IBM IMS Cloning Tool for z/OS
Version 1  Release 2

User's Guide

IBM
Note:

Before using this information and the product it supports, read the information in “Notices” on page 437.
## Contents

### Tables

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>About this information</td>
<td>vii</td>
</tr>
<tr>
<td>Service updates and support information</td>
<td>vii</td>
</tr>
<tr>
<td>Highlighting conventions</td>
<td>vii</td>
</tr>
<tr>
<td>How to look up message explanations</td>
<td>vii</td>
</tr>
<tr>
<td>Searching an information center</td>
<td>vii</td>
</tr>
<tr>
<td>Using a Web search</td>
<td>vii</td>
</tr>
<tr>
<td>Using LookAt</td>
<td>vii</td>
</tr>
<tr>
<td>How to send your comments</td>
<td>ix</td>
</tr>
</tbody>
</table>

### Chapter 1. IMS Cloning Tool overview

1. Cloning with IMS Cloning Tool
2. Cloning terminology
3. Cloning IMS subsystems
4. IMS support
5. Features and benefits
6. Supported volume copy tools
7. Volume-level fast replication tools
8. Onsite mirroring and P.I.T. copy tools
9. Filtering pattern masks
10. Messages
11. Accessibility features
12. Summary of changes

### Chapter 2. Customizing IMS Cloning Tool

1. Planning for IMS Cloning Tool
2. Prerequisites
3. Data resources
4. Data sets
5. Authorization
6. Validate load module contents
7. Configuration
8. Step 1: Run GCLIMRG
9. Step 2: Set the keywords in the GCLINI SGCLPARM member
10. Step 3: Modify the GCL members in hlq.SGCLJCL
11. Step 4: APF-authorize the SGCLLOAD library on all systems
12. Step 5: Prevent unauthorized use of IMS Cloning Tool
13. Step 6: Enable IMS Cloning Tool in your IMS online and batch jobs
14. Step 7: Specify mask characters for your EBCDIC code set
15. Step 8 (ISPF interface only): Create the VSAM repository
16. Step 9 (ISPF interface only): Create the IMS control file
17. Step 10 (ISPF interface only): Customize the CLIST
18. Step 11: Verify that customization was successful
19. Step 12: Configuring for database cloning

### Chapter 3. Using IMS Cloning Tool – IMS subsystem cloning

1. Planning to clone an IMS subsystem
2. Selection of source and target volumes
3. Volume relationship conflicts
4. Data set renaming considerations
5. Target ICF catalog considerations
6. Location of the source and target ICF catalogs
7. Target data set ICF catalog aliases
8. Return code choices
9. Setting up to copy volumes with FlashCopy or SnapShot
10. Overview: Steps for Creating Volume Copies with FlashCopy or SnapShot
11. Step 1: FINDUCATS step (optional)
12. Step 2: Quiesce source volume activity
13. Step 3: Copy step
14. Step 4: Resume access to the source volumes
15. Step 5: RENAME step
16. Step 6: IMS cloning
17. Step 7: Access the target volumes
18. Step 8: BCSCLEAN step (optional but recommended)
19. Setting up to copy volumes with onsite mirroring tools
20. Overview: Steps for creating copies with mirroring tools
21. Overview: Steps for cloning volumes with EMC TimeFinder/Mirror
22. Cloning IMS subsystems
23. IMS Offline Cloning Procedures
24. IMS Online Cloning Procedures

### Chapter 4. Using IMS Cloning Tool – Refreshing databases

1. Planning for copying IMS databases
2. Considerations for in-progress Read/Write activity
3. Considerations for IMS Cloning Tool database cloning copy
4. Considerations for data set renaming
5. Return code choices
6. Databases not supported
7. Database registration rules
8. IMS Cloning Tool database refresh jobs
9. When using FlashCopy or SnapShot
10. When using other copy methodologies
11. When using any methodology
12. Setup procedures for copy by data set with FlashCopy or SnapShot

### GCLINI configuration values

<table>
<thead>
<tr>
<th>Configuration</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syntax rules</td>
<td>30</td>
</tr>
<tr>
<td>GCLINI keyword syntax and descriptions</td>
<td>32</td>
</tr>
</tbody>
</table>

### Summary of changes
Overview: Setup for FlashCopy/SnapShot 95
Setup procedures for all other copy methodologies 103
Overview: Setup for other copy methodologies 103
Refreshing IMS databases 114
Copy Procedure 1: FlashCopy/SnapShot setup 114
Copy Procedure 2: All other copy methodologies 115

Chapter 5. Using the ISPF interface 119
The IMS Cloning Tool ISPF interface 119
Configuring IMS subsystems 120
Configuring a subsystem 120
Configuring user settings 121
Setting user defaults (job card and work data sets) 121
Setting subsystem cloning defaults 122
Setting database refresh defaults 132
Creating cloning jobs using the interface 140
Creating a profile 140
Subsystem cloning 141
Subsystem cloning steps summary 141
Select source and target subsystems 142
Specify source and target volume pairings 143
Specify source and target ICF catalogs 144
Specify rename masks for source and target data sets 144
Build the cloning jobs from a profile 144
Submit the jobs 145
Refreshing databases 146
Database refresh steps summary 146
Edit the source job 146
Build the database refresh jobs from a profile 148
Submit the jobs 149

Chapter 6. Masking data while refreshing databases 151
Overview: Masking data with IMS Cloning Tool 151
Step 1: Add the DATA-MASKING keywords to IMSDBREFRESH 152
Step 2: Create a MASKDEF member containing MASKDEF commands and keywords 154
Command and keyword syntax for the MASKRULE command 159
Step 3: Edit the IMSDBREFRESH job 169
Step 4: Submit the IMSDBREFRESH job 169
Step 5: Reload the target database and rebuild associated indexes 169
Restarting or re-running a IMSDBREFRESH job with data masking 169

Chapter 7. Cloning scenarios 171
Volume cloning using an interim set of volumes 171
Cloning an IMS Subsystem from an IMS Recovery Expert backup when backup volumes are online 174
Cloning an IMS Subsystem from an IMS Recovery Expert backup when backup volumes are offline 179

Chapter 8. Reference: IMS Cloning Tool Commands 185
BCSCLEAN 186
COPY 188
COPYCHECK 204
IMSSETLOG 207
IMSSTART 208
IMSSTOP 213
IMSUPDATE 217
FINDUCATS 227
JRNLUPTGRADE 229
ONLINECLIP 232
RENAME 234
UCATOPTIONS 249
VARYOFF 252
VARYON 257
VOLOPTIONS 261

Chapter 9. Reference: Database refresh commands 267
IMSDBSTOP 267
IMSDBSTART 271
IMSDBREFRESH 273
IMSDBCLEAN 288

Chapter 10. Reference: Messages 291
Notices 437
Programming interface information 439
Trademarks 440

Bibliography 441
Index 443
## Tables

1. ACS masking characters used in filtering masks  6  
2. DD statements for the GCLMLVL JCL .... 17  
3. IMS Cloning Tool Configuration Overview 18  
4. Database Cloning Configuration Steps 29  
5. Data set integrity rules 49  
6. IMS Cloning Tool Creating volume copies with FlashCopy or SnapShot Overview 57  
7. IMS Cloning Tool Creating volume copies with Mirroring Tools 61  
8. IMS Cloning Tool Cloning volumes with EMC TimeFinder/Mirror 63  
9. Overview: Cloning an IMS subsystem to allow another IMS subsystem to access the renamed data sets on the target volumes 68  
10. Overview: Cloning an IMS data-sharing subsystem and removing members 70  
11. Overview: Cloning an IMS data-sharing subsystem to a non-data-sharing target 72  
12. Overview: Cloning an IMS subsystem to allow another IMS subsystem to access the renamed data sets on the target volumes 76  
13. Overview: Cloning an IMS data-sharing subsystem and removing members 78  
14. Overview: Cloning an IMS data-sharing subsystem to a non-data-sharing target 81  
15. Object attributes that must be identical for source and target object 86  
16. IMS Cloning Tool Setting up for using FlashCopy/SnapShot 95  
17. IMS Cloning Tool Setting up for using Other Copy Methodologies 103  
18. FlashCopy/SnapShot Setup Overview 114  
19. Other Methodologies Setup Steps 115  
20. Database refresh DD descriptions on the IMS database refresh DD Specification panel 134  
21. Declaration examples 161  
22. Character generation examples 162  
23. String selector examples 162  
24. Static value examples 162  
25. Repeat count of characters enclosed in square brackets 163  
26. Character generation examples 164  
27. String selector examples 164  
28. Static value examples 164  
29. Steps for volume cloning procedure 171  
30. IMS Cloning Tool commands overview 185  
31. Filter characters allowed for old name filter masks 235  
32. Filter characters allowed for new name filter masks 236  
33. IMS Cloning Tool database refresh commands overview 267  
34. GLOBAL parameter defaults setting by IMS Cloning Tool 279  
35. GLOBAL values set during processing by IMS Cloning Tool Database Refresh 279  
36. Filter characters allowed for old name filter masks 284  
37. Filter characters allowed for new name filter masks 284
About this information

IBM® IMS™ Cloning Tool for z/OS® (also referred to as IMS Cloning Tool) is a tool you can use to clone IMS subsystems and databases.

