicated member name.

System action: The request fails.

User response: Review the return code to determine the reason for the failure. Contact IBM Software Support for assistance.

Severity: N/A

IOH7142E  REQUESTED IOHPDS MEMBER member WAS NOT FOUND

Explanation: The indicated member name was not found in the IOHPDS data sets.

System action: The request fails.

User response: Ensure that the member name that was specified exists in the IOHPDS data sets that are specified in the job’s JCL.

Severity: N/A

IOH7143E  STOW FOR MEMBER member IN DDNAME IOHPDS FAILED WITH RETURN CODE nn

Explanation: An MVS STOW macro returned an unexpected return code.

System action: The member will not be updated with new status as a result of the statement that is being processed.

User response: Check the job’s JESLOG and the return code from the MVS STOW macro to determine the cause of the failure.

Severity: N/A

IOH7144E  REQUESTED RESOURCE UPDATE LIST(S) HAVE NO UPDATE ENTRIES

Explanation: The resource update lists that were requested in a VERIFY or INSTALL statement had no entries.

System action: The request is ignored.

User response: Ensure that a resource update list that contains at least one entry is specified on the statement.

Severity: N/A

IOH7150E  command COMMAND FAILED

Explanation: A VERIFY or INSTALL command failed.

System action: The request failed.

User response: Review the preceding error messages to determine the cause of the failure.

Severity: N/A
IOH7151I command COMMAND COMPLETED SUCCESSFULLY

Explanation: The indicated request has completed successfully.

System action: Processing continues.

User response: None. This message is informational.

Severity: N/A

IOH7152I ERROR IN STATEMENT TYPE FLAG

Explanation: An error occurred while determining the statement type (verify or install) when the prior statement was being processed.

System action: The job abends.

User response: Contact IBM Software Support for assistance.

Severity: N/A

IOH7153I RESOURCE UPDATE LIST ENTRIES:

Explanation: The lines that follow this message show the resource update list entries that will be processed by the statement.

System action: None.

User response: None. This message is informational.

Severity: N/A

IOH7154E FIND FOR MEMBER member IN DDNAME IOHPDS FAILED WITH RETURN CODE nn

Explanation: An MVS FIND macro failed with the indicated return code.

System action: The request fails.

User response: Verify that the indicated member name exists in the data sets that were specified for the IOHPDS DD statement.

Severity: N/A

IOH7155E AN ERROR OCCURRED READING MEMBER member -ERROR CODE code

Explanation: An error occurred while reading the indicated member of the IOHPDS data set.

System action: The request fails.

User response: Contact IBM Software Support for assistance.

Severity: N/A

IOH7201E AN ERROR OCCURRED CHECKING AN UPDATE LIST- AN UNKNOWN RESOURCE TYPE WAS ENCOUNTERED - xxxx

Explanation: An inconsistency was found while validating the resource update list contents in the APPC address space.

System action: The request fails.

User response: Ensure that the resource update lists in progress are valid. Contact IBM Software Support for assistance.

Severity: N/A

IOH7202E AN ERROR OCCURRED CHECKING AN UPDATE LIST- AN UNKNOWN FUNCTION WAS ENCOUNTERED - x

Explanation: An inconsistency was found while validating the resource update list contents in the APPC address space.

System action: The request fails.

User response: Ensure that the resource update lists in progress are valid. Contact IBM Software Support for assistance.

Severity: N/A

IOH7203E FIND FAILED FOR type name FOLLOWING INSTALLATION OF UPDATE LIST

Explanation: An error occurred finding the indicated resource while reviewing the results of the installation of a resource update list.

System action: Processing continues.

User response: Contact IBM Software Support for assistance.

Severity: N/A

IOH7204W ACBLIB MEMBER FOR NEW/UPDATED type name WAS NOT FOUND

Explanation: A resource that was updated or added in the resource update list did not have a valid ACBLIB member.

System action: Processing continues.

User response: The indicated resource did not have a valid ACBLIB member, and the resource is currently NOTINIT. Perform the appropriate ACBGEN and activate the updated ACBLIB members with an online change for ACBLIB.

Severity: N/A
IOH7205E  •  IOH7506E

IOH7205E  •  AN EMPTY RESOURCE UPDATE LIST WAS PRESENTED FOR INSTALL

Explanation: A resource that was updated or added in the resource update list did not have a valid ACBLIB member.

System action: The requested action fails.

User response: The indicated resource did not have a valid ACBLIB member, and the resource is currently NOTINIT. Perform the appropriate ACBGEN and activate the updated ACBLIB members with an online change for ACBLIB.

Severity: N/A

IOH7401E  •  IMS /CHANGE COMMAND RELOAD FUNCTION

Explanation: This is an informational message that appears the first time a reload request is encountered after an IMS control region restart.

System action: None.

User response: None. This message is informational.

Severity: N/A

IOH7402E  •  LOCATE FOR CVB /CHANGE FAILED

Explanation: IMS HP Sysgen Tools failed to locate the CVB control block associated with the /CHANGE command.

System action: The installation of the resource update list fails.

User response: This condition should not occur. Contact IBM Software Support for assistance.

Severity: N/A

IOH7403E  •  LOCATE FOR CDE OF MODULE name FAILED

Explanation: After loading module IOHICL6, IMS HP Sysgen Tools must locate the CDE associated with the module. The locate process for the CDE failed.

System action: The installation of the resource update list fails.

User response: This condition should not occur. Contact IBM Software Support for assistance.

Severity: N/A

IOH7501E  •  UNABLE TO SET /MODIFY BARRIER - IN USE

Explanation: An online change or display modify command was in progress when an ACBLIB reload was requested. The reload process used by IMS HP Sysgen Tools requires that no online change activity be in progress.

System action: The reload ACBLIB request fails.

User response: Ensure that an IMS online change is not in progress by using the /DIS MODIFY ALL or /MODIFY ABORT command. Retry installing the ACBLIB reload when an online change or display modify command is not in progress.

Severity: N/A

IOH7502E  •  UNABLE TO LOCATE IMS NUCLEUS

Explanation: In order to process an IMS ACBLIB reload request, IMS HP Sysgen Tools must locate the IMS nucleus that is loaded in the IMS control region address space. The CDE entry for the IMS nucleus was not found while scanning the CDE chain in the IMS address space.

System action: The reload ACBLIB request fails.

User response: This condition should not occur. Contact the IBM Software Support for assistance.

Severity: N/A

IOH7503E  •  UNABLE TO LOCATE DFSICVD0 OR DFSRM500

Explanation: IMS HP Sysgen Tools was unable to locate module DFSICVD0 or DFSRM500 in the IMS nucleus loaded in the IMS control region address space.

System action: The reload ACBLIB request fails.

User response: This condition should not occur. Contact IBM Software Support for assistance.

Severity: N/A

IOH7506E  •  BLDL FAILED FOR ACTIVE ACBLIB

Explanation: A DFSSTS macro requesting a BDL for the IMS ACBLIB for an ACBLIB reload request returned an unexpected return code of 8 or higher.

System action: The reload ACBLIB request fails.

User response: This condition should not occur. Contact IBM Software Support for assistance.
Severity: N/A

IOH7508E RELOAD FOR ACBLIB MEMBER xxxxxxxx FAILED-MEMBER NOT FOUND IN ACTIVE ACBLIB

Explanation: The indicated ACBLIB member was not found in the active ACBLIB data set.

System action: The reload ACBLIB request fails.

User response: Ensure that the member name to be reloaded, as shown in the message text, is present in the active ACBLIB data set concatenation before attempting to reload the ACBLIB member.

Severity: N/A

IOH7509E RELOAD OF type name FAILED - ACBLIB MEMBER reason.

Explanation: The reload process determined that the named ACBLIB member was not valid for the PSB or DBD being reloaded. The value for reason can be one of the following text:
- ACBLIB MEMBER NOT A PSB
- ACBLIB MEMBER IS NOTCP
- ACBLIB MEMBER NOT A DBD

System action: The reload ACBLIB request fails.

User response: Ensure that a valid ACBLIB member has been placed in the active ACBLIB data set before attempting to reload the ACBLIB member. The reason in the message indicates the inconsistency found with the member. It may be NOT A PSB or NOT A DBD, indicating that the member is not a valid ACBLIB member for a PSB or DBD. Or, it may be IS NOTCP, meaning that the ACBLIB member is not compatible with this release of IMS. For NOTCP, ensure that the ACBGEN that created the ACBLIB member was processed using the same SDFSRESL data set that the IMS control region is using.

Severity: N/A

IOH7512E DFSCBTS FIND FOR type FAILED-RC=RC

Explanation: The IMS DFSCBTS macro was unable to locate the PSB or DBD that was requested to be reloaded. The macro returned with the indicated return code.

System action: The reload ACBLIB request fails.

User response: This condition should not occur. Contact IBM Software Support for assistance.

Severity: N/A

IOH7513E ONLINE CHANGE IN PROGRESS

Explanation: An IMS online change was in progress when the ACBLIB RELOAD request was attempted during the installation of a resource update list.

System action: The reload ACBLIB request fails.

User response: Ensure that an IMS online change is not in progress, and run the ACBLIB RELOAD request again.

Severity: N/A

IOH7601I STORE/FORWARD PROCESSING

STARTED DATE-TIMExxx yyyy.ddd-hh:mm:ss.thmiju DSN=stfwd

Explanation: The REDO job started processing commands from the installation store/forward VSAM data set whose name is stfwd.

yyyy.ddd-hh:mm:ss.thmiju
- The date and time when the processing began.
- yyyy Is the year (0000 to 9999)
- ddd Is the day (000 to 366)
**IOH7602I**  
STORE/FORWARD PROCESSING COMPLETED  
DATE-TIME=yyyyy.dddd-hh:mm:ss.thmiju  

**Explanatory text:**  
The REDO job completed processing all relevant records from the store/forward data set. This message is issued when the highest return code from IOHBLIST is 0.

**yyyyy.dddd-hh:mm:ss**  
The date and time when the REDO processing was completed.

**yyyy**  
Is the year (0000 to 9999)

**dddd**  
Is the day (0000 to 9999)

**hh**  
Is the hour (0 to 23)

**mm**  
Is the minute (0 to 59)

**ss**  
Is the second (0 to 59)

**thmiju**  
Is the milli/second of a second (000000 - 999999)

**System action:** Processing continues.

**User response:** None. This message is informational.

---

**IOH7603I**  
RECORD: IMSID=imsid  
TIME=yyyyy.dddd-hh:mm:ss.thmiju  
CMD=I  
IOHPDS=iohpds  GROUP=group  

**Explanatory text:**  
The REDO job read a record whose key started with **imsid** from the store/forward data set. Each field of a store/forward record key is as follows:

- **imsid**  
The IMSID of the IMS to which the record applies.

**yyyyy.dddd-hh:mm:ss.thmiju**  
The date and time when the processing began. For details, see "IOH7601I" on page 330.

- **iohpds**  
The data set name of IOHPDS.

- **group**  
The name of the group.

For information about the record format of the store/forward data set, see Table 7 on page 52.

**System action:** Processing continues.

**User response:** None. This message is informational.

---

**IOH7604I**  
IOHBLIST COMPLETED  
TIME=yyyyy.dddd-hh:mm:ss.thmiju  
RC=rc  

**Explanatory text:**  
The REDO process completed for the job indicated in the previous IOH7603I message.

- **yyyyy.dddd-hh:mm:ss.thmiju**  
Indicates the date and time when IOHBLIST was completed. For details, see "IOH7601I" on page 330.

- **rc**  
The return code from the IOHBLIST call.

**System action:** Processing continues.

**User response:** None. This message is informational.

---

**IOH7605I**  
NO RECORDS FOUND ON STORE/FORWARD TO BE PROCESSED  

**Explanatory text:**  
The REDO job found no records in the store/forward data set for the IMS for which the job was about to process records.

**System action:** Processing continues.

**User response:** None. This message is informational.

---

**IOH7606E**  
IOHREDO CONTROL STATEMENT ERROR  

**Explanatory text:**  
There are one or more errors in the control statement for the REDO job.

**System action:** The REDO job terminates with a return code of 12.

**User response:** Correct the control statement and run the job again.

---

**IOH7608E**  
IMSID NOT FOUND ON IOHOPT  
IMSID=imsid  

**Explanatory text:**  
The REDO process was about to start for the job indicated in the previous IOH7603I message, but the IMSID **imsid** was not registered with IOHOPT.

**System action:** The REDO job terminates with a return code of 12.

**User response:** Correct the error, and run the job again.

---

**IOH7609E**  
STORE/FORWARD DOES NOT SUPPORT IMS OF GLOBAL ONLINE CHANGE IMSID=imsid  

**Explanatory text:**  
The REDO process was about to start for the job indicated in the previous IOH7603I message, but the processing was terminated because the IMS information about **imsid** in IOHOPT indicated that...
global online change was enabled for the IMS. The store/forward function does not support IMS systems that use global online change.

**System action:** The REDO job terminates with a return code of 12.

**User response:** It might be possible that the target IMS system, which had been configured as local online change at the time when the installation information was stored in the store/forward data set, was changed later to the global online change configuration. Investigate the status and run a normal install processing if installation is required.

When the problem is resolved, delete this entry from the store/forward data set by using, for example, the TSO ISPF editing function. For more information about how to delete an entry, see "Step 2: Installing the resource update list by running the REDO job" on page 52.

**IOH7610W**  
**STORE/FORWARD PROCESSING COMPLETED DATE-TIME=yyyy-ddd-hh:mm:ss IOHBLIST HIGHEST RC=rc**

**Explanation:** The REDO job completed processing all relevant records from the store/forward data set.

- **yyyy-ddd-hh:mm:ss**  
The date and time when the REDO processing was completed. For details, see "IOH7602I" on page 331.

- **rc**  
The highest return code from IOHBLIST. If IOHBLIST was not called, the rc value will be "N/A" (not applicable).

**System action:** Processing continues.

**User response:** One or more return codes from the IOHBLIST processing were not zero. See "IOH7604I" on page 331 and take an appropriate action.

If rc is "N/A", refer to other error messages and take an appropriate action.

**IOH7611E**  
**modulename WAS CALLED WITH INVALID PARAMETERS**

**Explanation:** Module modulename was called with invalid parameters.

**System action:** Processing terminates with abend code U4021.

**User response:** Contact the IBM Software Support for assistance.

**IOH7612E**  
**DDNAME ddname MISSING IN THE JCL**

**Explanation:** DDNAME ddname was not specified in the JCL.

**System action:** The job terminates with a return code of 12.

**User response:** Add the required DDNAME and rerun the job.

**IOH7614E**  
**INVALID RECORD FOUND IN STORE/FORWARD DATASET RSN=reason**

**Explanation:** The REDO job found an invalid record in the store/forward data set. reason can be one of the following:

- NO IOHPDS MEMBER
- MORE THAN 256 IOHPDS MEMBERS

**System action:** The job terminates with a return code of 12.

**User response:** Correct the error, and run the job again.

**IOH7621E**  
**IOHSTFWD DDNAME MISSING**

**Explanation:** The store/forward data set was not specified as DDNAME IOHSTFWD.

**System action:** The job terminates with a return code of 16.

**User response:** Add the required DDNAME and rerun the job.

**IOH7622E**  
**GENCB ACB1 ERROR**

**Explanation:** Store/forward data set initialization failed attempting to build VSAM control blocks. Additional error messages might be displayed on the z/OS Syslog.

**System action:** The job terminates abnormally.

**User response:** Correct any errors. If the problem persists, contact the IBM Software Support.

**IOH7623E**  
**GENCB RPL1 ERROR**

**Explanation:** Store/forward data set initialization failed attempting to build VSAM control blocks. Additional error messages might be displayed on the z/OS Syslog.

**System action:** The job terminates abnormally.
User response: Correct any errors. If the problem persists, contact the IBM Software Support.

IOH7624W  INSTALLATION STORE/FORWARD
DATA SET ALREADY INITIALIZED

Explanation: An attempt was made to initialize the store/forward data set, but the data set had already been initialized.