This user's guide provides instructions for using IMS Cloning Tool. To use the procedures in this user's guide, you must have already installed IMS Cloning Tool using the SMP/E installation process that came with the product.

This user's guide is designed to help database administrators, system programmers, application programmers, and system operators perform the following tasks:

- Plan for the installation of IMS Cloning Tool
- Install and operate IMS Cloning Tool
- Configure your IMS Cloning Tool environment
- Diagnose and recover from IMS Cloning Tool problems

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

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

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

Always check the IMS Tools Library page for the most current version of this publication:


Service updates and support information

To find service updates and support information, including software fix packs, PTFs, Frequently Asked Questions (FAQs), technical notes, troubleshooting information, and downloads, refer to the following Web page:


Highlighting conventions

This information uses the following highlighting conventions:

- **Boldface** type indicates commands or user interface controls such as names of fields, folders, icons, or menu choices.
- Monospace type indicates examples of text that you enter exactly as shown.
- *Italic* type indicates variables that you should replace with a value, to indicate the titles of other publication, and to emphasize significant terms.
How to look up message explanations

You can use any of the following methods to search for messages and codes:

Searching an information center

In the search box that is located in the top left toolbar of any Eclipse help system, such as the IBM Information Management Software for z/OS Solutions Information Center, enter the number of the message that you want to locate. For example, you can enter DFS1065A in the search field.

Use the following tips to help you improve your message searches:

- You can search for information on codes by entering the code; for example, enter -327.
- Enter the complete or partial message number. You can use wild cards (* or ?) in the message number to broaden your search; for example, DFS20??I.

The information center contains the latest message information for all of the information management products that are included in the information center.

Using a Web search

You can use any of the popular search engines that are available on the Web to search for message explanations. When you type the specific message number or code into the search engine, you will be presented with links to the message information in IBM information centers.

Using LookAt

LookAt is an online facility that you can use to look up explanations for most of the IBM messages you encounter, as well as for some system abends and codes. Using LookAt to find information is faster than a conventional search because in most cases LookAt goes directly to the message explanation.

You can use LookAt from the following locations to find IBM message explanations for z/OS elements and features, z/VM®, VSE/ESA, and Clusters for AIX® and Linux:

- Your z/OS TSO/E host system. You can install code on your z/OS or z/OSe systems to access IBM message explanations, using LookAt from a TSO/E command line (for example, TSO/E prompt, ISPF, or z/OS UNIX System Services running OMVS).
- Your Microsoft Windows workstation. You can install code to access IBM message explanations on the z/OS Collection (SK3T-4271) using LookAt from a Microsoft Windows command prompt (also known as the DOS command line).
- Your wireless handheld device. You can use the LookAt Mobile Edition with a handheld device that has wireless access and an Internet browser (for example, Internet Explorer for Pocket PCs, Blazer, or Eudora for Palm OS, or Opera for Linux handheld devices). Link to the LookAt Mobile Edition from the LookAt Web site.

You can obtain code to install LookAt on your host system or Microsoft Windows workstation from a disk on your z/OS Collection (SK3T-4271) or from the LookAt
Web site (click Download, and select the platform, release, collection, and location that suit your needs). More information is available in the LOOKAT.ME files available during the download process.

**How to send your comments**

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

- Use the online reader comment form, which is located at: [www.ibm.com/software/data/ref/](http://www.ibm.com/software/data/ref/)

- Send your comments by e-mail to comments@us.ibm.com. Be sure to include the name of the book, the part number of the book, the version of IMS Cloning Tool, and, if applicable, the specific location of the text you are commenting on (for example, a page number or table number).
Chapter 1. IMS Cloning Tool overview

IBM IMS Cloning Tool for z/OS, V1.2 makes it easy for you to quickly clone IMS subsystems and databases in order to increase data availability. By employing fast copy technology combined with automation and by eliminating manual efforts, IMS Cloning Tool will help to increase productivity and significantly reduce production online downtime and the costs associated with creating an exact copy or cloning an IMS subsystem and database.

By augmenting any volume-level or data-set-level fast replication tool or onsite mirroring tool, IMS Cloning Tool can quickly clone an IMS subsystem while the subsystem is offline (while IMS is stopped and started) or online (IMS is suspended and resumed), increasing the availability of IMS data. After the clone is created, the IMS data sets are conditioned so that the source subsystem and the subsystem clone can be accessed from the same z/OS image.

Every hardware vendor and some software vendors use replication products to create replicas of data. However, these products rarely rename and catalog the data sets on the target volumes to produce usable clones that can be quickly accessed. IMS Cloning Tool (GCL) provides a solution. IMS Cloning Tool can leverage fast-replication tools or onsite mirroring tools to create the clones and then “condition” the IMS data sets on the target to allow the IMS clone data to be accessed.

IMS Cloning Tool assumes that both the source and target volumes will be accessed from the same z/OS image by using the same ICF master catalog. To enable access to the data sets on the target volumes (clone volumes), the target data sets are rename and cataloged. The customer is responsible for ensuring that the volume serial numbers (VOLSERs) of the source and target volumes are unique.

The target volumes are exact replicas of the source volumes with the exception of the volume label. To create these replicas, IMS Cloning Tool leverages the available fast-replication and onsite mirroring tools.

To create the copy, IMS Cloning Tool automatically initiates IBM FlashCopy® or STK SnapShot by means of the DFSMSdss ADRDSSU program. If another copy tool is used, it must be run prior to IMS Cloning Tool.

After the copy is created, IMS Cloning Tool renames and catalogs the data sets on the target volumes, fixes the volume internals, and updates the IMS internals. This processing enables you to access the source and target volumes from the same z/OS image.

IMS Cloning Tool provides a significant improvement over the existing manual methods of creating usable clones. It can clone entire IMS subsystems while the subsystems are in offline or online mode, and solves the dilemma of meeting critical time constraints on the IMS cloning window. IMS Cloning Tool is designed to minimize the amount of time that is required to rename and catalog target-volume data sets.

IMS Cloning Tool can be used to perform the following tasks:

• Clone entire IMS subsystems or refresh databases quickly
Clone databases on the same LPAR without manually updating data set and volume names
Copy production data for testing purposes

The following are the key highlights of IMS Cloning Tool:
- Automates the cloning process of IMS subsystems and databases
- Significantly reduces the time it takes customers to clone their IMS data (both subsystems and databases)
- Reduces source outage by using fast replication to copy the data quickly
- Eliminates time to code and maintain programs for each scenario (build or refresh)
- Capability to use IMS data easily from the same image
- Eliminates the time-consuming and laborious manual efforts associated with cloning, therefore increasing productivity
- Leverages fast copy technology (if available)

**Cloning with IMS Cloning Tool**

Every hardware vendor and some software vendors use replication products to create replicas of data.

However, these products rarely rename and catalog the data sets on the target volumes to produce usable clones that can be quickly accessed. IMS Cloning Tool (IMS Cloning Tool) provides a solution. IMS Cloning Tool is a vendor-independent tool for providing quick access to volume-level clones of IMS subsystems. IMS Cloning Tool leverages fast-replication tools or onsite mirroring tools to create the clones and then “conditions” the IMS data sets on the target to enable you to access the IMS clone data.

IMS Cloning Tool assumes that both the source and target volumes will be accessed from the same z/OS image by using the same ICF master catalog. To enable access to the data sets on the target volumes (clone volumes), IMS Cloning Tool renames and catalogs the target data sets. You are responsible for ensuring that the volume serial numbers (VOLSERs) of the source and target volumes are unique.

The target volumes are exact replicas of the source volumes with the exception of the volume label. To create these replicas, IMS Cloning Tool leverages the following fast-replication and onsite mirroring tools:
- IBM FlashCopy®
- IBM PPRC®
- STK SnapShot™
- EMC TimeFinder/Snap™
- EMC TimeFinder/Mirror
- Softek Replicator™
- Innovation Data Processing FDRPAS™

To create the copy, IMS Cloning Tool automatically initiate IBM FlashCopy or STK SnapShot by means of the DFSMSdss ADRDSSU program. If you use another copy tool, you must run it prior to running IMS Cloning Tool.
After the copy is created, IMS Cloning Tool renames and catalogs the data sets on the target volumes, fixes the volume internals, and updates the IMS internals. This processing enables you to access the source and target volumes from the same z/OS image.

IMS Cloning Tool provides a significant improvement over the existing manual methods of creating usable clones. It can clone entire IMS subsystems while the subsystems are in offline or online mode. Also, IMS Cloning Tool solves the dilemma of meeting critical time constraints on the IMS cloning window. IMS Cloning Tool is designed to minimize the amount of time that is required to rename and catalog target-volume data sets.

**Cloning terminology**

This section describes terms and phrases used in the cloning process.

A *clone* is an exact replica of a set of IMS data. The clone and the original data are indistinguishable.

*Cloning* is the act of replicating data and making the replica accessible so that it can be used in lieu of the original data.

*Replication tools* clone data. IMS Cloning Tool leverages volume-level and data-set-level replications tools to create clones of IMS data and then makes the clones quickly accessible from the same z/OS image on which the source volumes reside.

*Conditioning* is the IMS Cloning Tool process of updating the IMS internal information for the cloned target subsystems, volumes, and data sets. IMS Cloning Tool can update the IMS subsystem IDs, volsers, and data set names in the RECON and PROCLIB data sets; and the data sets names in the MDALIB data sets.

*Source volumes* are the DASD volumes on which the original data that is replicated resides.

*Target volumes* are the DASD volumes on which the clones are created.

**Cloning IMS subsystems**

IMS Cloning Tool provides increases the availability of IMS data by augmenting any volume-level or data-set-level fast replication tool or onsite mirroring tool to quickly clone an IMS subsystem while the subsystem is offline (while IMS is stopped) or online (IMS is momentarily suspended).

After the clone is created, IMS Cloning Tool conditions its IMS data sets so that you can access the original subsystem and the cloned subsystem from the same z/OS image. IMS Cloning Tool increases productivity in several ways:

- Significantly reduces the amount of time that the production system is down for cloning an IMS subsystem – what used to take hours or days now takes only minutes.
- Reduces the costs and personnel time that are required for cloning an IMS subsystem at your site.
• Helps improve IMS availability and services to customers because IMS internal information is “conditioned” automatically – not by using the time consuming traditional methods.
• Provides quicker throughput and a faster turnaround time.
• Helps you to provide virtually continuous access to IMS data.
• Creates quality assurance and test environments quickly.

Although fast replication tools can replicate a group of data within minutes to provide duplicate IMS environments, these clones have an inherent problem: the internal volume name, volume internals, and all data set names reflect the source volume. IMS Cloning Tool solves this problem.

**IMS support**

An IMS subsystem can be cloned only when it is offline (IMS is stopped) or online (IMS is momentarily suspended).

The clone can be created on the same LPAR as the original subsystem or on a separate LPAR. IMS Cloning Tool updates internal IMS control information to reflect the target IMS subsystem names.

When cloning IMS subsystems in a data sharing environment, you can either reduce the number of IMS subsystems, or go from a data sharing to a non-data sharing environment.

**Features and benefits**

IMS Cloning Tool offers these features and benefits:
• Quickly fixes volume conflicts (VTOC, VTOCIX and VVDS) and then renames and recatalogs the target data sets to solve the data access problem
• Enables you to clone offline IMS subsystems in minutes instead of days, without requiring a separate image
• Automatically updates IMS internal information to reflect renamed data sets.
• Supports data sharing across multiple IMS subsystems in a parallel sysplex environment by cloning not only entire IMS systems and their associated databases, but also select IMS databases on the same or shared LPAR but cloning all IMS subsystems in a data sharing group or just a subset of them.
• Provides for the automatic pairing of volume characteristics (SMS and non-SMS, or by device size).
• Runs IBM FlashCopy or STK SnapShot copies by using VOLSER masks or SMS storage groups or a combination thereof to eliminate the requirement for individual volume specification
• Provides extensive SMS options for determining how the SMS class constructs will be applied to cloned data sets so that you can ensure that these data sets are managed correctly
• Issues DFSMSdss commands to transparently initiate FlashCopy or SnapShot – no additional JCL is needed to run these tools
• Concurrently collects source-volume ICF catalog information and initiates FlashCopy/SnapShot copies for renaming integrity
• Resumes source volume activity shortly after cloning to reduce outages
• Provides enhanced data set rename masking characters for flexibility
- Provides user options for determining the disposition of “abnormal” data sets and catalog entries
- Performs data-integrity checking for multivolume data sets and VSAM spheres to prevent orphaned data
- Records renamed data sets in the existing, populated ICF catalogs or a catalog that you specify
- Provides for faster cataloging than conventional methods
- Tests for termination of FlashCopy or SnapShot relationships
- Provides mechanism for removing orphaned catalog entries from previous executions
- Enables you to run most IMS Cloning Tool commands in simulation mode

### Supported volume copy tools

IMS Cloning Tool can rename and catalog the data sets that you create on target volumes by using any type of replication tool, provided that the target volumes are exact replicas of the source volumes.

If the target volumes still have the source volume serial number (VOLSER) and are varied offline, IMS Cloning Tool can re-label the target volumes and vary them online.

Supported volume copy tools include:
- Fast replication tools (hardware and software based) that create snapshot copies almost instantaneously, for example, IBM FlashCopy and STK SnapShot
- Onsite mirroring tools (hardware and software based) that can establish and then split mirrors to create point-in-time copies, for example, IBM PPRC and EMC TimeFinder/Mirror
- Other point-in-time copy tools (software based only), for example, Softek Replicator and Innovation Data Processing FDRPAS.

**Note:** Exact replicas: Except for the internal volume serial number, a target volume must be an exact replica of the corresponding source volume. IMS Cloning Tool does not support copies that have been partially modified, for example, volume snaps created by using the SIBBATCH program where the SYS1.VVDS and SYS1.VTOCIX names might have already been modified.

### Volume-level fast replication tools

If you use the IBM FlashCopy or STK SnapShot tool, IMS Cloning Tool can invoke the tool by means of the DFSMSdss program ADRDSSU to create volume copies almost instantaneously. If you use other fast-replication tools such as EMC TimeFinder/Snap, you must create the snapshot copies prior to running IMS Cloning Tool.

IBM FlashCopy and STK SnapShot can quickly establish a relationship between the source and target volumes to create what appears to be a copy of a volume in mere seconds. After the copy is initiated, you can change both the source and target volumes even though the FlashCopy background copy might still be in progress. The target volume will be a mirror image of the source volume except for the internal VOLSER, which remains “as is” if the DFSMSdss COPY keyword COPYVOLID is not specified. IMS Cloning Tool requires that the target VOLSER label remain “as is” (different from the source VOLSER) so that the target volume
can remain varied online after the copy is initiated; this requirement negates the need for a CLIP (re-label) and VARY ON operation.

Because the logical image of a target volume can be modified before the copy is actually complete, the IMS Cloning Tool RENAME step can be run while the copy is still in progress. Likewise, if the IMS Cloning Tool process completes before a volume is completely copied, the target data can be accessed before the copy is complete.