System action: The job terminates with a return code of 4.

User response: No action is required.

IOH7625E  STORE/FORWARD DATA SET INIT
ERROR RSN=reason

Explanation: An error was encountered attempting to initialize the store/forward data set.

reason can be one of the following:
  SHOWCB ERR
  MODCB ACB
  OPEN ERROR
  MODCB RPL
  PUT ERROR

System action: The job terminates abnormally.

User response: Correct the JCL for initializing the store/forward data set, and rerun the job. If the problem persists, contact the IBM Software Support.

IOH7626I  STORE/FORWARD DATA SET
INITIALIZATION SUCCESSFUL

Explanation: The store/forward data has been successfully initialized.

System action: Processing continues.

User response: None. This message is informational.
Chapter 21. ISPF messages (IOH[A-F])

Messages issued by the IMS HP Sysgen Tools ISPF interface have the format IOHAnnxx to IOHFnnnx, with the exception of IOHAGT004E, which is issued by the IMS sysgen process. Note that not all messages have a severity code.

Message format

IMS HP Sysgen Tools ISPF messages adhere to the following format:

IOH[A-F]nnnx

Where:

IOH[A-F]
  Indicates that the message was issued by IMS HP Sysgen Tools

nnn
  Indicates the message identification number

x
  Indicates the severity of the message:

  A   Indicates that operator intervention is required before processing can continue.
  E   Indicates that an error occurred, which might or might not require operator intervention.
  I   Indicates that the message is informational only.
  W   Indicates that the message is a warning to alert you to a possible error condition.

Each message also includes the following information:

Explanation:
The Explanation section explains what the message text means, why it occurred, and what its variables represent.

System action:
The System action section explains what the system will do in response to the event that triggered this message.

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

<table>
<thead>
<tr>
<th>IOHA001</th>
<th>INVALID COMMAND</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong> The command entered is not valid on this panel.</td>
<td></td>
</tr>
<tr>
<td><strong>System action:</strong> The request is ignored.</td>
<td></td>
</tr>
<tr>
<td><strong>User response:</strong> Review the valid commands listed on the panel and choose a valid command.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IOHA003</th>
<th>DATA CONVERSION ERROR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation:</strong> An error occurred converting a sysgen table variable to display format.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IOHA004</th>
<th>INVALID SORT COLUMN</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>System action:</strong> The request is stopped.</td>
<td></td>
</tr>
<tr>
<td><strong>User response:</strong> Retain the module name and operation type (read or write) as shown in the long version of this message (obtained by pressing the Help key (usually, PF1)). Contact IBM Software Support for assistance.</td>
<td></td>
</tr>
</tbody>
</table>
name specified was missing. You might specify a column name on this panel.

**System action:** The SORT command is ignored.

**User response:** Review the SORT column specified in the message, and provide a valid column name.

---

**IOHA005 INVALID LOCATE VALUE**

**Explanation:** The LOCATE command requires a single operand, which must be a value to which the list will be scrolled. The value is based on the current SORT column. The value specified for the LOCATE operand must match the type of the column. For a numeric SORT column, a numeric LOCATE value is required.

**System action:** The LOCATE command is ignored.

**User response:** Change the operand of the LOCATE command to a valid value for the current sort column.

---

**IOHA006 INVALID LINE COMMAND**

**Explanation:** The line command entered is not a valid line command on this panel.

**System action:** The line command is ignored.

**User response:** Review the list of valid line commands shown on the panel and use one of these values for the line command.

---

**IOHA007 INVALID LINE COMMAND**

**Explanation:** The line command entered is not a valid line command on this panel.

**System action:** The line command is ignored.

**User response:** Review the list of valid line commands shown on the panel and use one of these values for the line command.

---

**IOHA008 MISSING CMD VALUE**

**Explanation:** The primary command was entered without an operand. The command specified requires an operand.

**System action:** The command is ignored.

**User response:** Review the list of valid line commands shown on the panel and use one of these values for the line command.

---

**IOHA009 OPTIONS NOT SAVED**

**Explanation:** New IMSID options cannot be saved until IMS environment information is shown on screen two of the IMSID options setup screens.

**System action:** The new IMSID options module is not created.

**User response:** When you create a new IMSID, you must enter the required information about at least the first two screens.

---

**IOHA010 STOW FAILED**

**Explanation:** An MVS STOW operation failed. The long message (obtained by pressing the Help key (usually, PF1)) shows the member name, operation in progress and the return code and subcode.

**System action:** The operation is stopped.

**User response:** There could be a problem with the directory of the IOHPDS data set. Review the MVS SYSLOG on the system where the TSO user is logged on for any related message. Contact IBM Software Support for assistance.

---

**IOHA011 DIRECTORY SPACE ERROR**

**Explanation:** There is not sufficient directory space to add a new member to the IOHPDS data set.

**System action:** The operation is stopped.

**User response:** Allocate a new IOHPDS data set with more directory space or delete unused members of the IOHPDS data set.

---

**IOHA012 MEMBER EXISTS**

**Explanation:** An ADD command was specified with a member name that already exists.

**System action:** The new member is not created.

**User response:** When using the ADD command, ensure that the specified member name does not already exist.

---

**IOHA013 ENQ FAILED**

**Explanation:** An ADD command was specified with a member name that already exists.

**System action:** The operation fails.

**User response:** Obtain the additional information from the long version of this message by pressing the Help key (usually, PF1). Note the QNAME and RNAME and the ENQ return code. Review the MVS SYSLOG on the system where the TSO user is logged on for any related messages. Contact IBM Software Support for assistance.

---

**IOHA014 DATASET IN USE**

**Explanation:** An ENQ macro failed because the resource is in use.

**System action:** The action is stopped.

**User response:** Retry the operation. If this does not eliminate this message, determine the holder of the enqueue on the IOHPDS data set (QNAME IOHPDS01), and obtain documentation, such as a
dump, for the holder of the enqueue.

---

**IOHA015  INVALID NEW NAME**

**Explanation:** The specified new member name already exists.

**System action:** The action is stopped.

**User response:** Change the new member name to a name that does not already exist.

---

**IOHA016  FIND FAILED**

**Explanation:** An MVS FIND failed.

**System action:** The request is stopped.

**User response:** Obtain diagnostic information from the long message by pressing the Help key (usually, PF1). The member name, return code and reason code are provided. Review the MVS SYSLOG on the system where the TSO user is logged on for any related messages. Contact IBM Software Support for assistance.

---

**IOHA017  ERROR READING LIST**

**Explanation:** An error occurred reading the resource update list from the IOHPDS data set.

**System action:** The request fails.

**User response:** Obtain the error code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.

---

**IOHA018  ERROR WRITING LIST**

**Explanation:** An error occurred writing the resource update list from the IOHPDS data set.

**System action:** The request is stopped.

**User response:** Obtain the error code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.

---

**IOHA019  NOTE FAILED**

**Explanation:** An MVS NOTE operation failed.

**System action:** The request is stopped.

**User response:** Obtain the NOTE return code and subcode as well as the member being written, from the long version of this message by pressing the Help key (usually, PF1). Review the MVS SYSLOG on the system where the TSO user is logged on for any related messages. Contact IBM Software Support for assistance.

---

**IOHA020  BLDL FAILED**

**Explanation:** An MVS BLDL operation failed.

**System action:** The request is stopped.

**User response:** Obtain the BLDL return code and member name from the long version of this message by pressing the Help key (usually, PF1). Review the MVS SYSLOG on the system where the TSO user is logged on for any related messages. Contact IBM Software Support for assistance.

---

**IOHA021  DELETE FAILED**

**Explanation:** An MVS DELETE macro failed.

**System action:** The operation fails.

**User response:** Obtain the module name and return code from the long version of this message by pressing the Help key (usually, PF1). Review the MVS SYSLOG on the system where the TSO user is logged on for any related messages. Contact IBM Software Support for assistance.

---

**IOHA022  IOHPDS DS Invalid**

**Explanation:** The specified IOHPDS data set is not a valid IOHPDS data set. IOHPDS must have DSORG=PO,RECFM=VB,LRECL=256.

**System action:** The request fails.

**User response:** Specify the data set name of a valid IOHPDS data set on the IMS HP Sysgen Tools ISPF primary options menu.

---

**IOHA023  RESOURCE NOT FOUND**

**Explanation:** The resource was not found. This might be as a result of a COPY command or as a result of entering an invalid resource name for an UPDATE or DELETE resource list entry.

**System action:** The request is stopped.

**User response:** Provide a valid resource name.

---

**IOHA024  MISSING NAME**

**Explanation:** The COPY command was entered without an operand. An operand that is the name of an existing resource, must be supplied following the command.

**System action:** The request is stopped.

**User response:** Specify a resource name to copy.
IOHA025  GETMAIN FAILED
Explanation: An MVS GETMAIN failed.
System action: The operation fails.
User response: Obtain the failing module name and return code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.

IOHA026  FREEMAIN FAILED
Explanation: An MVS FREEMAIN macro failed.
System action: The operation fails.
User response: Obtain the failing module name and return code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.

IOHA027  FUNCTION FAILED
Explanation: The IOHPDS member processing module returned an unexpected return code.
System action: The function fails.
User response: Obtain the return code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.

IOHA028  NAME/TOKEN Svc FAILED
Explanation: An MVS name/token service module failed.
System action: The request fails.
User response: Obtain the name/token service name and return code from the long version of this message by pressing the Help key (usually, PF1). Review the MVS SYSLOG on the system where the TSO user is logged on for any related messages. Contact IBM Software Support for assistance.

IOHA029  DATA CONVERSION ERROR
Explanation: An MVS date conversion routine failed with an unexpected return code.
System action: The date being converted from internal format to displayable format will display as blank.
User response: Use the Help key (PF1) to retrieve the full form of this message in order to find the name of the conversion macro, return code, and member name involved in the error. Contact the IBM Software Support for further assistance.

IOHA030  INTERNAL ERROR
Explanation: Module IOHDCB was invoked with an invalid parameter list.
System action: The operation fails.
User response: Obtain the error code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.

IOHA031  INVALID OPTION
Explanation: The MODBLKS and RDDS options are not valid for randomizers. You must select INCORE to view randomizers.
System action: The request is rejected.
User response: Select the INCORE option when requesting a list of DEDB randomizer names.

IOHA032  NO DATA TO DISPLAY
Explanation: There were no IMS HP Sysgen Tools log records that meet the date criteria; therefore, there were no macros to display.
System action: None.
User response: None.

IOHA033  SELECT ONLY 1 DEF TYPE
Explanation: Both MODBLKS and Online definition types were selected. Select only one definition type.
System action: The request is not processed.
User response: Correct the option that was specified on the View selection panel. Select either ONLINE or MODBLKS, but not both.

IOHA034  SELECT A DEFINITION TYPE
Explanation: You must select either INCORE or MODBLKS definitions to display.
System action: The request is not processed.
User response: Correct the option that was specified on the View selection panel. Select either ONLINE or MODBLKS.

IOHA035  SELECT RESOURCE TYPES
Explanation: You must select one or both resource types to include in the reverse process. Enter a non-blank character next to all the resource types that you want to include.
System action: The request is not processed.
User response: Correct the option that was specified on the reverse sysgen panel. Select one or both resource
types to reverse (database or program/transaction/route code).

**IOHA036 INVALID JULIAN DATE**

**Explanation:** You must supply a valid Julian date for the start and stop dates. Julian dates must be entered in the YYYY.DDD format.

**System action:** The request is rejected.

**User response:** Enter a valid Julian date in both the start and stop date fields.

**IOHA037 MISSING RECORD TYPES**

**Explanation:** When you use option 1, you must select at least one history log record type.

**System action:** Missing Record Types.

**User response:** The request is rejected.

**IOHA038 NO RESOURCES DEFINED**

**Explanation:** No resources of the type requested are defined in the target IMS system.

**System action:** None.

**User response:** Select a resource type that is used in the target IMS system.

**IOHA040 MESSAGE ERROR**

**Explanation:** The BRIF service requested a message that exceeded the number of error messages.

**System action:** The action is stopped.

**User response:** Contact IBM Software Support for assistance.

**IOHA041 MESSAGE ERROR**

**Explanation:** A message of invalid length was received in the module name indicated in the long form of the message.

**System action:** The request is stopped.

**User response:** Contact IBM Software Support for assistance.

**IOHA042 RESPONSE ERROR**

**Explanation:** The response from an APPC transaction did not have a response type specified.

**System action:** The request is stopped.

**User response:** Contact IBM Software Support for assistance.

**IOHA060 INVALID GROUP MODULE**

**Explanation:** The group definition module on the system where the TSO user or batch job is running is not a valid group module.

**System action:** The request fails.

**User response:** Ensure that the group name specified is a valid group name and that the module in the IOHOPT data set is a valid group module.

**IOHA061 INVALID GROUP MODULE**

**Explanation:** The group definition module on the system where the IMS subsystem is running is not a valid group module.

**System action:** The request fails.

**User response:** Ensure that the group name specified is a valid group name and that the module in the IOHOPT data set is a valid group module.

**IOHA062 GROUP MODULE NOT FOUND**

**Explanation:** The group definition module on the system where the TSO user or batch job is running was not found in the IOHOPT data set.

**System action:** The request fails.

**User response:** Enter a valid IMS HP Sysgen Tools group name.

**IOHA063 GROUP MODULE NOT FOUND**

**Explanation:** The group definition module on the system where IMS is running was not found in the IOHOPT data set.

**System action:** The request fails.

**User response:** Enter a valid IMS HP Sysgen Tools group name.

**IOHA064 INVALID OPTIONS MODULE**

**Explanation:** Validation of the options module read from the IOHOPT data set failed.

**System action:** The request is stopped.

**User response:** Contact IBM Software Support for assistance.

**IOHA065 INVALID OPTIONS MODULE**

**Explanation:** Validation of the options module read from the IOHOPT data set failed.

**System action:** The request is stopped.

**User response:** Verify that the options member in the IOHOPT data set for the specified IMSID is valid. The
options member in this request was read from the IOHOPT data set on the MVS system where the IMS control region is running. Contact IBM Software Support for assistance.

---

**IOHA067  IMSID OPTIONS NOT FOUND**

**Explanation:** The IMSID options module on the system where the TSO user or batch job is running was not found in the IOHOPT data set.

**System action:** The request fails.

**User response:** Enter an IMSID that is defined to IMS HP Sysgen Tools. You can review which IMSIDs are defined to IMS HP Sysgen Tools by selecting the Setup option on the IMS HP Sysgen Tools Primary Options menu.

---

**IOHA068  IMSID OPTIONS NOT FOUND**

**Explanation:** The IMSID options module on the system where IMS is running was not found in the IOHOPT data set.

**System action:** The request fails.

**User response:** Enter an IMSID that is defined to IMS HP Sysgen Tools. You can review which IMSIDs are defined to IMS HP Sysgen Tools by selecting the Setup option on the IMS HP Sysgen Tools Primary Options menu.

---

**IOHA070  IOHTIME PARAMETER ERROR**

**Explanation:** An invalid parameter was passed to module IOHTIME.

**System action:** The request is rejected.

**User response:** Contact the IBM Support Center for assistance.

---

**IOHA071  TIME macro ERROR**

**Explanation:** The MVS TIME macro returned with an unexpected return code.

**System action:** The request is rejected.

**User response:** Use the Help key (PF1) to retrieve the full form of this message in order to obtain the return code from the MVS TIME macro. Contact the IBM Software Support for further assistance.

---

**IOHA072  DATA CONVERSION ERROR**

**Explanation:** The MVS TIME macro returned with an unexpected return code.

**System action:** The date being converted from internal format to displayable format will display as blank.

**User response:** Use the Help key (PF1) to retrieve the full form of this message in order to find the name of the conversion macro and return code. Contact the IBM Support Center for further assistance.