**Onsite mirroring and P.I.T. copy tools**

As an alternative to using fast replication tools, you can use onsite mirroring tools, such as IBM PPRC and EMC TimeFinder/Mirror to create a mirror image of a volume for IMS Cloning Tool.

You can also use P.I.T. copy tools such as Softek Replicator and Innovation Data Processing FDRPAS. These tools establish a mirror pair of volumes and then split the mirror pair after the target volume is synchronized with the source volume. This process creates a point-in-time (P.I.T) copy. You must complete the steps for establishing and splitting the mirrors prior to running IMS Cloning Tool.

**Filtering pattern masks**

Many commands allow you to specify filtering masks by using the extended ACS masking characters that are shown in the following table.

The following table lists the ACS masking characters used in filtering masks, the hex value of each masking character, and the description of each masking character.

**Important:** Your installation might need to specify different masking characters to achieve the desired result if your code tables are different from the U.S.A. EBCDIC code set.

*Table 1. ACS masking characters used in filtering masks*

<table>
<thead>
<tr>
<th>Masking character</th>
<th>Hex value</th>
<th>Description</th>
</tr>
</thead>
</table>
| * (single asterisk) | 5C        | Represents 0–n characters. This wildcard can be specified at the beginning or end of an item or in both positions. If the wildcard is specified in both positions (for example, *ZREM*), any item that has the character string ZREM anywhere in its name will be selected. This wildcard cannot be specified in the middle of an item unless the item is a data set name. Example:  

*PROD* This mask selects an item if the last four characters are PROD. The starting characters can be any values. |
<table>
<thead>
<tr>
<th>Masking character</th>
<th>Hex value</th>
<th>Description</th>
</tr>
</thead>
</table>
| %                | 6C        | Denotes a single-character placeholder, which can be alphanumeric value or any special character. This character can be used in any position.  
Example:  
CRM%%ER6 This mask will select items that are 8-characters in length, have CRM as the first three characters, and have ER6 as the last three characters. The two middle placeholder values can be any alphanumeric or special characters. |
| <                | 4C        | Similar to the % character except that it is used as a placeholder value for only alpha characters. The < character can be used in any position.  
Example:  
CR<<ER* This mask selects items that have CR as the first two characters, an alpha character as the third and fourth characters, ER as the fifth and sixth characters, and any characters as the ending characters. |
| >                | 6E        | Similar to the % value except that it is used as a placeholder value for only numeric characters. The > character can be used in any position.  
Example:  
CR>>ER*  
This mask selects items that have CR as the first two characters, a numeric character as the third and fourth characters, ER as the fifth and sixth characters, with any characters as the ending characters. |
| ** (double asterisk) |       | Allows compatibility with the standard ACS and DFSMSdss filtering masks. This masking character is used only in partially qualified data set names. It can be used in any qualifier position as a wildcard to represent zero or more qualifiers.  
Example:  
CRFM*.VER.*  
This mask selects data sets that have at least two qualifiers in their names. The first qualifier must start with CRFM, the second qualifier must end with VER, and zero or more qualifiers can follow and be composed of any characters.  
Note that ** cannot appear with any other characters within a qualifier.  
Three or more adjacent * are not allowed within a qualifier.  
**Note:** As with common data set name masking, any combination of *, **, %, <, and > characters can be used in an item mask value. |
Table 1. ACS masking characters used in filtering masks (continued)

<table>
<thead>
<tr>
<th>Masking character</th>
<th>Hex value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>!</td>
<td>5A</td>
<td>Similar to the % value except that it is used as a placeholder value for only national characters based on the U.S.A. EBCDIC code set. These national characters are @, #, and $. The ! masking character can be used in any position.</td>
</tr>
</tbody>
</table>

Messages

Message naming conventions

The product message identifiers (message IDs) are unique and have the format pppmmnnnx

Where:
- ppp is the 3-alpha-character product code, GCL
- mmm is the module identifier
- nn is the message number
- x is the message type:
  - E: error
  - I: information only
  - W: warning

Example 1: GCL31070I would be the message ID for the message that is from the module GCL00310, has a message number of 70, and is an Informational message.

Example 2: GCLVSE12E is the message ID for the message that is from the module GCL01VSE, has a message number of 12, and is an Error message.

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

These guides describe how to use ISPF, including the use of keyboard shortcuts or function keys (PF keys), include the default settings for the PF keys, and explain how to modify their functions.
IMS Cloning Tool uses the standard set of keyboard shortcuts.

Summary of changes

This section summarizes the significant improvements or enhancements to the IMS Cloning Tool User's Guide and refers you to relevant sections of this manual for more information. Minor modifications to the text are not listed.

SC19-2475-03 October 2012

- Additional support for IMS V12 systems that have implemented the repository for resource definitions, IMS catalog, or DEDB secondary indexes (related to APAR PM33374).

- Enhancement to allow users to change the IMSPLEX and DBRCGRP values specified during subsystem cloning (related to APAR PM58598).

- Enhancement to list the jobs in a data set for a database that IMS Cloning Tool was attempting to get exclusive access to (related to APAR PM46790).

- Support the UPDATE DB START(QUIESCE) command for refreshing databases: When performing a database refresh, users can specify the UPDATE DB START(QUIESCE) command to be used to create a consistent copy of a database without taking the databases offline and without causing other applications to encounter an unavailable database. The UPDATE DB START(QUIESCE) command, added in IMS Version 11, is used to stop access to a database for a specified period of time. It is similar to the DBR command in that it will stop access to a database to provide a point for performing a non-fuzzy copy of the database but can create a point of consistency without having to wait for all in process work to complete. The UPDATE DB START(QUIESCE) command quiesces any access to the database at the next checkpoint or commit point for any in-flight work, including BMPs and transactions. The UPDATE DB START(QUIESCE) command is a type-2 command, which requires the CSL address spaces to be active for the IMS environment.

- Support the DB QUIESCE command for refreshing databases: This enhancement allows users to create a consistent copy of a database without taking the databases offline and without causing applications to encounter an unavailable database when performing a database refresh. The DB QUIESCE command, added in IMS Version 11, is used to stop access to a database for a specified period of time. It is similar to the existing DBR command in that it will stop access to a database to provide a point for performing a non-fuzzy copy of the database. The DB QUIESCE command also quiesces any access to the database at the next commit point for any in-flight work, including BMPs and transactions.

- Provide data masking support for refreshing databases: Users can now mask or scramble sensitive data (such as social security numbers, credit card numbers, names, and addresses) when refreshing databases. Data copied from a source database(s) to a target database(s) may be modified during the copy so that the target data in one or more fields may be different from the source data. The changes are made based on masking rules that are enabled during the copy.

- Apply logs after refreshing a database in order to make the database consistent: This enhancement allows users to refresh databases, without taking the source databases offline, and to create target databases that do not have any in-flight units of work. This functionality will be provided by reading the archive logs from the source IMS environment, after a fuzzy copy of the source database has been made, and applying them to the copy or target database. All databases refreshed in the same IMSDBREFRESH command will be updated to the same point of consistency.
• Dynamically define target databases if they do not exist: This enhancement provides the capability to create new databases by copying the definitions (including dynamic allocation members, DBRC definitions, and ACBLIB members) from the source database and adding them to the IMS environment for the target database. Databases will be defined using Dynamic Resource Definitions (DRD).

• New option to delete target database data sets from previous IMSDBREFRESH: This enhancement provides the ability to delete the target database data sets from a previous IMSDBREFRESH to free up the space allocated by the target database data sets after they are no longer needed.

• New option to allow database refresh to continue if some databases cannot be refreshed.

• Support for EMC Timefinder/SNAP for database refresh added.

• New ISPF user interface: The new ISPF user interface can be used to edit JCL before it is submitted.

• Enhancement: A slow copy is now allowed when FASTPREP(PREF) is specified and fast replication is not available.