---

**IOHA080  INVALID RESOURCE FOR REL**

**Explanation:** The resource type selected is invalid for a RELOAD request. Only programs or databases can be reloaded.

**System action:** None.

**User response:** Correct the value specified for resource type.

---

**IOHA081  COMMAND ERROR**

**Explanation:** There was an error locating the IMS HP Sysgen Tools BMP PSB. The address found was invalid or missing.

**System action:** Processing stops.

**User response:** Contact IBM Software Support for assistance.

---

**IOHA100  INVALID LENGTH**

**Explanation:** The length specified is invalid. It must be a valid hexadecimal number between 1 and 1M.

**System action:** The request fails.

**User response:** Enter a valid hexadecimal number in the length field.

---

**IOHA101  INVALID REGION ID**

**Explanation:** The region ID entered is not valid. Specify one of the listed region IDs.

**System action:** The request fails.

**User response:** Enter a valid region ID - either IMS, DLISAS, or DBRC.

---

**IOHA102  MULTIPLE SELECTS**

**Explanation:** More than one field was selected. Select only one field.

**System action:** The request fails.

**User response:** Remove entries from all but one selection field.

---

**IOHA103  MODULE ERROR**

**Explanation:** An error occurred processing the selected module. This is a software problem and should be reported to IBM Software Support.

**System action:** The request fails.

**User response:** Contact IBM Software Support for assistance.
IOHA104  INVALID SELECT CHARACTER
Explanation: Use a valid line/field selection character.
System action: The request fails.
User response: Enter a valid selection character. On the storage request panel, this is a D or an S. On the storage display panel, this is a percent sign (%) or a question mark (?).

IOHA105  INVALID REQUEST FIELD
Explanation: The request field is missing or contains a syntax error.
System action: The request fails.
User response: Enter a valid value for the address field. See "Specifying an address" on page 105 for details on specifying the address field.

IOHA106  INVALID COMMAND
Explanation: The command entered is not valid.
System action: The request fails.
User response: Correct or remove the entry in the Command field.

IOHA107  ZAP COMPLETE
Explanation: Storage updates have been installed.
System action: The request fails.
User response: None.

IOHA108  INVALID VALUE
Explanation: The updated storage value is not valid. The values must be 0-9 or A-F.
System action: The request fails.
User response: Correct the value entered in the storage area. The value must be a valid hexadecimal number.

IOHA109  TOO MUCH DATA
Explanation: More storage was entered on the ZAP panel than was originally displayed. Excess was deleted.
System action: The request fails.
User response: Ensure that you only enter updated storage information for storage values that were originally displayed on the panel. You cannot add storage by entering additional data at the end of the display.

IOHA110  INVALID REGION ID
Explanation: The region ID encoded in the APPC message was invalid.
System action: The request fails.
User response: Contact IBM Software Support for assistance.

IOHA111  ALESERV FAILURE
Explanation: An ALESERV macro, which ran in the APPC address space, received an unexpected return code.
System action: The request fails.
User response: Retrieve the long form of this message by pressing the Help key (usually, PF1) to retrieve the ALESERV function and return code. Contact IBM Software Support for assistance.

IOHA112  INVALID ADDRESS
Explanation: The address space was not valid.
System action: The request fails.
User response: Enter a valid value for the address field. See "Specifying an address" on page 105 for details on specifying the address field.

IOHA113  SYNTAX ERROR IN REQUEST
Explanation: The name included in the request was not valid.
System action: The request fails.
User response: Retrieve the long form of this message by pressing the Help key (usually, PF1) to retrieve the invalid name. Enter a valid value for the address field. See "Specifying an address" on page 105 for details on specifying the address field.

IOHA114  NOT FOUND
Explanation: The requested control block was not found.
System action: The request fails.
User response: The name specified for a control block request was not found. Enter a valid control block name or number.

IOHA115  SYNTAX ERROR
Explanation: The requested control block was not found.
System action: The request fails.
User response: Enter a valid value for the address field. See "Specifying an address" on page 105 for...
details on specifying the address field.

---

**IOHA116  MODULE LIST TOO LARGE**

**Explanation:** The module list exceeded the space available to return in the APPC message.

**System action:** The request fails.

**User response:** Contact IBM Software Support for assistance.

---

**IOHA117  REQUEST INVALID**

**Explanation:** The request received in the APPC address space contained a value of 0 for the address length.

**System action:** The request fails.

**User response:** Ensure that a valid address and length were specified on the request panel. Contact IBM Software Support for assistance.

---

**IOHA118  STORAGE NOT AVAILABLE**

**Explanation:** The requested storage is not available because it has not been obtained by the GETMAIN macro.

**System action:** The request fails.

**User response:** The value specified for the address field was not valid because the address requested was not available. Correct the address field so that it specifies a valid value.

---

**IOHA119  ZAP REQUEST CANCELLED**

**Explanation:** The ZAP process has been canceled.

**System action:** The request fails.

**User response:** None.

---

**IOHA120  VSMLIST FAILED**

**Explanation:** A VSMLIST macro received an unexpected return code.

**System action:** The request fails.

**User response:** Retrieve the long form of this message by pressing the Help key (usually PF1) to retrieve the VSMLIST function and return code. Contact IBM Software Support for assistance.

---

**IOHA121  ERROR PROCESSING VSMLIST**

**Explanation:** An error occurred during processing of the output of the VSMLIST macro.

**System action:** The request fails.

**User response:** Contact IBM Software Support for assistance.

---

**IOHA130  OPTION INVALID**

**Explanation:** The option entered is not a valid option on this panel.

**System action:** The request is ignored.

**User response:** Enter a valid option as shown on the panel.

---

**IOHA131  OPTION DATA SET REQUIRED**

**Explanation:** The options data set name entered on the panel is invalid or missing.

**System action:** The request is ignored.

**User response:** Enter a valid IMS HP Sysgen Tools IOHOPT data set name.

---

**IOHA132  INVALID COMMAND**

**Explanation:** The command entered was invalid or was missing the operand of the command (such as an IMSID or group name).

**System action:** The request is ignored.

**User response:** Enter a valid command, either S (Select) or D (Delete). Include the IMSID or group name after the command, for example: S IMSA.

---

**IOHA133  GROUP/IMSID MISSING**

**Explanation:** The command entered was invalid or was missing the operand of the command (such as an IMSID or group name).

**System action:** The request is ignored.

**User response:** Enter a valid command, either S (Select) or D (Delete). Include the IMSID or group name after the command, for example: S IMSA.

---

**IOHA134  INVALID IMSID**

**Explanation:** The IMSID specified on the S (Select) or D (Delete) command was longer than 4 characters. IMSIDs can be a maximum of 4 characters.

**System action:** The request is ignored.

**User response:** Enter a valid IMSID.

---

**IOHA135  INVALID LINE COMMAND**

**Explanation:** The line command entered is not valid on this panel. Enter S to select the entry, or D to delete the entry.

**System action:** The request is ignored.

**User response:** Enter a valid line command, either S (Select) or D (Delete).
**IOHA136**  
**ENTRY NOT FOUND**  
**Explanation:** The entry name specified on the delete command was not found in the IOHOPT data set.  
**System action:** The request is ignored.  
**User response:** Enter the name of an existing IMSID when entering the delete command.

**IOHA137**  
**DSN REQUEST FAILED**  
**Explanation:** The attempt to gather data set name information from the IMS control region failed.  
**System action:** The request fails.  
**User response:** An error occurred in the IMS HP Sysgen Tools APPC transaction program. For additional HP Sysgen error messages that indicate the reason for the failure, review the MVS SYSLOG on the system where IMS is running.

**IOHA140**  
**IMSID imsid ADDED**  
**Explanation:** The requested IMSID options module was added to the IOHOPT data set.  
**System action:** None.  
**User response:** None.

**IOHA141**  
**IMSID imsid DELETED**  
**Explanation:** The requested IMSID options module was deleted from the IOHOPT data set.  
**System action:** None.  
**User response:** None.

**IOHA142**  
**IMSID imsid UPDATED**  
**Explanation:** The requested IMSID options module was updated in the IOHOPT data set.  
**System action:** None.  
**User response:** None.

**IOHA143**  
**GROUP name UPDATED**  
**Explanation:** The requested group definition was updated in the IOHOPT data set.  
**System action:** None.  
**User response:** None.

**IOHA144**  
**GROUP name DELETED**  
**Explanation:** The requested group definition was deleted from the IOHOPT data set.  
**System action:** None.  
**User response:** None.

**IOHA145**  
**GROUP name ADDED**  
**Explanation:** The requested group definition was added to the IOHOPT data set.  
**System action:** None.  
**User response:** None.

**IOHA146**  
**Too few IMSIDs selected**  
**Explanation:** A group definition must have two or more IMSIDs. You must select at least two IMSIDs or use the CANCEL command to cancel editing a group.  
**System action:** The IMS group is not saved.  
**User response:** Select at least two IMSIDs from the selection list.

**IOHA147**  
**INVALID COMMAND**  
**Explanation:** The command entered on the command line is not valid on this panel. Only the **CANCEL** command is valid.  
**System action:** The request is ignored.  
**User response:** Remove the command from the command line, or enter a valid command.

**IOHA148**  
**IMSID Update Canceled**  
**Explanation:** The editing of IMSID options was canceled by user request.  
**System action:** Any changes to IMSID options are not saved.  
**User response:** None.

**IOHA149**  
**Group Name Invalid**  
**Explanation:** The requested group name is not valid. Group names cannot start with IOH.  
**System action:** The request to create an IMS group is ignored.  
**User response:** To create a new IMS group, specify a name that does not begin with the letters IOH.

**IOHA150**  
**ERROR-INSTALL IN PROGRESS**  
**Explanation:** An install is currently in progress for the IMS subsystem.  
**System action:** The request is ignored.  
**User response:** Try the request again. If the condition persists, determine whether there is an IMS online change in progress.
**IOHA151**  
**ENQUEUE FAILED**

**Explanation:** An MVS ENQ request failed in module IOHZMAIN.

**System action:** The request is ignored.

**User response:** Find the MVS ENQ return code from the long form of the message by pressing the Help key (usually, PF1). Contact IBM Software Support for additional assistance.

**IOHA160**  
**NO IMS SYSGEN SOURCE**

**Explanation:** IMSID options do not have any sysgen source data sets specified.

**System action:** The request is ignored.

**User response:** In order to perform the selected function, the IMS sysgen source data sets must be specified in the IMSID options. Update IMSID options to include the appropriate IMS sysgen source libraries.

**IOHA161**  
**NO IMS SECURITY SOURCE**

**Explanation:** IMSID options do not have any IMS security gen source data sets specified.

**System action:** The request is ignored.

**User response:** In order to perform a security gen, the IMS security gen source data sets must be specified in the IMSID options. Update the IMSID options to include the appropriate IMS security gen source libraries, or perform only an IMS sysgen instead of a sysgen and a security gen.

**IOHA162**  
**TARGET NOT FOUND**

**Explanation:** The requested target name was not found defined in the IOHOPT data set as either an IMSID or a group name.

**System action:** The request is ignored.

**User response:** Enter a valid target name. You must specify the name of an IMSID or group that is present in the IOHOPT data set.

**IOHA163**  
**TARGET NOT FOUND**

**Explanation:** The IMS HP Sysgen Tools APPC transaction program was unable to locate the required IMSID options module.

**System action:** The request is ignored.

**User response:** Ensure that the IMSID options module for the IMS subsystem is present on the MVS system where IMS is running. If the options module is present, review the MVS SYSLOG for possible error messages indicating the reason for the failure.

**IOHA164**  
**INTERNAL ERROR**

**Explanation:** An invalid parameter was passed to module IOHXAPPC. A blank or invalid SYMDEST was supplied.

**System action:** The request is ignored.

**User response:** Contact IBM Software Support for assistance.

**IOHA165**  
**INTERNAL ERROR**

**Explanation:** An invalid parameter was passed to module IOHXAPPC. The request byte did not indicate whether a name or SYMDEST was supplied.

**System action:** The request is ignored.

**User response:** Contact IBM Software Support for assistance.

**IOHA166**  
**INTERNAL ERROR**

**Explanation:** A request to identify the type of the target name failed. This is an internal error.

**System action:** The request is ignored.

**User response:** Contact IBM Software Support for assistance.

**IOHA167**  
**INTERNAL ERROR**

**Explanation:** Unable to locate the ECB that was posted. This is an internal error.

**System action:** The request is ignored.

**User response:** Contact IBM Software Support for assistance.

**IOHA170**  
**IOHOPT BLKSIZE TOO SMALL**

**Explanation:** The block size of the IOHOPT data set is too small. It should be allocated with a block size greater than 4096.

**System action:** The request is ignored.

**User response:** Ensure that the block size of the IOHOPT data set is at least 4096 bytes.

**IOHA181**  
**DELETE FAILED**

**Explanation:** An MVS DELETE by an IMS HP Sysgen Tools APPC transaction program failed.

**System action:** The requested action fails.

**User response:** Review the MVS SYSLOG on the MVS system where the IMS subsystem is running for additional error messages that may indicate the cause of the error. The long form of this message indicates the module name in addition to the return code or the abend code, or both, for which the MVS DELETE
macro experienced the error.

IOHA182  LOAD FAILED
Explanation: An MVS LOAD by an IMS HP Sysgen Tools APPC transaction program failed.
System action: The requested action fails.
User response: Review the MVS SYSLOG on the MVS system where the IMS subsystem is running for additional error messages that may indicate the cause of the error. The long form of this message indicates the module name in addition to the return code or the abend code, or both, for which the MVS LOAD macro experienced the error.

IOHA190  OLCSTAT ERROR
Explanation: An error occurred while parsing the contents of the OLCSTAT data set.
System action: The requested action fails.
User response: Ensure that the OLCSTAT data set has not been corrupted. Contact IBM Software Support for additional assistance.

IOHA200  PROFILE name ADDED
Explanation: The requested Profile name was added to the IOHOPT data set with the defaults and options you specified.
System action: None.
User response: None.

IOHA201  PROFILE name DELETED
Explanation: The requested Profile name was removed from the IOHOPT data set.
System action: None.
User response: None.

IOHA202  IMSID name UPDATED
Explanation: The requested Profile name was updated in the IOHOPT data set.
System action: None.
User response: None.

IOHA203  USER name UPDATED
Explanation: The requested user definition was updated in the IOHOPT data set.
System action: None.
User response: None.

IOHA204  USER name DELETED
Explanation: The requested user definition was deleted from the IOHOPT data set.
System action: None.
User response: None.

IOHA205  USER name ADDED
Explanation: The requested user definition was added to the IOHOPT data set.
System action: None.
User response: None.

IOHA207  INVALID OPTIONS MODULE
System action: The request fails.
User response: Press the Help key (usually PF1) to obtain the module name from the long version of this message. Ensure that the IOHOPT data set is properly allocated and that no error(s) occurred loading the specified options module.

IOHA208  INVALID PROFILE NAME
Explanation: The profile name you requested to be deleted was not found.
System action: The request fails.
User response: Specify a valid profile name to delete.

IOHA209  INTERNAL ERROR
Explanation: A table row counter did not agree with the number of rows present in the table.
System action: The request fails.
User response: Press the Help key (usually PF1) to see the long version of this message in order to obtain the table name that experienced the problem. Contact the IBM Software Support for further assistance.

IOHA210  INVALID USER NAME
Explanation: The user name you requested to be deleted was not found.
System action: The request fails.
User response: Specify a valid user name to delete.
IOHA211 • PROFILE IN USE
Explanation: You attempted to delete a profile entry that was still being used by at least one user entry.
System action: The request fails.
User response: Press the Help key (usually PF1) to see the long version of this message in order to obtain the user name and profile name that are in error. Change the user entry to specify a valid profile entry.

IOHA212 • INVALID PROFILE NAME
Explanation: The profile name you specified was not found.
System action: The request fails.
User response: Specify a valid profile name.