• Additional support for Preserver Mirror Flash Copy: This enhancement provides support PPRC Preserve Mirror options when FlashCopy is performed and the target volume is a PPRC primary volume. Preserve Mirror reduces the amount of data that must be transferred from the primary storage controller to the secondary storage controller in order to get the target volume back into sync with its PPRC secondary volume. Without the use of Preserve Mirror, the entire contents of the target volumes must be transferred to its PPRC secondary volume. When Preserve Mirror is used, the data is transferred from the source volumes PPRC secondary volume to the target volumes PPRC secondary volume using FlashCopy on the secondary storage controller.

• Additional support for Incremental Flash Copy: This enhancement provides support for using incremental FlashCopy when performing volume-level copies during subsystem cloning. Incremental FlashCopy reduces the amount of data that must be copied in the background by the storage processor when a volume copy request is issued by only copying the changed tracks.

• Additional support for Space Efficient FlashCopy Target Volumes: This enhancement provides support for space-efficient-capable target volumes when performing volume level FlashCopy during subsystem cloning. Space-efficient FlashCopy reduces the amount of storage that must be occupied by the target volumes by the storage processor when a volume copy request is issued.

• Additional support for EMC Timefinder/Clone Volume Snap for subsystem cloning: This enhancement provides support for using the EMC TimeFinder/Clone Volume Snap to perform volume-level fast-replication on the COPY command for subsystem cloning. Previously, volume copies on EMC DASD were driven through ADRDSSU emulation or from a separate copy step outside of IMS Cloning Tool as part of the subsystem cloning process.

• Consistency Group support for both IBM FlashCopy and EMC TimeFinder/Clone: This enhancement provides support for using FlashCopy or EMC TimeFinder/Clone consistency function for volume-level fast-replication on the COPY command for subsystem cloning. The consistency function allows all of the volumes being copied to be copied at a consistent point in time. Using the hardware consistency function of FlashCopy or EMC TimeFinder/Clone negates the need to use the software suspend to suspend IMS updating when performing the copy process.

• New option for passing diagnostic execute parameters to ADRDSSU: This enhancement provides a sub-keyword, DSSPARM, to provide the option of
passing diagnostic execute parameters to ADRDSSU. This sub-keyword is intended for diagnostic purposes and can be used to gather more information when ADRDSSU has problems.

- Increase in the number of rename masks that can be specified in RENAME command.
- New option to RENAME to update IAM associations for AIXes and PATHs: This enhancement provides support for renaming IAM data sets and updating the associations of the renamed data sets. This enhancement addresses the situation where there are IAM data sets that are being cloned that include AIXes and PATHs, and it is desired to update the associations to correspond with the new data set names.
- New option to give return code zero for a data set that is not renamed due to an entry in EXCLUDE-SRCNAME-MASKS: This enhancement addresses the situation in which there are known data sets on the volumes that will not be renamed and it is desired to use NOTRENAMED(RC(8)) to know if any unknown data sets are on the volumes.
- Enhance COPY command so user defined storage groups may be used in FROM and TO specifications: This enhancement will provide an option for user defined storage groups that can be used in defining the source and target volumes to the COPY command. The storage group information will come from a data set. The user can define the locations of the information in the data records.
- Increase in the number of exclude masks that can be specified in RENAME command: This enhancement provides support for having a large number of exclude masks in the RENAME command.
- RENAME now has the option to bypass check that SMS class names are valid.

SC19-2475-02 July 2011

- **Online cloning enhancement**: You can now clone IMS subsystems while IMS is online. An online IMS subsystem clone is created by suspending the source IMS subsystem to achieve your point-in-time copy. By suspending the source IMS subsystem, any pending database writes are forced to disk, update activity is suspended, and the log buffers are flushed to disk. For more information, see "Cloning IMS subsystems" on page 67.
- **IMS version support**: IMS Version 11 is fully supported, IMS Version 12 Tolerance support.
- **Additional support for Extended Address Volume DASD volumes**: See "Authorization" on page 15 for more information.
- **New keyword**: A new optional keyword EXCLUDE-SRCNAME has been added to the RENAME command. This new keyword provides the option to give return code zero for a data set that is not renamed. Additionally, keyword descriptions of RENAME command keywords EXCLUDE-SRCNAME-MASKS and NOTRENAMED have been updated. For more information, see the "RENAME" on page 234 command.
- **Logger exit enhancement**: Users can now control which physical logger exit is used by IMS Cloning Tool. This enhancement is beneficial for users that install IMS Cloning Tool in a library with other tools that use the same physical logger exit. Now, users can control which physical logger exit is used by specifying that the IMS Cloning Tool logger exit is to be called through the IBM Generic Logger exit, or by creating an ALIAS for the IMS Cloning Tool exit. For more information, see "Step 6: Enable IMS Cloning Tool in your IMS online and batch jobs" on page 21 of "Configuration" on page 18.
- **Source database authorization check**: Additional options have been added to verify that the source databases are not currently authorized by an IMS
subsystem or batch job that could be updating the source databases. A new parameter, VERIFY-NO-UPDaters, has been added to the :DB_COPY_OPTIONS section of GCLINI; a new keyword, VERIFY-NO-UPDATERS, has been added to the IMSDBREFRESH command. For more information, see ":DB_COPY_OPTIONS section" on page 37 and "IMSDBREFRESH" on page 273.
Chapter 2. Customizing IMS Cloning Tool

Software will be provided as a product distribution formatted for SMP/E installation only, and as cumulative maintenance. Any additional maintenance will also be distributed in SMP/E format.

Review the topics in this section to learn about IBM IMS Cloning Tool planning considerations and customization steps.

For installation instructions, refer to the IBM IMS Cloning Tool for z/OS Program Directory, which was included in the product package.

Planning for IMS Cloning Tool

Review these topics to prepare for implementing IMS Cloning Tool:

- “Prerequisites”
- “Data resources” on page 14
- “Data sets” on page 15
- “Authorization” on page 15
- “Validate load module contents” on page 17

Prerequisites

IMS Cloning Tool has both hardware requirements and software requirements.

Make sure that you have the following minimum hardware and software requirements in place before you install IMS Cloning Tool.

Hardware requirements

IMS Cloning Tool operates on any hardware configuration that supports the required versions of IMS.

IMS Cloning Tool requires the same hardware that is required to install the supported version of IMS that you are running, along with sufficient disk space to fulfill the IMS Cloning Tool storage requirements.

Software requirements

In order to use IMS Cloning Tool, you must have the following software requirements in your environment.

- z/OS, Version 1.9 or later

  Note: Note: The level of SMP/E included in z/OS, Version 1.9 is SMP/E for z/OS, Version 3.4 (the standalone version of SMP/E).


  Note: IMS Cloning Tool functions in IMS version 12, but new IMS V12 functionality is not currently utilized by IMS Cloning Tool. Full exploitation for IMS V12 will be introduced in a future maintenance pack.
The following restrictions will apply when using IMS Cloning Tool on IMS V12:
- Database Refresh is not supported for DEDB secondary indexes on IMS V12
- Database Refresh is not supported for databases defined in IMS repositories on IMS V12
- Restriction for online cloning only: IMS V12 systems can not have log buffers allocated in 64-bit storage

- IMS Cloning Tool can leverage fast copy technology to create copies quickly. The following fast copy software products are supported:
  - IBM FlashCopy
  - IBM PPRC
  - STK SnapShot
  - EMC TimeFinder/Snap
  - EMC TimeFinder/Mirror
  - Softek Replicator
  - Innovation Data Processing FDRPAS

**Storage requirements**
IMS Cloning Tool has the following storage requirements for installation, memory, and auxiliary storage.

**Installation**
Approximately 50 cylinders of DASD are needed to install IMS Cloning Tool.

**Memory**
IMS Cloning Tool executes as a batch job. The only memory requirements needed to execute IMS Cloning Tool is the amount used by the batch job. The batch job can typically execute in a 6M region but memory requirements may increase depending on the number of volumes and data sets being cloned.

**Auxiliary storage**
IMS Cloning Tool requires temporary DASD space for a JOURNAL file, sort space, and a few backup files. The amount of space is dependent on the number of volumes and data sets being cloned but typically would not exceed 50 cylinders per clone.

**Data resources**
The following sections cover all external stored data (files, databases, logs, etc.) that IMS Cloning Tool will make use of.

**JOURNAL file**
IMS Cloning Tool is executed as a batch job. The steps to perform the complete cloning process are implemented through several different commands in IMS Cloning Tool. The commands needed to create a clone can be executed in different batch jobs, multiple steps within a job, or multiple commands within the same job step.
IMS Cloning Tool uses a VSAM KSDS, referred to as the JOURNAL file, in order to keep information about the execution of a command and to pass information to subsequent commands. The layout of the records kept in the JOURNAL file is not documented and only available to IMS Cloning Tool programs.

**SMF records**

In addition to the normal SMF information generated from a batch job execution, IMS Cloning Tool can also generate SMF records to provide an audit trail of any data sets that are renamed during the cloning process.

**Data sets**

This section describes the data sets that are used by IMS Cloning Tool.

**Data set naming conventions**

IMS Cloning Tool uses data sets that have the following naming scheme:

- `hlq.SGCLJCL`
- `hlq.SGCLLOAD`
- `hlq.SGCLPARM`

where `hlq` is the high-level qualifier `hlqual` value that you specify at installation. During installation, `hlqual` should be replaced with the data set name format that conforms to your installation naming standards.

You can choose other names for these data sets during installation, but you must identify the names that you use in the JCL members of the SGCLJCL and SGCLPARM libraries. If possible, keep the low-level qualifiers to avoid confusion.

The following include descriptions of these data sets:

- **`hlq.SGCLJCL`**
  - This data set contains the JCL members used by IMS Cloning Tool. This data set is automatically created (if required by the installation process) when the product is installed.

- **`hlq.SGCLLOAD`**
  - This data set contains load modules for IMS Cloning Tool. It must be APF authorized. This data set is automatically created when the product is installed.

- **`hlq.SGCLPARM`**
  - This library contains information that is used when IMS Cloning Tool runs, such as licensing and configuration information.

**Authorization**

You must set the following authorization requirements for IMS Cloning Tool:

**APF authorization**

The IMS Cloning Tool SGCLLOAD library requires APF authorization.

**Function authorization requirements**

You need a certain level of authority to perform IMS Cloning Tool functions:

For subsystem cloning:
The COPY and RENAME commands require ALTER authority for both the source and target user catalogs. IMS Cloning Tool does NOT update the source catalog but requires ALTER authority to access the catalog via direct access.

The COPY command supplies the ADMINISTRATOR operand when invoking DFSMSdss. To avoid WTORs, ADRDSSU ADMINISTRATOR is used to gain permission to overlay the target volume VTOCIX and/or VVDS during the COPY process. Because the ADMINISTRATOR operand is generated, all of the following must be true:
- FACILITY class must be active.
- Applicable FACILITY-class profile must be defined.
- You must have READ access to that profile

The ADMINISTRATOR profile is: STGADMIN.ADR.STGADMIN.COPY

If COPY is going to re-label the target volumes using VOLPAIRSDEVN or VOLPAIRSDEVN-DDN, ICKDSF REFORMAT requires RACF® volume access of ALTER for RACF class DASDVOL, and READ access to the RACF facility class profile of STGADMIN.ICK.REFORMAT if it is active.

The RENAME command invokes ICKDSF to rebuild the VTOCIX if VTOCIX_REBUILDER = IBM is specified in GCLINI or if the volume is an Extended Address Volume. ICKDSF requires the RACF volume access of ALTER for RACF class DASDVOL or READ access to FACILITY class profile STGADMIN.ICK.BUILDIX. If the default setting VTOCIX_REBUILDER = MSC is used, ICKDSF is not invoked unless the volume is an Extended Address Volume for which ICKDSF will always be used to rebuild the VTOCIX. The RENAME command also requires authorization to create an EMCS console, to issue z/OS MODIFY CATALOG commands, and to update the VVDS data sets on the target volumes.

The IMSUPDATE command requires RACF UPDATE authority to update the target data sets.

The COPYCHECK command requires UPDATE authority to update the journal file.

The FINDUCATS command invokes DCOLLECT to identify ALIAS names of the source volume data sets in order to identify the correct source user catalogs. DCOLLECT controls access to the DCOLLECT function by issuing a security (RACF) check for a facility class profile of STGADMIN.IDC.DCOLLECT. If this profile exists, then READ authority is necessary.

The IMSSTART issues the z/OS START command to start the regions that are used by an IMS subsystem and may need to be protected.

The IMSSTOP issues the z/OS STOP command to stop some of the regions that are used by an IMS subsystem and may need to be protected.

IMS Cloning Tool RENAME will invoke DFSMSdss to remove any unwanted VVR or NVR entries on the target volumes. DFSMSdss requires either RACF ALTER authority to the master catalog or READ access to the RACF facility class profile of STGADMIN.IGG.DLVVRNVR.NOCAT.

For database cloning:

The IMSDBREFRESH command requires RACF READ access for the source database data sets and RACF UPDATE authority for the target database data sets.

The IMSDBSTOP command issues a z/OS command to DBR an IMS database and may need to be protected.

The IMSDBSTART command issues a z/OS command to START an IMS database and may need to be protected.
Validate load module contents

To validate the load module contents, you must run GCLMLVL.

Technical Support might request that you submit the GCLMLVL JCL to identify the current modification levels of your product load modules.

GCLMLVL identifies and displays the program PTFs (fixes) and ETRs (enhancements) that have been applied to the product level you are running. This information is based on information that is stored internally within the load modules.

Tip: Note that only the last update (level) will contain the fix and revision number and the change date; all other fixes or enhancements contain only the ID number.

GCLMLVL JCL example

The following is an example of the GCLMLVL JCL:

```
//STEP01 EXEC PGM=GCL01MOD
//STEPLIB DD DISP=SHR,DSN=hlq?.SGCLLOAD (your LOAD library)
//SYSUT1 DD DISP=SHR,DSN=*.STEPLIB
//SYSPRINT DD SYSOUT=*  
```

The following table provides the a list of the DD statements for the GCLMLVL JCL and a description of each statement.

<table>
<thead>
<tr>
<th>DD STATEMENT</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEPLIB</td>
<td>Required. Specify the product LOAD library.</td>
</tr>
<tr>
<td>SYSPRINT</td>
<td>Required. Specify the output DD statement.</td>
</tr>
<tr>
<td>SYSUT1</td>
<td>Required. Specify the primary LOAD library to be processed.</td>
</tr>
</tbody>
</table>

Execution of the GCLMLVL JCL (GCL01MOD program) creates a report that contains the last fix and a list of fixes for all of the modules in the SYSUT1 library. The following is an example of the IMS Cloning Tool GCL MLVL report

GCLMLVL report example

The following is an example of the GCLMLVL REPORT.
Configuration

Complete these configuration steps to configure IMS Cloning Tool for your installation.

You must first have successfully completed product installation.

Overview

The following table lists the high-level steps for configuring IMS Cloning Tool. Each step is discussed in more detail in the referenced section. The GCLINI SGCLPARM member is documented in “GCLINI configuration values” on page 30.

<table>
<thead>
<tr>
<th>Configuration Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Step 1: Run GCLIMRG” on page 19</td>
</tr>
<tr>
<td>For new installations, this step creates the new GCLINI SGCLPARM members.</td>
</tr>
<tr>
<td>“Step 2: Set the keywords in the GCLINI SGCLPARM member” on page 20</td>
</tr>
<tr>
<td>“Step 3: Modify the GCL members in hlq.SGCLJCL” on page 20</td>
</tr>
<tr>
<td>“Step 4: APF-authorize the SGCLLOAD library on all systems” on page 21</td>
</tr>
<tr>
<td>“Step 5: Prevent unauthorized use of IMS Cloning Tool” on page 21</td>
</tr>
<tr>
<td>“Step 6: Enable IMS Cloning Tool in your IMS online and batch jobs” on page 21</td>
</tr>
</tbody>
</table>
**Table 3. IMS Cloning Tool Configuration Overview (continued)**

<table>
<thead>
<tr>
<th>Configuration Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Step 7: Specify mask characters for your EBCDIC code set” on page 23</td>
</tr>
<tr>
<td>“Step 8 (ISPF interface only): Create the VSAM repository” on page 23</td>
</tr>
<tr>
<td>“Step 9 (ISPF interface only): Create the IMS control file” on page 24</td>
</tr>
<tr>
<td>“Step 10 (ISPF interface only): Customize the CLIST” on page 25</td>
</tr>
<tr>
<td>“Step 11: Verify that customization was successful” on page 29</td>
</tr>
<tr>
<td>“Step 12: Configuring for database cloning” on page 29</td>
</tr>
</tbody>
</table>

**Step 1: Run GCLIMRG**

This task is required. This step is part of the greater task of configuring IMS Cloning Tool. GCLIMRG either merges new and updated GCLINI SGCLPARM data with your existing SGCLPARM member or creates a new GCLINI SGCLPARM member. GCLINI keyword values are fetched one at a time at product startup.