IOHA213 • INVALID USER PROFILE
Explanation: The authorization profile associated with your user ID contains an invalid profile name.
System action: The request fails.
User response: Press the Help key (usually PF1), to view the long version of this message in order to obtain the user name and profile name that are in error. Change the user entry to specify a valid profile entry.

IOHA214 • PROFILE name SELECTED
Explanation: The default values and the authorization to update resource attributes that are associated with your User ID was obtained from the named profile.
System action: None.
User response: None.

IOHA215 • USER NAME ALREADY DEFINED
Explanation: The user name you are trying to add is already defined in the user entries.
System action: The request fails.
User response: Either change the user entry name or edit the existing user entry that is already defined with the user entry name.

IOHA216 • MOVE COMMAND CONFLICT
Explanation: Either more than one line was selected with the M command or more than one line was selected with either the B or A command.
System action: The request fails.
User response: Ensure that you select only one entry to move with the MOVE (M) command and only 1 line with either the BEFORE (B) or AFTER (A) command.

IOHA217 • NOT AUTHORIZED
Explanation: You are not authorized to view IMS HP Sysgen Tools authorization profiles (Profiles or Users).
System action: The request fails.
User response: Contact your system administrator to gain access to security profile IOH.SETUP in class FACILITY.

IOHA218 • AUTHORIZATION ERROR
Explanation: An error occurred while checking your authorization to view profiles and users. An AUTH request for IOH.SETUP in class FACILITY received an unexpected SAF return code.
System action: The request fails.
User response: Press the Help key (usually PF1), to obtain the SAF return code from the long version of this message. Contact the IBM Software Support for further assistance.

IOHA220 • DRD NOT ACTIVE
Explanation: DRD is not active in the target IMS system.
System action: The request fails.
User response: Do not request DRD-specific information from an IMS system that does not have DRD enabled.

IOHA221 • THE RRDS HAS AN INCORRECT IMSID IN THE HEADER RECORD - xxxx
Explanation: An error occurred in the requested RDDS (or the current RDDS). The IMSID that is in the header record does not match the current IMSID.
System action: The request fails.
User response: If you specified an RDDS name, ensure that the correct data set name was entered. For other requests, review the system RDDSs to ensure that RDDSs are not being used by more than one IMS system.

IOHA222 • THE RRDS HAS AN INVALID STATUS IN THE HEADER RECORD - xxxx
Explanation: IMS HP Sysgen Tools encountered an unexpected status in the RDDS header record.
System action: The request fails.
User response: Review the status in the message text. If this status is valid, contact IBM Software Support.
IOHA223  THE RDDS IS NOT A SYSTEM RDDS
Explanation: IMS HP Sysgen Tools encountered a non-system RDDS. Only system RDDSs are reviewed by IMS HP Sysgen Tools.
System action: The request fails.
User response: If you specified an RDDS name, ensure that the correct data set name was entered. For other requests, review the system RDDSs to ensure that RDDSs are not being used by more than one IMS system.

IOHA224  THE VERSION NUMBER IN THE RDDS HEADER RECORD IS UNKNOWN
Explanation: The RDDS version number in the header record of the RDDS was not expected.
System action: The request fails.
User response: Contact IBM Software Support.

IOHA225  RDDS DATA SET HAS NO RECORDS
Explanation: IMS HP Sysgen Tools encountered an invalid resource definition data set (RDDS).
System action: The request fails.
User response: If you specified an RDDS name, ensure that the correct data set name was entered. For other requests, review the system RDDSs to ensure that the RDDSs are valid.

IOHA226  RDDS DOES NOT HAVE A VALID HEADER RECORD
Explanation: IMS HP Sysgen Tools encountered an invalid resource definition data set (RDDS).
System action: The request fails.
User response: If you specified an RDDS name, ensure that the correct data set name was entered. For other requests, review the system RDDSs to ensure that the RDDSs are valid.

IOHA227  THE RDDS CONTAINED AN UNEXPECTED RECORD TYPE XXXX
Explanation: IMS HP Sysgen Tools encountered a resource definition data set (RDDS) that contained a record type that was not expected in an RDDS. The record type is included in the message text.
System action: The request fails.
User response: If you specified an RDDS name, ensure that the correct data set name was entered. For other requests, review the system RDDSs to ensure that the RDDSs are valid.

IOHA228  IMS uses over 24 RDDS DSNs
Explanation: IMS HP Sysgen Tools expects 24 or less IMS system RDDSs per IMS system. The target IMS system has more than 24 system RDDSs defined.
System action: The request fails.
User response: Contact IBM Software Support if you require more than 24 system RDDSs.

IOHA229  No RDDS data sets found
Explanation: The target IMS system is not running, and the IMSID options for the target IMS system indicates that DRD is not active.
System action: The request fails.
User response: Try the request again when IMS is available.

IOHA230  Too many rows selected
Explanation: IMS HP Sysgen Tools allows you to select only one RDDS at a time.
System action: The request fails.
User response: Select only one RDDS.

IOHA231  No valid RDDS found
Explanation: None of the RDDSs retained in the IMSID setup options are valid. Update the IMSID options when IMS is available.
System action: The request fails.
User response: Update the IMSID setup options when IMS is active or try the request again when IMS is available.

IOHB000  ISPF VDEFINE FAILED
Explanation: A request to run the ISPF VDEFINE service returned an unexpected return code.
System action: The requested action fails.
User response: Obtain the module name and return code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.

IOHB001  ISPF DISPLAY FAILED
Explanation: A request to run the ISPF DISPLAY service returned an unexpected return code.
System action: The requested action fails.
User response: Obtain the module name and return code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.
IOHB002  ISPF SETMSG FAILED
Explanation: A request to run the ISPF SETMSG service returned an unexpected return code.
System action: The requested action fails.
User response: Obtain the module name and return code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.

IOHB003  ISPF TBEND FAILED
Explanation: A request to run the ISPF TBEND service returned an unexpected return code.
System action: The requested action fails.
User response: Obtain the module name and return code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.

IOHB004  ISPF TBCREATE FAILED
Explanation: A request to run the ISPF TBCREATE service returned an unexpected return code.
System action: The requested action fails.
User response: Obtain the module name and return code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.

IOHB005  ISPF TBADD FAILED
Explanation: A request to run the ISPF TBADD service returned an unexpected return code.
System action: The requested action fails.
User response: Obtain the module name and return code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.

IOHB006  ISPF TBTOP FAILED
Explanation: A request to run the ISPF TBTOP service returned an unexpected return code.
System action: The requested action fails.
User response: Obtain the module name and return code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.

IOHB007  ISPF TDISPL FAILED
Explanation: A request to run the ISPF TDISPL service returned an unexpected return code.
System action: The requested action fails.
User response: Obtain the module name and return code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.

IOHB008  ISPF TBDELETE FAILED
Explanation: A request to run the ISPF TBDELETE service returned an unexpected return code.
System action: The requested action fails.
User response: Obtain the module name and return code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.

IOHB009  ISPF TBMOD FAILED
Explanation: A request to run the ISPF TBMOD service returned an unexpected return code.
System action: The requested action fails.
User response: Obtain the module name and return code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.

IOHB010  ISPF TBSORT FAILED
Explanation: A request to run the ISPF TBSORT service returned an unexpected return code.
System action: The requested action fails.
User response: Obtain the module name and return code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.

IOHB011  ISPF TABLE IN USE
Explanation: A request to run the ISPF TBCREATE service failed because the ISPF table name was already in use.
System action: The requested action fails.
User response: Obtain the module name and return code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.
IOHB012  ISPTLIB NOT ALLOC

Explanation: A request to run the ISPF TBCREATE service failed because the ISPF table library was not allocated.

System action: The requested action fails.

User response: Ensure that the IMS HP Sysgen Tools table library (IOHTLIB) is allocated to file IOHTLIB. Obtain the module name and return code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.

IOHB003  ISPF TBOPEN FAILED

Explanation: A request to run the ISPF TBOPEN service returned an unexpected return code.

System action: The requested action fails.

User response: Obtain the module name and return code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.

IOHB004  ISPF VPUT FAILED

Explanation: A request to run the ISPF VPUT service returned an unexpected return code.

System action: The requested action fails.

User response: Obtain the module name and return code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.

IOHB017  ISPF CONTROL FAILED

Explanation: A request to run the ISPF CONTROL service returned an unexpected return code.

System action: The requested action fails.

User response: Obtain the module name and return code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.

IOHB018  ISPF TBBOTTOM FAILED

Explanation: A request to run the ISPF TBBOTTOM service returned an unexpected return code.

System action: The requested action fails.

User response: Obtain the module name and return code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.

IOHB019  ISPF TBSCAN FAILED

Explanation: A request to run the ISPF TBBOTTOM service returned an unexpected return code.

System action: The requested action fails.

User response: Obtain the module name and return code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.

IOHB020  ISPF VBOTTOM FAILED

Explanation: A request to run the ISPF VBOTTOM service returned an unexpected return code.

System action: The requested action fails.

User response: Obtain the module name and return code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.

IOHB021  ISPF TBSKIP FAILED

Explanation: A request to run the ISPF VBOTTOM service returned an unexpected return code.

System action: The requested action fails.

User response: Obtain the module name and return code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.
IOHB022  ISPF VGET FAILED
Explanation: A request to run the ISPF VGET service returned an unexpected return code.
System action: The requested action fails.
User response: Obtain the module name and return code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.

IOHB023  ISPF TBPUT FAILED
Explanation: A request to run the ISPF TBPUT service returned an unexpected return code.
System action: The requested action fails.
User response: Obtain the module name and return code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.

IOHB024  ISPF FTOPEN FAILED
Explanation: A request to run the ISPF FTOPEN service returned an unexpected return code.
System action: The requested action fails.
User response: Obtain the module name and return code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.

IOHB025  ISPF FTINCL FAILED
Explanation: A request to run the ISPF FTINCL service returned an unexpected return code.
System action: The requested action fails.
User response: Obtain the module name and return code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.

IOHB026  ISPF FTCLOSE FAILED
Explanation: A request to run the ISPF FTCLOSE service returned an unexpected return code.
System action: The requested action fails.
User response: Obtain the module name and return code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.

IOHB027  ISPF BROWSE FAILED
Explanation: A request to run the ISPF BROWSE service returned an unexpected return code.
System action: The requested action fails.
User response: Obtain the module name and return code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.

IOHB028  ISPF TBQUERY FAILED
Explanation: A request to run the ISPF TBQUERY service returned an unexpected return code.
System action: The requested action fails.
User response: Obtain the module name and return code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.

IOHB029  ISPF BRIF FAILED
Explanation: A request to run the ISPF Browse Interface (BRIF) service returned an unexpected return code.
System action: The requested action fails.
User response: Obtain the module name and return code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.

IOHB030  ISPF VCOPY FAILED
Explanation: A request to run the ISPF VCOPY service returned an unexpected return code.
System action: The requested action fails.
User response: Obtain the module name and return code from the long version of this message by pressing Help. Contact IBM Software Support for assistance.

IOHB031  ISPF VREPLACE FAILED
Explanation: A request to run the ISPF VREPLACE service returned an unexpected return code.
System action: The requested action fails.
User response: Obtain the module name and return code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.
IOHB032  ISPF EDIT REQUEST FAILED

Explanation: A request to run the ISPF EDIT service returned an unexpected return code.

System action: The requested action fails.

User response: Obtain the module name and return code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.

IOHB033  ISPF EDIF REQUEST FAILED

Explanation: A request to run the ISPF EDIF (edit interface) service returned an unexpected return code.

System action: The requested action fails.

User response: Obtain the module name and return code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.

IOHC000  CLOSE ABENDED

Explanation: An attempt to close a file abended.

System action: The request fails.

User response: Obtain the DD name, data set type, and abend code from the long version of this message by pressing the Help key (usually, PF1). Review the MVS SYSLOG on the system where the TSO user is logged on for any related messages. Contact IBM Software Support for assistance.

IOHC001  INTERNAL ERROR

Explanation: An invalid error was passed to module IOHMBLK.

System action: The request fails.

User response: Obtain the function type from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.

IOHC002  OPEN FAILED

Explanation: An attempt to open a file failed.

System action: The request fails.

User response: Obtain the DD name, data set type, and abend code from the long version of this message by pressing the Help key (usually, PF1). Review the MVS SYSLOG on the system where the TSO user is logged on for any related messages. Contact IBM Software Support for assistance.

IOHC003  OPEN ABENDED

Explanation: An attempt to open a file abended.

System action: The request fails.

User response: Obtain the DD name, data set type, and abend code from the long version of this message by pressing the Help key (usually, PF1). Review the MVS SYSLOG on the system where the TSO user is logged on for any related messages. Contact IBM Software Support for assistance.

IOHC004  CLOSE FAILED

Explanation: IMS HP Sysgen Tools received an unexpected return code when closing a data set. The return code and data set are shown in the long form of the error message obtained by pressing the Help Key (usually, PF1).

System action: The request fails.

User response: Review the MVS SYSLOG on the system where the TSO user or batch job is running for other indications of a problem during the close process. Contact IBM Software Support for additional assistance.

IOHC005  ALLOCATION FAILED


System action: The request fails.

User response: Obtain the DD name, data set type, and abend code from the long version of this message by pressing the Help key (usually, PF1). Review ISPF Appendix A by pressing the Help key on the ISPF Primary Options menu to determine the reason for the error code reported in the long message. Contact IBM Software Support for assistance.

IOHC006  DEALLOCATION FAILED

Explanation: Deallocation of a data set failed.

System action: The request fails.

User response: Obtain the DD name, data set type, and abend code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.

IOHC007  UNKNOWN IMS RELEASE

Explanation: An unknown or unsupported release of IMS was encountered.

System action: The request fails.

User response: Obtain the release of IMS found in DFSVC000 from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.
IOHC008  LOAD FAILED
Explanation: An MVS LOAD macro failed.
System action: The request fails.
User response: Obtain the module name and abend code from the long version of this message by pressing the Help key (usually, PF1). Review the MVS SYSLOG on the system where the TSO user is logged on for any related messages. Contact IBM Software Support for assistance.

IOHC009  INVALID MODBLKS MOD
Explanation: The length of a MODBLKS module was not valid for the release of IMS found in the IMS RESLIB.
System action: The request fails.
User response: Obtain the MODBLKS module name and abend code from the long version of this message by pressing the Help key (usually, PF1). Verify that the MODBLKS module is valid. Contact IBM Software Support for assistance.

IOHC010  INVALID MODBLKS
Explanation: An error occurred interpreting a DBD definition loaded from the MODBLKS data set.
System action: The request fails.
User response: Obtain the DBD name and the attribute name from the long version of this message by pressing the Help key (usually, PF1). Verify that the MODBLKS module is valid for this version of IMS. Contact IBM Software Support for assistance.

IOHC011  INVALID MODBLKS
Explanation: An error occurred interpreting a PSB definition loaded from the MODBLKS data set.
System action: The request fails.
User response: Obtain the PSB name and the attribute name from the long version of this message by pressing the Help key (usually, PF1). Verify that the MODBLKS module is valid for this version of IMS. Contact IBM Software Support for assistance.

IOHC012  TRAN EDIT NAME ERROR
Explanation: The transaction edit routine number obtained from the MODBLKS data set was not valid. The edit routine number exceeded the number of edit routines included in the RESLIB data set in the last IMS CTBLKS or higher sysgen.
System action: The request fails.
User response: Obtain the transaction code and edit routine number from the long version of this message by pressing the Help key (usually, PF1). Verify that the proper RESLIB library is being used for this MODBLKS data set. Contact IBM Software Support for assistance.

IOHC013  MACRO FORMAT ERROR
Explanation: An unknown attribute value was encountered while converting a resource definition back to IMS sysgen source.
System action: The request fails.
User response: Obtain the resource type and name and the attribute being formatted from the long version of this message by pressing the Help key (usually, PF1). Verify that the proper RESLIB library is being used for this MODBLKS data set. Contact IBM Software Support for assistance.