**Before you begin**

The JCL to run GCLIMRG can be found in the data set SGCLJCL(GCLIMRG) that was created by submitting the ISMPJCL during installation.

**Note:** Do not alter the contents of the GCLINI# member that was sent with the release.

**About this task**

Edit and submit the JCL in SGCLJCL(GCLIMRG) as follows:

**Procedure**

1. Edit the JCL to provide a valid job card statement.
2. Change the “STEPLIB DD” to point to the ‘hlq?.SGCLLOAD’ library.
3. Change the “INI DD” statement to point to the ‘hlq?.SGCLPARM’.
   - First Install: If you are installing the product for the first time, use ‘hlq?.SGCLPARM’ as the data set name and specify GCLINI# as the member name.
   - Maintenance Update: If you already have a product.SGCLPARM from a previous install, use the existing SGCLPARM data set name and specify GCLINI as the member name.
4. Change the “MSCINI DD” statement to point to the ‘hlq?.SGCLPARM’ data set. Ensure that the member name remains GCLINI#.
5. Change the “UPDATE DD” statement to point to the ‘hlq?.SGCLPARM’ data set. Ensure that the member name remains GCLINI.
6. Submit the job. Before proceeding to the next step, ensure that the job successfully completes with completion code 0.

**What to do next**

If the job terminates with a non-zero completion code, first check the error messages to determine if the situation is easily correctable. Also, you can try rerunning GCLIMRG.
Step 2: Set the keywords in the GCLINI SGCLPARM member

This step is part of the greater task of configuring IMS Cloning Tool. The keywords in the GCLINI member of SGCLPARM provide you with flexibility and control of product execution. Some keywords also provide product security.

About this task

If you plan to run IMS Cloning Tool on several z/OS images, manage the GCLINI SGCLPARM member by using one of these methods:

- Create separate copies of the GCLINI and edit each copy for the z/OS image where it will be used. Then run GCLIMRG on each image.
- Use the same text (multi-image INI) for all z/OS images. This method requires replicating the GCLINI sections and qualifying them with sysplex or system names so that you can define token values that are unique to a z/OS image. For more information about qualified section names, see “GCLINI configuration values” on page 30. Use the GCLIVW member of the JCL data set to view the contents of the multi-image INI.

To edit the configuration values in the GCLINI SGCLPARM member, use the ISPF Edit function. You can code default values for some keywords. When you finish, review the GCLINI values to ensure that they are correct for your installation.

You can update the values in the GCLINI member of the SGCLPARM, if necessary. However, the SGCLPARM is read-only during product execution.

Procedure

1. GCLSet CA-MIM/MII Token Values in the :RESOURCE_SERIALIZATION Section. Installations running CA-MIM/MII with multiple systems and shared DASD need to set the MIM_GDIF parameter to YES in the :RESOURCE_SERIALIZATION section of the GCLINI member. This setting ensures that the IMS Cloning Tool data sets are protected from data corruption when CA-MIM/MII GDIF is inactive.

   :RESOURCE__SERIALIZATION
   MIM_GDIF = YES

2. Save the newly updated GCLINI member.

What to do next

Step 3: Modify the GCL members in hlq.SGCLJCL

This step is part of the greater task of configuring IMS Cloning Tool. You must modify the members of the SGCLJCL library that have names beginning with "GCL".

About this task

Procedure

Modify all IMS Cloning Tool members in the hlq.SGCLJCL library to reflect the product library names that were specified during product installation, the values for IDCAMS executions (where necessary), and the GCLIN control statements for the desired command functionality. The GCL members are the members that have names starting with “GCL.”
Note: Because of the variation of IMS Cloning Tool commands, you might want to combine some commands into a single job or even into a single step.

Note: IMS Cloning Tool JCL is not distributed as PROCs because you might want to add user steps for defining catalogs and aliases. However, it is strongly recommended that you create PROCs to reduce the JCL updates that you would need to make if the IMS Cloning Tool JCL is changed in a future release.

What to do next

Step 4: APF-authorize the SGCLLOAD library on all systems

This step is part of the greater task of configuring IMS Cloning Tool. The SGCLLOAD library for IMS Cloning Tool must be APF-authorized.

About this task

Procedure

Consult your Systems Programmer to have the SGCLLOAD library added into the APF list and to ensure that appropriate access controls have been established.

What to do next

Step 5: Prevent unauthorized use of IMS Cloning Tool

This step is part of the greater task of configuring IMS Cloning Tool. You can prevent unauthorized personnel from executing IMS Cloning Tool commands.

About this task

Procedure

The following items need to be secured (or protected) to ensure that only authorized personnel can use these commands.

- IMS Cloning Tool requires ALTER authority to both the source and target user catalogs. This requirement prevents unauthorized personnel from executing the COPY and RENAME commands.
- IMS Cloning Tool UPDATE authority to the target data sets. This requirement prevents unauthorized personnel from executing the IMSUPDATE command.
- The COPY command requires authorization to ADRDSSU ADMIN. This requirement prevents an unauthorized person from running the COPY command.
- The COPYCHECK command requires the journal files to be secured. This requirement prevents an unauthorized person from using an authorized person's journal file to run the COPYCHECK command.

What to do next

Step 6: Enable IMS Cloning Tool in your IMS online and batch jobs

IMS Cloning Tool must be added to the IMS control regions for the IMS systems that will be cloned. IMS Cloning Tool uses standard IMS exits in order to provide the functionality to suspend I/O while the source volumes are copied.
About this task

Note: This step is only required if IMS Cloning Tool will be used for subsystem cloning and if storage based consistency is not available to create a consistent copy.

IMS Cloning Tool can be enabled in the control regions and DL/I batch jobs in one of two ways.

Additionally, you can specify which physical logger exit is used by IMS Cloning Tool in this step. This is beneficial for users that install IMS Cloning Tool in a library with other tools that use the same physical logger exit. Control which physical logger exit is used by specifying that the IMS Cloning Tool logger exit is to be called through the IBM Generic Logger exit, or by creating an ALIAS for the IMS Cloning Tool exit.

Procedure

1. The IMS Cloning Tool library can be added to the STEPLIB for the control region and all DL/I batch jobs.

   Note: If the IMS Cloning Tool library is added to the STEPLIB for DL/I batch jobs, the library must be a PDS format library.

2. Enable IMS Cloning Tool Physical Logger Exit. The IMS Cloning Tool physical logger exit can be enabled in the control regions and DL/I batch jobs in one of two ways:

   • Option 1: Configure IMS Tools Generic exit:
     The IMS Tools Generic Logger Exit interface is a general-purpose interface that allows multiple exits to be defined and called. As part of the installation and configuration for the IMS Tools Generic Logger Exit, you might have already performed the following steps. However, if these steps have not yet been completed, you need to complete them now before continuing.
     a. Create a unique GLXi0 member for each IMS system in which IMS Cloning Tool is needed where xi is the 4-character IMS subsystem identifier.
     b. APF-authorize the executable load libraries for IMS Tools Generic exits.
     c. Update your IMS control region JCL to include in the STEPLIB concatenation the executable load libraries for IMS Tools Generic exits.

     You can use the SGCLJCL(GCLGLX) sample member to set up an IMS Tools Generic Logger Exit configuration members for each IMS system. For detailed instructions on how to add and configure these members, see the IMS Tools Base for z/OS: IMS Common Services User’s Guide.