IOHC014  MACRO FORMAT ERROR
Explanation: An invalid parameter was passed to module IOHFMAC.
System action: The request fails.
User response: Contact IBM Software Support for assistance.

IOHC015  MEMBER NAME REQUIRED
Explanation: A PDS data set was specified for output, but a member name was not specified.
System action: The request is stopped.
User response: When specifying a PDS as the output data set, ensure that a member name is included in the data set name specified.

IOHC016  INVALID BLKSIZE
Explanation: The LRECL of the output data set specified was not 80.
System action: The request is stopped.
User response: Verify that the output data set has an LRECL of 80. Either reallocate the output data set, or select a different data set with a LRECL of 80.

IOHC017  BUFFERING ERROR
Explanation: An internal error occurred while processing buffers for the input file.
System action: The request fails.
User response: Contact IBM Software Support for assistance.
IOHC018  MISSING OPTION
Explanation: The option field was missing.
System action: The request is stopped.
User response: Supply a valid option.

IOHC019  INVALID OPTION
Explanation: The option selected was not a valid option value.
System action: The request is stopped.
User response: Supply a valid option.

IOHC020  INVALID MATRIX
Explanation: MATRIX table verification failed.
System action: The request fails.
User response: Obtain the MATRIX table name from the long version of this message by pressing the Help key (usually, PF1). Verify that a valid MATRIX data set was specified. Contact IBM Software Support for assistance.

IOHC021  INVALID MATRIX
Explanation: A member required for reverse matrix processing was not found in the MATRIX data set.
System action: The request fails.
User response: Obtain the member name in error from the long version of this message by pressing the Help key (usually, PF1). Review the previous IMS security gen to ensure that it was successful. Contact IBM Software Support for assistance.

IOHC022  INVALID PSWD MATRIX
Explanation: Validation of the password for MATRIX members failed.
System action: The request fails.
User response: Review the previous IMS security gen to ensure that it was successful. Contact IBM Software Support for assistance.

IOHC024  ERROR OBTAINING DSNs
Explanation: In order to process the request, IMS HP Sysgen Tools verifies that the data set names in the IMSID options match the data set names currently in use by the IMS control region. An error occurred while obtaining the data set names currently in use.
System action: The request being processed fails.
User response: Review the MVS SYSLOG on the LPAR where IMS executes for IOH error messages that indicate the nature of the problem. Either populate the data set names on the setup panel yourself, or correct the problem and retry setup.

IOHC025  HP SYSGEN PSB INVALID
Explanation: While attempting to process the request, validation of the PSB name that was specified in the IMSID options failed.
System action: The request fails.
User response: Ensure that the proper PSB name is specified in the IMSID options for the requested IMS system. If the PSB name is correct, ensure that the PSB name is included in the IMS system definition.

IOHC026  GEN SRC UPDATED
Explanation: The GEN SRC flag, which indicates that the IMS sysgen source has been updated to reflect this log entry, was updated as requested.
System action: Processing continues.
User response: None.

IOHC027  INVALID DFSVC000
Explanation: Module DFSVC000 loaded from RESLIB was invalid.
System action: The request fails.
User response: Ensure that a valid RESLIB data set name was specified. Contact IBM Software Support for assistance.

IOHC028  IOHXGEN PARM ERROR
Explanation: IOHXGEN was called without a value set for variable IOHLINK, which should be set by the IOH@PRIM Primary Options menu.
System action: The request is stopped.
User response: Ensure that any modifications to the IOH@PRIM Primary Options menu did not interfere with ISPF variable IOHLINK. Contact IBM Software Support for assistance.

IOHC029  CLEANUP ERROR
Explanation: An error occurred while performing cleanup for open files and freeing storage.
System action: The request is stopped.
User response: Review the sysgen output for any additional messages indicating the reason for the cleanup failure. Contact IBM Software Support for assistance.
**IOHC030  SYSGEN ERRORS**

**Explanation:** One or more IMS sysgen errors were found while performing the IMS Fastgen process.

**System action:** The request is stopped.

**User response:** Review the output of the Fastgen process to identify the errors. Finding the letters IOH in column 1 of the output will find error messages.

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**IOHC031  LINKEDIT ERRORS**

**Explanation:** One or more Link edit errors were found while performing the IMS Fastgen process.

**System action:** The request is stopped.

**User response:** Review the output of the Fastgen process to identify the errors. Finding the letters IOH in column 1 of the output will find error messages.

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**IOHC032  SECURITY GEN ERRORS**

**Explanation:** IMS security gen errors were found while performing the IMS Fastgen process.

**System action:** The request is stopped.

**User response:** Review the output of the Fastgen process to identify the errors. Finding the letters IOH in column 1 of the output will find error messages.

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**IOHC033  GETMAIN ERROR**

**Explanation:** An error occurred during an internal storage manager GETMAIN request.

**System action:** The request fails.

**User response:** Obtain the pseudo module name for which the GETMAIN was being performed from the long version of this message by pressing the Help key (usually, PF1). Review the MVS SYSLOG on the system where the TSO user is logged on for any related messages. Contact IBM Software Support for assistance.

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**IOHC034  FREEMAIN ERROR**

**Explanation:** An error occurred during an internal storage manager FREEMAIN request.

**System action:** The request fails.

**User response:** Obtain the pseudo module name for which the FREEMAIN was being performed from the long version of this message by pressing the Help key (usually, PF1). Review the MVS SYSLOG on the system where the TSO user is logged on for any related messages. Contact IBM Software Support for assistance.

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**IOHC035  INTERNAL ERROR**

**Explanation:** An error occurred during processing of the MODSTAT data set.

**System action:** The request fails.

**User response:** Ensure that a proper MODSTAT data set name was specified in the SETUP option for this IMSID. Contact IBM Software Support for assistance.

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**IOHC036  FUNCTION ERROR**

**Explanation:** An error occurred during processing of an internal storage manager request.

**System action:** The request fails.

**User response:** Obtain the pseudo module name in error from the long version of this message by pressing the Help key (usually, PF1). Review the MVS SYSLOG on the system where the TSO user is logged on for any related messages. Contact IBM Software Support for assistance.

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**IOHC037  FUNCTION ERROR**

**Explanation:** An ENQ or DEQ operation failed.

**System action:** The request fails.

**User response:** Obtain the data set type and return code from the long version of this message by pressing the Help key (usually, PF1). Review the MVS SYSLOG on the system where the TSO user is logged on for any related messages. Contact IBM Software Support for assistance.

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**IOHC038  DATA SET IN USE**

**Explanation:** An enqueue failed for major name DFSOC001.

**System action:** The request fails.

**User response:** Ensure that an IMS online change for MODBLKS is not in progress. Also, ensure that the same MODBLKS or MATRIX data sets are not shared among multiple IMS systems.

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**IOHC039  DDNAME NOT FOUND**

**Explanation:** An attempt to locate the TIOT entry for a DD name failed.

**System action:** The request fails.

**User response:** Obtain the DD name from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.
IOHC040  SWAREQ FAILED
Explanation: An MVS SWAREQ macro failed.
System action: The request fails.
User response: Obtain the return code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.

IOHC041  CONCATENATION FAILED
Explanation: A dynamic concatenation request failed.
System action: The request is stopped.
User response: Obtain the data set type and return codes from the long version of this message by pressing the Help key (usually, PF1). Review ISPF Appendix A by pressing the Help key on the ISPF Primary Options menu to determine the reason for the error code reported in the long message. Contact IBM Software Support for assistance.

IOHC042  UNSUPPORTED ENVIRONMENT
Explanation: IMS includes Global Online Change. IMS HP Sysgen Tools does not support this environment.
System action: The request is rejected.
User response: Verify that the IMS system that was specified uses Global Online Change. Remove this option if you want to use HP Sysgen Tools.

IOHC043  INCONSISTENT MODBLKS
Explanation: The number of resources defined in MODBLKS module DFSISDB x does not match the number of resources defined in the MODBLKS resource definition module.
System action: The request is stopped.
User response: Obtain the member names in error from the long version of this message by pressing the Help key (usually, PF1). Ensure that the MODBLKS data set contains valid modules. Contact IBM Software Support for assistance.

IOHC044  INCONSISTENT MODBLKS
Explanation: The names of resources defined in MODBLKS module DFSISDB x does not match the number of resources defined in the MODBLKS resource definition module.
System action: The request is stopped.
User response: Obtain the member names in error from the long version of this message by pressing the Help key (usually, PF1). Ensure that the MODBLKS data set contains valid modules. Contact IBM Software Support for assistance.

IOHC045  MEMBER INVALID
Explanation: The ZAP process has been canceled.
System action: The request fails.
User response: Verify that the proper data set name was specified for the output data set. If the data set is not a PDS, omit the member name from the data set specification.

IOHC046  CONCATENATION INVALID
Explanation: IMS sysgen source or security gen source data sets specified in the IMSID options have inconsistent DSORGs.
System action: The request fails.
User response: Review the IMS sysgen and security gen data set names specified in the IMSID setup options. When multiple data sets are specified, all the data sets must either be sequential data sets or PDS data sets.

IOHC048  OUTPUT DATA SET INVALID
Explanation: The output DSN specified has invalid DCB parameters. DCB information must be LRECL=133 RECFM=FBA with an appropriate BLKSIZE.
System action: The request fails.
User response: Review the DCB information for the output data set specified on the screen. Ensure that the LRECL is 133, the RECFM is FBA, and that the block size is a multiple of 133.

IOHC049  OUTPUT DATA SET INVALID
Explanation: The output DSN specified has invalid DCB parameters. DCB information must be LRECL=133 RECFM=FBA with an appropriate BLKSIZE.
System action: The request fails.
User response: Correct the output data set name that was specified on the screen to specify a data set that is allocated with RECFM=FB, LRECL=80, and a block size that is a multiple of 80.

IOHD001  INCOMPATIBLE OPTIONS
Explanation: Both RESIDENT and DOPT cannot be specified.
System action: None.
User response: Select either RESIDENT or DOPT (or neither), but not both.
IOHD002 INCOMPATIBLE OPTIONS
Explanation: Both DOPT and SCHDTYP=PARALLEL cannot be specified.
System action: None.
User response: Select either DOPT or PARALLEL for SCHDTYP, but not both.

IOHD003 INCOMPATIBLE OPTIONS
Explanation: Both FPATH=YES and SCHDTYP=PARALLEL cannot be specified.
System action: None.
User response: Select either YES for FPATH or PARALLEL for SCHDTYP, but not both.

IOHD004 INCOMPATIBLE OPTIONS
Explanation: Both FPATH=YES and LANG=JAVA cannot be specified.
System action: None.
User response: Select either YES for FPATH or JAVA for LANG, but not both.

IOHD005 INCOMPATIBLE OPTIONS
Explanation: Both FPATH=YES and PGMTYPE=BATCH cannot be specified.
System action: None.
User response: Select either YES for FPATH or BATCH for PGMTYPE, but not both.

IOHD006 INCOMPATIBLE OPTIONS
Explanation: Both GPSB and DOPT or RESIDENT cannot be specified.
System action: None.
User response: Select GPSB NO or BATCH with either RESIDENT or DOPT.

IOHD007 INCOMPATIBLE OPTIONS
Explanation: Both FPATH=YES and PGMTYPE=BATCH cannot be specified.
System action: None.
User response: Select either YES for FPATH or BATCH for PGMTYPE, but not both.

IOHD008 INCOMPATIBLE OPTIONS
Explanation: LANGUAGE must be blank except when GPSB is YES.
System action: None.
IOHD017  INVALID VALUE
Explanation:  The SCHDTYP field must be specified as either PARALLEL or SERIAL.
System action:  None.
User response:  Specify either SERIAL or PARALLEL for the SCHDTYP field.

IOHD018  INVALID VALUE
Explanation:  The Security field must be specified as NONE, AGN, PASSWORD, or BOTH.
System action:  None.
User response:  Specify a valid value for the Security field.

IOHD019  INVALID VALUE
Explanation:  The TRANSTAT field must be YES or NO.
System action:  None.
User response:  Specify either YES or NO for the TRANSTAT field.

IOHD020  resource NOT FOUND
Explanation:  The specified resource name was not found in this IMS subsystem.
System action:  None.
User response:  Change the resource name to a valid resource name in the specified IMS subsystem.

IOHD021  resource ALREADY DEFINED
Explanation:  The specified resource name is already defined in this IMS subsystem.
System action:  None.
User response:  Change the resource name to a name that is not already defined in the specified IMS subsystem.

IOHD022  resource NOT FOUND
Explanation:  The resource name specified in the COPY command was not found in this IMS subsystem.
System action:  None.
User response:  Change the resource name to copy to a resource name defined in the specified IMS subsystem.

IOHD023  ERROR OBTAINING RESOURCE
Explanation:  An error occurred retrieving attributes for the specified resource.
System action:  None.
User response:  Review the MVS SYSLOG on the system where the IMS control region is running for error messages indicating the reason for the failure.

IOHD100  INVALID VALUE
Explanation:  The RESIDENT field must be specified as either YES or NO.
System action:  None.
User response:  Specify either YES or NO for the RESIDENT field.

IOHD101  INVALID VALUE
Explanation:  The ACCESS field must be specified as one of the following: RO, RD, UP, or EX.
System action:  None.
User response:  Specify RO, RD, UP, or EX for the ACCESS field.

IOHD200  INVALID VALUE
Explanation:  The INQUIRY field must be specified as either YES or NO.
System action:  None.
User response:  Specify YES or NO for the INQUIRY field.

IOHD300  INVALID VALUE
Explanation:  The DCLWA field must be specified as either YES or NO.
System action:  None.
User response:  Specify YES or NO for the DCLWA field.

IOHD301  INVALID VALUE
Explanation:  The ULC field must be specified as either UC or ULC.
System action:  None.
User response:  Specify UC or ULC for the ULC field.

IOHD302  INVALID VALUE
Explanation:  The FPATH field must be specified as either YES, NO, or as a number between 12 and 30720.
System action:  None.
User response: Specify a valid value for the FPATH field.

IOHD303 INVALID VALUE
Explanation: The INQUIRY field must be specified as either YES, NO.
System action: None.
User response: Specify NO or YES for the INQUIRY field.

IOHD304 INVALID VALUE
Explanation: The RECOVERY field must be specified as either RECOVER or NORECOV.
System action: None.
User response: Specify RECOVER or NORECOV for the RECOVERY field.

IOHD305 INVALID VALUE
Explanation: The MAXRGN field must be specified as a number between 0 and 255. Zero is the default and should be used if the MAXRGN parameter has not been specified in the IMS sysgen TRANSACT macro.
System action: None.
User response: Specify a number between 0 and 255 for the MAXRGN field.

IOHD306 INVALID VALUE
Explanation: The MODE field must be specified as either MULT or SNGL.
System action: None.
User response: Specify MULT or SNGL for the MODE field.

IOHD307 INVALID VALUE
Explanation: The MSGTYPE field must be specified as either SNGLSEG or MULSEG.
System action: None.
User response: Specify SNGLSEG or MULSEG for the MSGTYPE field.

IOHD308 INVALID VALUE
Explanation: The RESPONSE field must be specified as either YES (for response) or NO (for nonresponse).
System action: None.
User response: Specify YES or NO for the RESPONSE field.

IOHD309 INVALID VALUE
Explanation: The CLASS field must be specified as a number between 1 and 999.
System action: None.
User response: Specify a number between 1 and 999 for the CLASS field.

IOHD310 INVALID VALUE
Explanation: The PARLIM field must be specified as either NONE or as a number between 0 and 32767.
System action: None.
User response: Specify NONE or a number between 0 and 32767 for the PARLIM field.

IOHD311 INVALID VALUE
Explanation: The PROCLIM COUNT field must be specified as a number between 0 and 65535.
System action: None.
User response: Specify a number between 0 and 65535 for the COUNT field.

IOHD312 INVALID VALUE
Explanation: The PROCLIM SECONDS field must be specified as a number between 1 and 65535.
System action: None.
User response: Specify a number between 1 and 65535 for the SECONDS field.

IOHD313 INVALID VALUE
Explanation: The PRIORITY1 field must be specified as a number between 0 and 14.
System action: None.
User response: Specify a number between 0 and 14 for the PRIORITY1 field.

IOHD314 INVALID VALUE
Explanation: The PRIORITY2 field must be specified as a number between 0 and 14.
System action: None.
User response: Specify a number between 0 and 14 for the PRIORITY2 field.

IOHD315 INVALID VALUE
Explanation: The PRIORITY3 field must be specified as a number between 10 and 65535.
System action: None.
User response: Specify a number between 1 and 65535 for the PRIORITY3 field.

IOHD316  INVALID VALUE
Explanation: The ROUTING field must be specified as either YES or NO.
System action: None.
User response: Specify YES or NO for the ROUTING field.

IOHD317  INVALID VALUE
Explanation: The SCHD field must be specified as a number between 1 and 4.
System action: None.
User response: Specify a number between 1 and 4 for the SCHD field.

IOHD318  INVALID VALUE
Explanation: The SEGNO field must be specified as a number between 0 and 65535.
System action: None.
User response: Specify a number between 0 and 65535 for the SEGNO field.

IOHD319  INVALID VALUE
Explanation: The SEGSIZE field must be specified as a number between 0 and 65535.
System action: None.
User response: Specify a number between 0 and 65535 for the SEGSIZE field.

IOHD320  INVALID VALUE
Explanation: The SERIAL field must be specified as either YES or NO.
System action: None.
User response: Specify YES or NO for the SERIAL field.

IOHD321  INVALID VALUE
Explanation: The SPA SIZE field must be left blank (for nonconversational) or specified as a number between 16 and 32767.
System action: None.
User response: Specify a number between 16 and 32767 for the SPA SIZE field.

IOHD322  INVALID VALUE
Explanation: The SPA TYPE field must be specified as RTRUNC or STRUNC, or leave it blank.
System action: None.
User response: Specify RTRUNC or STRUNC for the SPA TYPE field, or leave it blank.

IOHD323  INVALID VALUE
Explanation: The RMT SYSID field must be left blank (for a non-MSC transaction), or be specified as a number between 1 and 2036.
System action: None.
User response: Specify a number between 1 and 2036 for the RMT SYSID field, or leave it blank.

IOHD324  INVALID VALUE
Explanation: The LCL SYSID field must be left blank (for a non-MSC transaction), or be specified as a number between 1 and 2036.
System action: None.
User response: Specify a number between 1 and 2036 for the LCL SYSID field, or leave it blank.

IOHD325  INVALID VALUE
Explanation: The WFI field must be specified as either YES or NO.
System action: None.
User response: Specify YES or NO for the WFI field.

IOHD326  INVALID VALUE
Explanation: The AOI field must be specified as either YES, NO, or TRAN.
System action: None.
User response: Specify YES, NO, or TRAN for the AOI field.

IOHD327  INVALID VALUE
Explanation: The TRANSTAT field must be YES or NO.
System action: None.
User response: Specify either YES or NO for the TRANSTAT field.
IOHD328  INVALID VALUE

Explanation: The EXPRTIME field must be a number between 0 and 65535.

System action: None.

User response: Specify a number between 0 and 65535 for the EXPRTIME field.

IOHD331  INCOMPATIBLE OPTIONS

Explanation: Conversational transactions (those with a SPA SIZE specified) must specify MODE=SNGL.

System action: None.

User response: Either change the SPA SIZE field to blank or change the MODE field to SNGL.

IOHD332  INCOMPATIBLE OPTIONS

Explanation: WIFI transactions must specify MODE=SNGL.

System action: None.

User response: Either change the WFI field to NO or change the MODE field to SNGL.

IOHD333  INCOMPATIBLE OPTIONS

Explanation: INQUIRY=NO and RECOVERY=NORECOV are mutually exclusive.

System action: None.

User response: Either change the INQUIRY field to YES or change the RECOVERY field to RECOVER.

IOHD334  INCOMPATIBLE OPTIONS

Explanation: RECOVERY=NORECOV (nonrecoverable) cannot be specified for a conversational transaction (SPA SIZE non-blank).

System action: None.

User response: Either change the SPA SIZE field to blank or change the RECOVERY field to RECOVER.

IOHD335  INCOMPATIBLE OPTIONS

Explanation: RECOVERY=NORECOV (nonrecoverable) cannot be specified for a Fast Path transaction.

System action: None.

User response: Either change the FPATH field to NO or change the RECOVERY field to RECOVER.

IOHD336  INCOMPATIBLE OPTIONS

Explanation: MAXRGN cannot be greater than 0 for a transaction with SERIAL=YES.

System action: None.

User response: Either change the MAXRGN field to 0 or change the SERIAL field to NO.

IOHD337  INCOMPATIBLE OPTIONS

Explanation: When MAXRGN is specified as nonzero, a PARLIM value other than NONE is required.

System action: None.

User response: Either change the MAXRGN field to 0 or change the PARLIM field to NONE.

IOHD338  INCOMPATIBLE OPTIONS

Explanation: SERIAL=YES requires that MAXRGN be specified as 0.

System action: None.

User response: Either change the SERIAL field to NO or change the MAXRGN field to 0.

IOHD339  INCOMPATIBLE OPTIONS

Explanation: SERIAL=YES requires that PARLIM be specified as NONE.

System action: None.

User response: Either change the SERIAL field to NO or change the PARLIM field to NONE.

IOHD340  INCOMPATIBLE OPTIONS

Explanation: Fast Path transactions must specify RESPONSE mode YES.

System action: None.

User response: Either change the FPATH field to NO or change the RESPONSE field to YES.

IOHD341  INCOMPATIBLE OPTIONS

Explanation: Fast Path transactions must specify RESPONSE mode YES.

System action: None.

User response: Either change the FPATH field to NO or change the MSGTYPE field to SNGLSEG.

IOHD342  INCOMPATIBLE OPTIONS

Explanation: Batch oriented transactions (PRIORITY 0) cannot be parallel scheduled. PARLIM must be specified as NONE.
System action: None.
User response: Either change the PRIORITY1 and PRIORITY2 fields to nonzero or change the PRLIM field to NONE.

IOHD343 INCOMPATIBLE OPTIONS
Explanation: PRIORITY1 and PRIORITY2 must both be 0 for a batch oriented transaction; or they must be nonzero for an online transaction.
System action: None.
User response: Change both the PRIORITY1 and PRIORITY2 fields to nonzero, for an online transaction; or to 0 for a batch transaction.

IOHE002 SECURITY CHECK FAILED
Explanation: Resource is not defined to security system or security is not active.
System action: The request is stopped.
User response: Ensure that the appropriate security definitions are in place. Check the MVS SYSLOG on the system where IMS is running for additional security messages related to this problem.

IOHE003 NOT AUTHORIZED
Explanation: Authorization was denied.
System action: The request is stopped.
User response: Ensure that the appropriate users have access to the IMS HP Sygen Tools security definitions. Check the MVS SYSLOG on the system where IMS is running for additional security messages related to this problem.

IOHE004 LOAD FAILED
Explanation: An MVS LOAD macro failed.
System action: The request fails.
User response: Obtain the module name, abend code, and return code from the long version of this message by pressing the Help key (usually, PF1). Review the MVS SYSLOG on the system where IMS is running for any related messages. Contact IBM Software Support for assistance.

IOHE005 APPC TRANS ERROR
Explanation: A remote APPC process experienced an error but did not provide an error message ID.
System action: The request fails.
User response: Obtain the process name from the long version of this message by pressing the Help key (usually, PF1). Review the MVS SYSLOG on the system where IMS is running for any related messages.

IOHE006 APPC CALL ERROR
Explanation: A call to an APPC service module failed.
System action: The request fails.
User response: Obtain the module name and return code from the long version of this message by pressing the Help key (usually, PF1). Review the MVS SYSLOG on the system where IMS is running for any related messages. Contact IBM Software Support for assistance.

IOHE007 UNKNOWN FUNCTION IN CALL
Explanation: A call to IOHXAPPC contained an unknown function code.
System action: The request fails.
User response: Contact IBM Software Support for assistance.

IOHE009 SECURITY ERROR
Explanation: An attempt to issue an IMS command by means of APPC/IMS failed due to a security failure. This could be caused by authorization for the command being rejected by either RACF or IMS exit DFSCCMD0.
System action: The request fails.
User response: Review the MVS SYSLOG on the system where IMS is running and the IMS MTO log for any related messages. Contact IBM Software Support for assistance.

IOHE013 APPC ERROR
Explanation: APPC returned an unexpected value for the DATA_RECEIVED variable. The DATA_RECEIVED value returned and the call type are shown in the long form of the message displayed by pressing the Help key (usually, PF1)
System action: The request fails.
User response: Ensure that the SYMDEST specified in the IMSID options is correct. If it is correct, contact IBM Software Support for additional assistance.

IOHE015 INVALID RECV LENGTH
Explanation: The APPC header contains a receive length of zero.
System action: The request fails.
User response: Contact IBM Software Support for assistance.
IOHE017  APPC MSG TOO LARGE
Explanation: The APPC message area was too small.
System action: The request fails.
User response: Contact IBM Software Support for assistance.

IOHE019  MISSING DEALLOC
Explanation: The APPC response received back from the APPC transaction did not include a deallocate for the conversation.
System action: The request fails.
User response: Review the MVS SYSLOG on the system where IMS is running for any related messages. Contact IBM Software Support for assistance.

IOHE020  INVALID MEMBER
Explanation: The member name specified in the select command was either missing or invalid.
System action: The request is ignored.
User response: Specify an existing member name on the SELECT command.

IOHE021  UPDATE LIST HAS 0 LINES
Explanation: The selected update list is empty and cannot be processed.
System action: The request is ignored.
User response: When selecting a resource update list to verify or install, select a list that has entries.

IOHE022  SECURITY ERROR
Explanation: Unable to validate your user ID on the MVS image where IMS runs. Password expired.
System action: The request fails.
User response: Change your password on the MVS system where IMS is running.

IOHE023  SECURITY ERROR
Explanation: Unable to validate your user ID on the MVS image where IMS runs. User ID is not defined.
System action: The request fails.
User response: The user ID that was used to log on to TSO must also be defined on the MVS system where IMS runs.

IOHE024  SECURITY ERROR
Explanation: Unable to validate the authorized user ID on the MVS system where IMS runs. Password expired.
System action: The request fails.
User response: Change your password on the MVS system where IMS is running.

IOHE025  SECURITY ERROR
Explanation: Unable to validate the authorized user ID on the MVS system where IMS runs. User ID not defined.
System action: The request fails.
User response: The user ID that was used to log on to TSO must also be defined on the MVS system where IMS runs.

IOHE030  ABEND abend-code
Explanation: Creation of the options module failed because of the stated abend code.
System action: The request fails.
User response: Review the abend code and check the MVS SYSLOG on the system where the TSO user is logged on for additional messages related to this error.

IOHE031  LOG RECORD ERROR
Explanation: Invalid field values were encountered while formatting the IOHLOG records.
System action: The request is stopped.
User response: Obtain the error code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.

IOHE032  COPY FAILED
Explanation: An error occurred while attempting to read the member to be copied, causing the copy operation to fail.
System action: The COPY request failed.
User response: Verify that the member that is being copied is a valid resource update list. Contact IBM Software Support for additional assistance.

IOHE033  COPY COMPLETE
Explanation: The request to copy the contents of another resource update list has completed successfully.
System action: The request has completed.
User response: None.
**IOHE034**  INVALID MEMBER

**Explanation:** The member name that was specified in the COPY command was not found in the IOHPDS data set.

**System action:** The COPY request fails.

**User response:** Verify that the name to be copied was specified correctly.

**IOHE035**  COPY ABORTED

**Explanation:** The COPY command was entered, but no member was selected.

**System action:** The request is rejected.

**User response:** Ensure that you select a member to copy.

**IOHE036**  NO ENTRIES SELECTED

**Explanation:** No resource update list was created because no entries were selected by using the U line command.

**System action:** The request is stopped.

**User response:** Ensure that you select one or more entries before pressing Enter to process the selected members.

**IOHE037**  FUNCTION ABORTED

**Explanation:** The request to create an Undo entry for a resource update list was stopped.

**System action:** The UNDO function is stopped.

**User response:** None. The request was stopped because End was pressed.

**IOHE038**  LOG RECORD ERROR

**Explanation:** Invalid field values were encountered formatting the IOHLOG records.

**System action:** The request fails.

**User response:** Contact IBM Software Support for assistance with the identification of the invalid records in the IOHLOG data set.

**IOHE039**  INVALID MEMBER NAME

**Explanation:** The member name that was specified is invalid or already exists. Specify a member name that does not already exist.

**System action:** The member name is rejected.

**User response:** Ensure that the member name that was specified is a valid member name and does not already exist.

**IOHF001**  UNKNOWN REQUEST TYPE

**Explanation:** The APPC transaction program received an APPC message with an unknown request type.

**System action:** The request fails.

**User response:** Obtain the request type from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.

**IOHF002**  LOAD FAILED

**Explanation:** An MVS LOAD macro failed.

**System action:** The request fails.

**User response:** Obtain the abend code and reason code from the long version of this message by pressing the Help key (usually, PF1). Review the MVS SYSLOG on the system where IMS is running for other messages related to the LOAD failure. Contact IBM Software Support for assistance.

**IOHF003**  IMS NOT AVAILABLE

**Explanation:** The IMS control region was not found.

**System action:** The request fails.

**User response:** Check to see if IMS is running. Verify that the SYMDEST specified in the Setup options for this IMSID is correct for routing requests to the MVS system where IMS is running.

**IOHF005**  GETMAIN FAILED

**Explanation:** An MVS GETMAIN macro failed.

**System action:** The request fails.

**User response:** Obtain the storage type and return code from the long version of this message by pressing the Help key (usually, PF1). Contact IBM Software Support for assistance.

**IOHF006**  DYNAMIC ALLOCATION ERROR

**Explanation:** A dynamic allocation error occurred.

**System action:** The request fails.

**User response:** Obtain the data set type and return codes from the long version of this message by pressing the Help key (usually, PF1). Review ISPF Appendix A by pressing the Help key on the ISPF Primary Options menu to determine the reason for the error code reported in the long message. Contact IBM Software Support for assistance.
IOHF007  OPEN FAILED
Explanation:  OPEN failed for the IMS RESLIB.
System action:  The request fails.
User response:  Review the MVS SYSLOG on the system where the IMS control region is running for other messages related to the OPEN failure. Contact IBM Software Support for assistance.

IOHF008  SUBTASK FAILED
Explanation:  A subtask running the in APPC initiator failed.
System action:  The request fails.
User response:  Obtain the abend or return code from the long version of this message by pressing the Help key (usually, PF1). Review the MVS SYSLOG on the system where the IMS control region is running for other messages related to the OPEN failure. Contact IBM Software Support for assistance.

IOHF009  UNSUPPORTED IMS RELEASE
Explanation:  The release of IMS requested by the IMS subsystem is not supported.
System action:  The request is stopped.
User response:  Contact IBM Software Support for assistance.

IOHF010  ATTACH FAILED
Explanation:  An MVS ATTACH failed.
System action:  The request fails.
User response:  Obtain the module name being attached and the return code, from the long version of this message by pressing the Help key (usually, PF1). Review the MVS SYSLOG on the system where the IMS control region is running for other messages related to the failure. Contact IBM Software Support for assistance.

IOHF011  VERIFY SUCCESSFUL
Explanation:  The Verify request has completed without any errors or warnings.
System action:  None.
User response:  None.

IOHF012  UNKNOWN APPC STATUS
Explanation:  IMS field LSCD_STAT has an unknown status.
System action:  The request fails.
User response:  Review the messages that are shown to determine the causes of the installation failure, and correct the problems before trying again.

IOHF013  TRANSITORY APPC STATUS
Explanation:  IMS field LSCD_STAT has a transitory status (starting or stopping).
System action:  The request fails.
User response:  Retry the request.

IOHF014  IMS SHUTDOWN
Explanation:  The IMS control region was shut down while the update list was being implemented.
System action:  The request fails.
User response:  Retry the request when IMS is restarted.

IOHF015  VERIFY FAILED
Explanation:  One or more errors occurred while verifying the compatibility of the resource update list entries with the named IMS subsystem.
System action:  Processing continues.
User response:  Review the messages that were displayed to determine the causes of the verification failure. Correct the problems and rerun the Verify request.

IOHF016  COMMAND NOT SUPPORTED
Explanation:  The command entered is either invalid or not supported in the APPC/IMS environment.
System action:  The request fails.
User response:  Ensure that the command entered begins with a slash (/) and that the command was entered correctly.

IOHF017  INSTALL SUCCESSFUL
Explanation:  The install request has completed successfully.
System action:  None.
User response:  None.

IOHF018  INSTALL FAILED
Explanation:  An installation request was stopped because one or more error conditions prevented the successful installation of the resource update list.
System action:  The installation is stopped.
User response:  Review the messages that are shown to determine the causes of the installation failure, and correct the problems before trying again.
IOHF027  APPLICATION ERROR
Explanation: The response message for this request exceeded the maximum allowable size.
System action: The request fails.
User response: Contact IBM Software Support for assistance.

IOHF050  OPEN FAILED
Explanation: OPEN failed for the IOHOPT data set.
System action: The request fails.
User response: Review the MVS SYSLOG on the system where the IMS control region is running for other messages related to the OPEN failure. Contact IBM Software Support for assistance.

IOHF051  CLOSE FAILED
Explanation: CLOSE failed for the IOHOPT data set.
System action: The request is stopped.
User response: Review the MVS SYSLOG on the system where the IMS control region is running for other messages related to the failure. Contact IBM Software Support for assistance.

IOHF052  function FAILED
Explanation: A LOAD or DELETE, as specified in the message, failed.
System action: The request is stopped.
User response: Review the MVS SYSLOG on the system where the IMS control region is running for other messages related to the failure. Contact IBM Software Support for assistance.

IOHF061  STORE/FORWARD ACTIVE DSN=stfwd
Explanation: Installation store/forward is active for this job. stfwd is the name of the installation store/forward VSAM data set.
System action: Processing continues.
User response: None. This message is informational.

IOHF062I  STORE/FORWARD KEY
IOHPDS=iohpds
Explanation: The IOHPDS value, which is part of the key of the records stored in the store/forward data set, is iohpds. Because one or more IMS systems were not active, the installation information was stored in the store/forward data set. The installation will be rerun later by the REDO job. A list of the key values for the commands stored in the data set specified by the IOHSTTFWD DD statement follows this message.

System action: The failed commands are written to the store/forward data set, and processing continues.
User response: None. This message is informational.

IOHF063I  STORE/FORWARD DATA SET IN USE
Explanation: Although store/forward is active in the ISPF environment, the store/forward data set is in use by another job or user.
System action: Processing continues.
User response: Try the operation again after the other job or user completes the processing of the store/forward data set.

IOHF064E  STORE/FORWARD DATA SET IN USE
Explanation: Although installation store/forward is active in the batch installation environment, the store/forward VSAM data set is in use by another job or user.
System action: The job terminates with a return code of 12.
User response: Try the operation again after the other job or user completes the processing of the store/forward data set.

IOHF065E  STORE/FORWARD DOES NOT SUPPORT IMS OF GLOBAL ONLINE CHANGE
Explanation: The REDO job read the INSTALL statement from the store/forward data set and started IOHBLIST, but the global online change function had been enabled for the target IMS. The store/forward function does not support IMS systems where global online change is enabled.
System action: IOHBLIST terminates with a return code of 12, and the REDO job continues processing.
User response: It might be possible that the target IMS system, which had been configured as local online change at the time when the installation information was stored in the store/forward data set, was changed later to the global online change configuration. Investigate the status and run a normal install processing if installation is required.

When the problem is resolved, delete this entry from the store/forward data set by using, for example, the TSO ISPF editing function. For more information about how to delete an entry, see “Step 2: Installing the resource update list by running the REDO job” on page 32.

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IOHF066E  OPEN FAILED FOR IOHSTFWD, RETURN CODE=rc

Explanation: IMS HP Sysgen Tools was unable to open the data set associated with DDNAME IOHSTFWD. rc indicates the return code from the open processing. Additional messages might be displayed on the z/OS Syslog.

Or, if rc is INIT, the data set associated with DDNAME IOHSTFWD was not initialized using the sample JCL that was provided in the IOHSTF member of the AIOHSAMP data set. See “Activating installation store/forward” on page 52.

System action: The job terminates with a return code of 12.

User response: Correct the error that caused the open failure, and run the job again.

IOHF067E  VSAM ERROR ON STORE/FORWARD DATA SET, RC=rc RPLFDBK=rplfdbk FUNC=function

Explanation: IMS HP Sysgen Tools encountered a VSAM error with function for the store/forward data set. The VSAM return code and RPLFDBK are represented by rc and rplfdbk, respectively.

function is the name of a VSAM macro such as GET, PUT, ERASE, or GENCB.

System action: The job terminates with a return code of 12.

User response: Correct the error, and run the job again.

IOHF068W  ONLINE CHANGE OPTION OF IMS IN IOHPDS IS xxx BUT ONE IN TARGET IMS IS yyy

Explanation: The IMS online change option stored in IOHPDS is xxx, but the online change option for the target online IMS is yyy.

If the installation store/forward function is enabled, IMS HP Sysgen Tools generally stores information about the failed IMS system in the store/forward data set if the target IMS is inactive at the time of installation. However, if that IMS system's online change option is defined as global online change in the IOHOPT data set, installation information is not stored in the store/forward data set.

Therefore, if you want to use the installation store/forward function, you need to make sure that the IMS online change option stored in the IOHOPT data set is up to date.

System action: Processing continues.

User response: Update the IMS information stored in IOHOPT to reflect the latest system configuration. For information about how to update IOHOPT, see “Defining IMS HP Sysgen Tools options” on page 39.
Chapter 22. IMS sysgen messages (IOHG)

IOHGnnnx messages (and message IOHAGT004E) are issued by the IMS sysgen process, and correspond to IMS message numbers when the IOH prefix is removed.

For example, IOHG942 corresponds to IMS message G942.

Message format

IMS HP Sysgen Tools IMS sysgen messages adhere to the following format:

IOH6nnnx

Where:

IOHG  Indicates that the message was issued by IMS HP Sysgen Tools
nnn   Indicates the message identification number
x     Indicates the severity of the message:
A     Indicates that operator intervention is required before processing can continue.
E     Indicates that an error occurred, which might or might not require operator intervention.
I     Indicates that the message is informational only.
W     Indicates that the message is a warning to alert you to a possible error condition.

Each message also includes the following information:

Explanation:
The Explanation section explains what the message text means, why it occurred, and what its variables represent.

System action:
The System action section explains what the system will do in response to the event that triggered this message.

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

Severity:
A number between 2 and 16 that indicates the severity of the error. The severity of warning messages is usually 2 or 4, whereas severe errors are usually severity 16.

---

IOHAGT004E  5000 AGNS PROCESSED.
SUBSEQUENT AGNS IGNORED

Explanation: More than 5000 AGN names were specified in the IMS security gen control statements.
System action: Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.
User response: Reduce the number of AGN names in the security gen source.
Severity: 16
IOHG000E  IMS CTRL MUST BE FIRST STATEMENT

Explanation: The IMS syssgen source did not include an IMSCTRL macro prior to any transact macros.

System action: The request fails. Syntax checking continues, although IMS HP Syssgen Tools is unable to verify that transaction classes do not exceed the maximum class as specified in the IMSCTRL macro.

User response: Ensure that the IMSCTRL macro is included int he IMS syssgen source.

Severity: N/A

IOHG002E  FOLLOWING OPERAND(S) OMITTED OR INVALID; aaaaaaaaa

Explanation: The list can include one or more of the following: DBRC, ETOFEAT, IRLMN, IMSID, MAXCLAS, MAXIO, MAXREGN, MSVID, or SYSTEM.

By operand, one of the listed errors was detected.
- **DBRC**
  - More than one parameter was specified.
  - The parameter was not specified as YES or NO.
- **ETOFEAT**
  - More than two parameters were specified.
  - The first parameter was not YES, NO, or null.
  - The second parameter was not ALL or ONLY.
  - A second parameter was specified when the first parameter was NO.
- **IMSID**
  - More than one parameter was specified.
  - The parameter specified contained more than 4 characters.
  - The parameter, as specified, was not alphanumeric.
- **IRLMNM**
  - More than one parameter was specified.
  - The parameter was not 1 to 4 characters in length.
  - The parameter does not consist of alphanumeric characters.
- **MAXCLAS**
  - More than one parameter was specified.
  - The parameter was not specified as a decimal value from 1 through 255.
- **MAXIO**
  - More than two parameters were specified.
  - The first parameter is no longer used. It is kept only for compatibility purposes.
  - The second parameter was specified, but not as a decimal value from 7 through 255.
- **MAXREGN**
  - More than four parameters were specified.

System action: Syntax checking continues, but the Fast Syssgen process will not produce any updated control block modules.

User response: Correct the IMSCTRL macro’s specification of the indicated keyword.

Severity: 16

IOHG006W  DCLWA OPERAND IS INVALID; DEFAULT ASSUMED

Explanation: The value specified for the DCLWA= parameter of the IMSCTRL macro was neither YES nor NO.

System action: The value specified is ignored, and the default value of YES is used.

User response: Correct the IMSCTRL macro’s specification of keyword DCLWA.

Severity: 2

IOHG102E  DBD OPERAND IS OMITTED OR INVALID. SPECIFIED DBD NAME WAS mmmmm

Explanation: A DATABASE macro was encountered with either an invalid DBD= value, or the DBD= value was missing. For syntax restrictions on the values of DBD=, see IMS System Definition.

System action: The syssgen fails. In batch mode, the job ends with the specified condition code. In online
mode, the /MODIFY request is canceled.

**User response:** Review the DATABASE macro that caused the problem. In an online request, it might be necessary to reproduce the error in batch mode to identify the macro in error.

**Severity:** 16

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**IOHG103E** • **IOHG204E**

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**Explanation:** The following are duplicate DBD names: nnnnnnn

**Explanation:** The DBD name included in the message was specified more than once in the IMS sysgen input.

**System action:** The sysgen fails. In batch mode, the job ends with the specified condition code. In online mode, the /MODIFY request is canceled.

**User response:** Eliminate the duplicated database names from the IMS sysgen source.

**Severity:** 16

---

**IOHG104E**

**Explanation:** Access operand is omitted or invalid.

**Explanation:** The ACCESS= keyword of a DATABASE macro did not specify a valid value. Valid specifications are EX, UP, RD, or RO.

**System action:** The sysgen fails. In batch mode, the job ends with the specified condition code. In online mode, the /MODIFY request is canceled.

**User response:** Review the ACCESS= value specified on the DATABASE macro that caused the error.

**Severity:** 16

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**IOHG105E**

**Explanation:** Database statement total specification exceeded

**Explanation:** More than 32,700 database names were included in the IMS sysgen source.

**System action:** The sysgen fails. In batch mode, the job ends with the specified condition code. In online mode, the /MODIFY request is canceled.

**User response:** Reduce the number of DBD= values specified on DATABASE macros to less than 32,700.

**Severity:** 16

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**IOHG201E**

**Explanation:** One of the following has occurred:

- More than one positional parameter was specified.
- A positional parameter other than DOPT or RESIDENT was specified.
- DOPT and SCHTYP=PARALLEL, which are mutually exclusive, were specified.

**System action:** Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.

**User response:** Review the statement in error. Also see message G201 in IMS Messages and Codes, Volume 2: Non-DFS Messages.

**Severity:** 16

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**IOHG202E**

**Explanation:** PGMTYPE operand is invalid.

**Explanation:** More than three parameters were specified.

- TP and BATCH were both specified.
- TP, BATCH, or OVLY was specified twice.
- A parameter was not specified as TP, BATCH, or OVLY.

**System action:** Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.

**User response:** Review the statement in error. Also see message G202 in IMS Messages and Codes, Volume 2: Non-DFS Messages.

**Severity:** 16

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**IOHG203E**

**Explanation:** SCHDTYP operand is invalid.

**Explanation:** More than one parameter was specified.

- The parameter was not specified as SERIAL or PARALLEL.

**System action:** Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.

**User response:** Review the statement in error. Also see message G203 in IMS Messages and Codes, Volume 2: Non-DFS Messages.

**Severity:** 16

---

**IOHG204E**

**Explanation:** IQF operand is invalid.

**Explanation:** The value specified for the IQF keyword was not NO.

**System action:** Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.

**User response:** Review the statement in error. Also see message G204 in IMS Messages and Codes, Volume 2: Non-DFS Messages.
Severity: 16

**IOHG205E**  
PSB OPERAND IS OMITTED OR INVALID.

**Explanation:** One of the following occurred:
- The PSB keyword operand was not specified.
- More than one parameter was specified.
- The parameter did not begin with an alphabetic character, or it contained more than 8 alphanumeric characters.
- The value began with the string 'DFS' or 'DBCDM', or it contained a reserved word.

**System action:** Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.

**User response:** Review the statement in error. Also see message G205 in IMS Messages and Codes, Volume 2: Non-DFS Messages.

Severity: 16

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Severity: 16

**IOHG206E**  
THE FOLLOWING ARE DUPLICATE PSB NAMES: xxxx

**Explanation:** The specified PSB name was previously specified on an APPLCTN macro-instruction statement.

**System action:** Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.

**User response:** Review the statement in error. Also see message G206 or G975 in IMS Messages and Codes, Volume 2: Non-DFS Messages.

Severity: 16

---

Severity: 16

**IOHG207E**  
SYSID OPERAND IS INVALID.

**Explanation:** One of the following occurred:
- The specified SYSID keyword operand did not contain two parameters.
- The specified parameter was not a decimal value from 1 through 2036.
- The same value was specified for both SYSID parameters.

**System action:** Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.

**User response:** Review the statement in error. Also see message G207 in IMS Messages and Codes, Volume 2: Non-DFS Messages.

Severity: 16

---

Severity: 16

**IOHG208E**  
FPATH OPERAND IS INVALID.

**Explanation:** The FPATH= keyword operand is not one of the following valid specifications: FPATH=YES, FPATH=NO, FPATH=, FPATH=0, or FPATH=size.

**System action:** Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.

**User response:** Review the statement in error. Also see message G208 in IMS Messages and Codes, Volume 2: Non-DFS Messages.

Severity: 16

---

Severity: 16

**IOHG209W**  
OVLY IS INVALID WHEN FPATH=YES. PGMTYPE OPERAND OVLY PARAMETER IS IGNORED.

**Explanation:** This is a warning message. The OVLY parameter of the PGMTYPE= keyword operand is incompatible with FPATH=YES.

**System action:** The OVLY specification is ignored.

**User response:** Review the statement in error. Also see message G209 in IMS Messages and Codes, Volume 2: Non-DFS Messages.

Severity: 16

---

Severity: 2

**IOHG210W**  
CLASS IS INVALID WHEN FPATH=YES. PGMTYPE OPERAND CLASS PARAMETER IS IGNORED.

**Explanation:** This is a warning message. Fast Path does not use class specification for program scheduling.

**System action:** The class specification is ignored.

**User response:** Remove the class specification from the PGMTYPE keyword. Also see message G210 in IMS Messages and Codes, Volume 2: Non-DFS Messages.

Severity: 16

---

Severity: 16

**IOHG211E**  
IQF=YES IS INVALID WHEN FPATH=YES.

**Explanation:** An invalid value was specified for the IQF parameter.

**System action:** Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.

**User response:** Review the statement in error. Also see message G211 in IMS Messages and Codes, Volume 2: Non-DFS Messages.

Severity: 16
IOHG212E  SYSID IS INVALID WHEN FPATH=YES.

Explanation: The SYSID= keyword operand is incompatible with FPATH=YES.

System action: Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.

User response: Review the statement in error. Also see message G212 in IMS Messages and Codes, Volume 2: Non-DFS Messages.

Severity: 16

IOHG213E  FPATH=YES IS INVALID WITH PGMTYPE=BATCH

Explanation: Non-message-driven fast path regions are not supported.

System action: Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.

User response: Review the statement in error. Also see message G213 in IMS Messages and Codes, Volume 2: Non-DFS Messages.

Severity: 16

IOHG214E  GPSB IS INVALID

Explanation: The GPSB= parameter has been incorrectly specified.

System action: Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.

User response: Review the statement in error. Also see message G214 in IMS Messages and Codes, Volume 2: Non-DFS Messages.

Severity: 16

IOHG215E  RESIDENT AND DOPT ARE INVALID WITH GPSB

Explanation: The GPSB= parameter has been specified with either the RESIDENT parameter or the DOPT parameter. The RESIDENT and DOPT parameters are mutually exclusive with the GPSB= parameter. The RESIDENT or DOPT parameter is ignored.

System action: Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.

User response: Review the statement in error. Also see message G215 in IMS Messages and Codes, Volume 2: Non-DFS Messages.

Severity: 16

IOHG216E  LANG IS ONLY VALID WITH GPSB

Explanation: The LANG= parameter was specified, but the GPSB= parameter was not specified.

System action: Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.

User response: Review the statement in error. Also see message G216 in IMS Messages and Codes, Volume 2: Non-DFS Messages.

Severity: 16

IOHG217E  LANG IS INVALID

Explanation: The LANG= parameter has been incorrectly specified. The value specified must be ASSEM, COBOL, PL/I, or PASCAL.

System action: Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.

User response: Review the statement in error. Also see message G217 in IMS Messages and Codes, Volume 2: Non-DFS Messages.

Severity: 16

IOHG218E  GPSB OPERAND IS INVALID

Explanation: One of the following occurred:

• The GPSB= parameter does not begin with an alphabetic character, or it contains more than eight alphanumeric characters.

• The value begins with the string ‘DFS’ or ‘DBCDM’, or it contains a reserved word.

System action: Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.

User response: Review the statement in error. Also see message G218 in IMS Messages and Codes, Volume 2: Non-DFS Messages.

Severity: 16

IOHG219E  PSB IS INVALID WITH GPSB

Explanation: Both the PSB= and GPSB= keywords were specified. These keywords are mutually exclusive.

System action: Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.

User response: Review the statement in error. Also see message G219 in IMS Messages and Codes, Volume 2: Non-DFS Messages.

Severity: 16
IOHG220E • IOHG306E

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**IOHG220E**  
**LANG=JAVA INVALID WHEN FPATH=Yes**  
**Explanation:** A Fast Path potential or Fast Path exclusive transaction cannot specify LANG=JAVA.  
**System action:** None. The syggen fails. In batch mode, the job ends with a specified condition code. In online mode, the /MODIFY request is canceled.  
**User response:** Remove LANG=JAVA from any Fast Path transactions.  
**Severity:** 2

---

**IOHG221E**  
**TRANSTAT OPERAND IS INVALID**  
**Explanation:** Validation of the TRANSTAT keyword value failed.  
**System action:** Syntax checking continues, but the fast SYSGEN process will not produce any updated control block modules.  
**User response:** Correct the TRANSTAT value specified.  
**Severity:** 12

---

**IOHG300E**  
**TRANSACT SPECIFICATION CANNOT PRECEDE APPLCTN**  
**Explanation:** The TRANSACT statement must be used in conjunction with a preceding APPLCTN statement.  
**System action:** Syntax checking continues, but the fast Syggen process will not produce any updated control block modules.  
**User response:** Review the statement in error. Also see message G300 in *IMS Messages and Codes, Volume 2: Non-DFS Messages*.  
**Severity:** 16

---

**IOHG301W**  
**LWA OPERAND IS INVALID; DEFAULT ASSUMED**  
**Explanation:** The LWA parameter was specified with an invalid value (not YES or NO). The default specified on the IMSGEN macro for DCLWA is assumed.  
**System action:** The LWA value is set to the default.  
**User response:** Review the statement in error. Also see message G301 in *IMS Messages and Codes, Volume 2: Non-DFS Messages*.  
**Severity:** 16

---

**IOHG303W**  
**PRIORITY VALUES FOR TRANSACTION CODES USED BY BATCH PROGRAMS MUST BE NULL; SPECIFIED PRIORITY VALUES RESET TO ZERO.**  
**Explanation:** One of the following occurred:  
- The value begins with the string DFS or DBCDM, or it contains a reserved word.  
- The list can include one or more of the following: EDIT, INQ/INQUIRY, MODE, MSGTYPE, PARLIM, PROCLIM, PRTY, SCHD, SEGNO, SEGSIZE, SPA, or SYSID.  
By operand, one of the listed errors was detected.  
- EDIT  
  - More than two parameters were specified.  
  - The first parameter was not specified as UC or ULC.  
  - The second parameter was not specified as a 1- to 8-character alphanumeric name that begins with an alphabetic character.
• INQ/INQUIRY
  – More than two parameters were specified.
  – A parameter was not specified as YES, NO, RECOVER or NORECOV.
  – NORECOV and SPA were both specified.
  – Incompatible parameters were specified. For example, INQ=(YES,NO) or INQ=(NO,NORECOV).
• MODE
  – More than one parameter was specified.
  – A parameter other than SNGL or MUL was specified.
• MSGTYPE
  – More than three parameters were specified.
  – A parameter was not specified as MULTSEG, SNGLSEG, NONRESPONSE, RESPONSE, or not specified as a decimal number from 1 to 999, and less than the specified or default value of the IMSCTRL statement MAXCLAS key operand.
  – An invalid combination of parameters was specified.
• PARLIM
  – SCHDTYPE=PARALLEL was not specified for the preceding APPLCTN macro instruction statement.
  – The parameter was not specified as a decimal number from 1 to 32767.
• PROCLIM
  – More than two parameters were specified.
  – One of the parameters was not specified as a decimal number from 1 to 65535.
• PRTY
  – More than three parameters were specified.
  – The first or the second parameter was not specified as a decimal number from 1 to 14.
  – The third parameter was not specified as a decimal number from 1 to 65535.
• SCHD
  – More than one parameter was specified.
  – The specified parameter was not a decimal number from 1 to 4.
• SEGNO and/or SEGSIZE
  – More than one parameter was specified.
  – The specified parameter was not a decimal number from 1 to 65535.
• SPA
  – More than two subparameters were specified.
  – The first subparameter was not a decimal number from 16 to 32767.
  – The second subparameter was not the character STRUNC or RTRUNC.
• SYSID
  – The operand did not contain two parameters.
  – The specified parameters were not a decimal value from 1 through 2036.
  – The same value was specified for both SYSID parameters.
  – The parameter cannot be specified for a Fast Path exclusive transaction.

System action: Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.

User response: Review the statement in error. Also see message G306 in IMS Messages and Codes, Volume 2: Non-DFS Messages.

Severity: 16

---

IIHG307E  THE FOLLOWING ARE DUPLICATE TRANSACTION CODES: aaaaaaaa

Explanation: A specified transaction code name was previously specified as a transaction code name.

System action: Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.

User response: Review the statement in error. Also see message G307 or G976 in IMS Messages and Codes, Volume 2: Non-DFS Messages.

Severity: 16

---

IIHG309E  CODE OPERAND IS OMITTED OR INVALID. SPECIFIED TRANSACTION CODE - aaaaaaaa

Explanation: One of the following occurred:
• The CODE operand was not specified.
• The parameter contained a null subparameter.
• The parameter was not specified as a 1- to 8-character alphanumeric name.

System action: Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.

User response: Review the statement in error. Also see message G309 in IMS Messages and Codes, Volume 2: Non-DFS Messages.

Severity: 16

---

IIHG310E  TRANSACT MACRO INVALID FOR FAST PATH NON-MESSAGE DRIVEN APPL PROGRAM.

Explanation: Fast Path non-message-driven application programs are not allowed to issue file calls to retrieve or insert terminal messages. TRANSACT macros following a Fast Path non-message-driven APPLCTN macro are therefore invalid.

System action: Syntax checking continues, but the Fast
Sysgen process will not produce any updated control block modules.

User response: Remove all TRANSACT macros following the APPLCTN macros with FPATH=YES and PGMTYPE=BATCH specified.

Severity: 16

IOHG311E  SPA OPERAND(S) INVALID FOR FAST PATH APPLICATION PROGRAMS.

Explanation: Fast Path does not support conversational transactions.

System action: Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.

User response: Remove the SPA= keyword operand specification on all Fast Path transactions.

Severity: 16

IOHG313E  IMS/VS BMP APPLICATION INCOMPATIBLE WITH FAST PATH POTENTIAL TRANSACTION.

Explanation: Fast Path does not support Fast Path potential transactions on BMP application programs.

System action: The specified edit routine name is ignored.

User response: Remove the FPATH= keyword operand from the TRANSACT macro or convert the BMP application to an MPP.

Severity: 16

IOHG313W  TRANSACTION EDIT TABLE IS FULL. CURRENT REQUEST IS IGNORED

Explanation: More than 255 transaction edit routine names were specified.

System action: The specified edit routine name is ignored.

User response: Review the edit routine names specified and reduce the number of routine names to less than 255.

Severity: 2

IOHG314W  FAST PATH TRANSACTION MUST BE MODE=SNGL. MODE RESET TO SNGL.

Explanation: This is a warning message. Fast Path only supports transactions that are specified as MODE=SNGL.

System action: The MODE= specification is changed to MODE=SNGL.

User response: Specify MODE=SNGL or remove the MODE keyword operand.

Severity: 2

IOHG315W  FAST PATH TX MUST BE MSGTYPE=(SNGLSEG,RESPONSE). MSGTYPE RESET TO (SNGLSEG,RESPONSE).

Explanation: Fast Path only supports transactions that are specified as MSGTYPE=(SNGLSEG,RESPONSE). This is a warning message only.

System action: The MSGTYPE= specification is changed to MSGTYPE=(SNGLSEG,RESPONSE).

User response: Change the MSGTYPE keyword operand to specify MSGTYPE=(SNGLSEG,RESPONSE) or eliminate the specification.

Severity: 2

IOHG317W  MAXRGN OPERAND INVALID, DEFAULT ASSUMED

Explanation: One of the following occurred:

- More than one value was specified for the MAXRGN= keyword on the TRANSACT macro.
- If the value is not zero, then PARM= is not specified.
- The MAXRGN= keyword is not a value from 0 through 255.

System action: The default value of 0 is used.

User response: Review the statement in error. Also see message G317 in IMS Messages and Codes, Volume 2: Non-DFS Messages.

Severity: 2

IOHG318W  SERIAL OPERAND INVALID, DEFAULT ASSUMED

Explanation: One of the following occurred:

- More than one value was specified for the SERIAL= keyword on the TRANSACT macro.
- The PARM= keyword has a value specified.
- The SERIAL= keyword is not set to YES, NO, or null.

System action: The default value of NO is used.

User response: Review the statement in error. Also see message G318 in IMS Messages and Codes, Volume 2: Non-DFS Messages.

Severity: 2
IOHG582  SYSID SPECIFICATION OMITTED OR INVALID

Explanation: The SYSID= specification on an MSNAME macro was in error. One of the following occurred:
- The required operand was not specified.
- The operand was not specified as two numeric parameters, both being between the range of 1 and 2036.
- The value of the first parameter is identical to the second.

System action: Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.

User response: Review the SYSID specification on the statement in error. Also see message G582 in IMS Messages and Codes, Volume 2: Non-DFS Messages.

Severity: 8

IOHG851E  REMOTE SYSID ssss SPECIFIED FOR TRAN tttttttt IS NOT A VALID REMOTE SYSID

Explanation: A remote system ID, specified in the SYSID= keyword operand of a TRANSACT or APPLCTN statement, was not specified as a remote system ID in any MSNAME statement in the input to this IMS system definition.

System action: Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.

User response: Review the SYSID specified and correct the SYSID specification on either the TRANSACT/APPLCTN statement or the MSNAME statement.

Severity: 16

IOHG962E  LOCAL SYSID ssss SPECIFIED FOR TRAN tttttttt WAS DEFINED AS A REMOTE SYSID

Explanation: A local system ID, specified in the SYSID= keyword operand of a TRANSACT or APPLCTN statement, was specified as a remote system ID in an MSNAME statement.

System action: Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.

User response: Review the SYSID specified and correct the SYSID specification on either the
IOHG965W • IOHG1005E

TRANSACT/APPLCTN statement or the MSNAME statement.

Severity: 8

IOHG965W NO FAST PATH APPLCTN SPECIFICATIONS

Explanation: This is a warning message. The FPCTRL macro was coded, but no Fast Path application programs were specified.

System action: The FPCTRL macro statement is ignored. Processing continues.

User response: Remove the FPCTRL macro specification, or define at least one Fast Path application program.

Severity: 2

IOHG1000E RTCODE SPECIFICATION CANNOT PRECEDE APPLCTN.

Explanation: The RTCODE statement must be used in conjunction with a preceding APPLCTN statement.

System action: Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.

User response: Review the statement in error. Also see message G1000 in IMS Messages and Codes.

Severity: 16

IOHG1002E RTCODE MUST FOLLOW FAST PATH MSG-DRIVEN APPLCTN SPEC.

Explanation: The RTCODE specification is only valid for Fast Path message-driven application programs. RTCODE specifications are used to route transactions to the correct application program. Non-message-driven programs cannot retrieve input messages and process them.

System action: Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.

User response: Review the statement in error. Also see message G1002 in IMS Messages and Codes.

Severity: 16

IOHG1003E THE FOLLOWING ARE DUPLICATE ROUTING CODES: aaaaaaaa

Explanation: A specified routing code name was previously specified as a routing code name.

System action: Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.

User response: Review the statement in error. Also see message G1003 or G980 in IMS Messages and Codes, Volume 2: Non-DFS Messages.

Severity: 16

IOHG1004E CODE OPERAND IS OMITTED OR INVALID.

Explanation: One of the following occurred:
- The CODE operand was not specified.
- The parameter contained a null subparameter.
- The parameter or subparameter was not specified as a 1-8 character alphanumeric name.
- The value begins with the string 'DFS' or 'DBCDM', or it contains a reserved word.

System action: Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.

User response: Review the statement in error. Also see message G1004 in IMS Messages and Codes, Volume 2: Non-DFS Messages.

Severity: 16

IOHG1005E INQ/INQUIRY OPERAND IS INVALID.

Explanation: One of the following occurred:
- More than one parameter was specified.
- The parameter specified was not YES or NO.
- Both INQ and INQUIRY parameters were specified.

System action: Syntax checking continues, but the Fast Sysgen process will not produce any updated control block modules.

User response: Review the statement in error. Also see message G1005 in IMS Messages and Codes, Volume 2: Non-DFS Messages.

Severity: 16
Chapter 23. Gathering diagnostic information

Before you report a problem with IMS HP Sysgen Tools to IBM Software Support, gather the appropriate diagnostic information.

Procedure

Provide the following information for all IMS HP Sysgen Tools problems:
- A clear description of the problem and the steps that are required to re-create the problem
- All messages that were issued as a result of the problem
- Product release number and the number of the last program temporary fix (PTF) that was installed
- The version of IMS that you are using and the type and version of the operating system that you are using

Provide additional information based on the type of problem that you experienced:

For online abends, provide the following information:
- A screen capture of the panel that you were using when the abend occurred
- The job log from the TSO session that encountered the abend
- The job log from the server
- A description of the task that you were doing before the abend occurred

For errors in batch processing, provide the following information:
- The complete job log
- Print output
- Contents of the data sets that were used during the processing
Part 6. Appendixes
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