     Important: If you use any other user-defined or vendor logger exit that does not support IMS Tools Generic exits, you must ensure that the libraries that contain the DFSFLGX0 exit are concatenated ahead of the SGLXLOAD and those exits must pass control to the next exit in the STEPLIB so that IMS Tools Generic exits get control.

   • Option 2: Define ALIAS for IMS Physical Logger Exit
     If the IMS Tools Generic Logger Exit is not available then an ALIAS for the IMS Physical Logger exit name, DFSFLGX0, can be defined for the IMS Cloning Tool physical logger exit.

     You can use the SGCLJCL(GCLFLGX0) sample member to define the DFSFLGX0 ALIAS to the appropriate IMS Cloning Tool module.
3. Make additional IMS Cloning Tool modules available to the IMS control region and DL/I batch jobs. This can be accomplished in one of the following ways:
   - Add the IMS Cloning Tool library to the STEPLIB for the control region and all DL/I batch jobs. Note: If the IMS Cloning Tool library is added to the STEPLIB for DL/I batch jobs, the library must be a PDS format library. Because the IMS Cloning Tool library created by the SMPE installation process is a PDSE, this library must be copied to a PDS format library which can then be added to the IMS control regions and DL/I batch jobs.
   - Copy the following modules and their ALIASes to the IMS RESLIB:
     - GCLFLGX0 and ALIAS: DFSFLGX0 if it was defined in prior step.
     - GCL#LOAD
     - GCLIMS91
     - GCLIMSA1
     - GCLIMSB1
     - GCLIMSC1
     - GCLIMSD1
     - GCLIMSOF

Step 7: Specify mask characters for your EBCDIC code set

System Administrator: If your code tables are different from the U.S.A. EBCDIC code set, your installation might need to specify different masking characters to achieve the desired result.

Data supplied as input to batch programs:

This step is part of the greater task of configuring IMS Cloning Tool.

If your product code is in binary format, and if you need to specify input that includes an EBCDIC character that determines whether the product takes special action, ensure that you enter the correct EBCDIC character from the code tables that you use. The EBCDIC character that you enter must be translatable to the binary value that corresponds to the EBCDIC character shown in the product documentation. The product documentation is based on the U.S.A. EBCDIC code set.

For instance, if an exclamation mark (!) is called for but your code tables do not translate the ! character to a hexadecimal 5A, you must enter the character that will translate to a 5A.

Product output:

Depictions of product output shown in the product manuals are based on the U.S.A. EBCDIC code set. Actual output might vary if your EBCDIC code tables are different.

Step 8 (ISPF interface only): Create the VSAM repository

The ISPF interface uses a VSAM data repository to hold cloning profile information for both subsystem cloning and database refresh. If you are not planning to use the ISPF interface, you can skip this step.
About this task

This step is part of the greater task of configuring IMS Cloning Tool.

Procedure

1. Edit the GCLREPOS member in the SGCLJCL library.
2. Add an appropriate job card for your site.
3. In each DEFINE CLUSTER instruction, modify the high level qualifier (defined as GCLHLQ in the sample) in the NAME, DATA NAME, and INDEX NAME text within parentheses.

   Important: Do not change any part of the cluster name, data name, or index name besides the high level qualifier.

```//SYSIN DD *
DEFINE CLUSTER
  ( NAME ('GCLRHLQ.PROFILES') -
    VOLUMES (XXXXXX) -
    CYLINDERS (5 10) -
    SHAREOPTIONS (2 3) -
    INDEXED -
    RECORDSIZE (4096 4096) -
    KEYS (50 0) -
    REUSE ) -
  DATA ( NAME ('GCLRHLQ.PROFILES.DATA')) -
  INDEX ( NAME ('GCLRHLQ.PROFILES_INDEX')) -
```

4. In each REPRO instruction, modify the GCLRHLQ high level qualifier of the name of the OUTDATASET. See the bold text in the following example:

   Important: Do not change any part of the OUTDATASET name besides the high level qualifier.

```REPRO -
  INFILE (SYSUT1) -
  OUTDATASET ('GCLRHLQ.PROFILES') -
```

5. Change XXXXXXX to the volser that you want the data set to be allocated on.
6. Run GCLREPOS to create the repository.
7. Ensure that users who will use the ISPF interface have READ/WRITE authority to the repository file data set.

Step 9 (ISPF interface only): Create the IMS control file

This step only needs to be performed if other IBM IMS tools requiring this control file have not been installed, or you would like to maintain a separate control file for IMS Cloning Tool. If you are not planning to use the ISPF interface, you can skip this step.

About this task

This step is part of the greater task of configuring IMS Cloning Tool.

Procedure

1. Edit the SGCLJCL member GCLCNTFL.
2. Add an appropriate job card for your site.
3. Change instances of MYFILE.CONTROL within the DEFINE CLUSTER statement and the REPRO instruction to the name of the data set, data name, and index name that you want to use for your IMS control file.
4. Change XXXXXXX to an appropriate volume serial number for your installation.
5. Run GCLCNTFL to create the control file.
6. Ensure authorities as follows:
   - Users who will use the Administrative options function of the ISPF interface must have READ/WRITE authority to the control file data set.
   - General users of the ISPF interface and users who access the control file for other functions require at least READ authority to the control file data set.

**Step 10 (ISPF interface only): Customize the CLIST**

This topic describes how to customize the CLISTs required to run the ISPF interface for IMS Cloning Tool. If you are not planning to use the ISPF interface, you can skip this step.

This step is part of the greater task of configuring IMS Cloning Tool.

**Option 1: If the ISPF interface will not be shared with DB2® Cloning Tool**

If the ISPF interface will not be shared with DB2 Cloning Tool, copy the GCL and GCLCLIST members from the SGCLJCL library to your system CLIST library.

In the PROC 0 CLISTLIB(name) HILEVEL(hilevel) statement, specify the name of the data set to which the GCLCLIST member was copied and high level qualifier of the data set where you have installed IMS Cloning Tool.

For example:
```
PROC 0 CLISTLIB(ABCD.USER.CLIST) HILEVEL(GCL.V120)
```

**GCLCLIST member (when the ISPF interface will not be shared with DB2 Cloning Tool)**

GCLCLIST starts the IMS Cloning Tool ISPF interface.

Edit the member as follows:

1. Set variable HILEVEL to the high level qualifier of the data set where you have installed IMS Cloning Tool.
2. Set variable GCLCNTFL to the data set name of IMS control file that you defined in GCLCNTFL job.
3. Set variable GCLRHLQ to the high level qualifier of the VSAM data repository created to hold profile information (created by the GCLREPOS job).
4. Ensure that the GCLLIB variable points to the load library where you installed IMS Cloning Tool.

5. Ensure that the GCLPARM variable points to the correct GCLINI member.

6. Ensure that any data set names as expanded after variable substitution do not exceed 44 characters in length.

```apl
PROC 0 HILEVEL(HILEVEL) +
   GCLCNTFL(GCLCNTFL) +
   GCLRHLQ(GCLRLHQ)
ISPEXEC VGET (ZUSER ZPREFIX) ASIS
   IF ((&ZPREFIX) = (&ZUSER) AND (&ZPREFIX) = ) THEN +
      SET &TL = &STR(&ZPREFIX..&ZUSER)
   ELSE +
      SET &TL = &ZUSER
   CONTROL NOMSG
   IF &SYSDSN('&TL..&HILEVEL..ISPLIB') =OK THEN +
      DO
         ALLOC F(XX) DA('&TL..&HILEVEL..SGCLTENU') SPACE(1 1) DIR(30) +
            CYLINDERS LRECL(80) BLKSIZE(800) DSORG(PO) RECFM(F B) NEW
      END
      FREE FILE(XX)
   CONTROL MSG
   SET &PLHLQ = &STR('&HILEVEL')
   SET &GCLLIB = &STR('&HILEVEL..SGCLLOAD')
   SET &GCLPARM = &STR('&HILEVEL..SGCLPARM(GCLINI)'
ISPEXEC LIBDEF ISPMLIB DATASET ID('&HILEVEL..SGCLMENU') UNCOND
ISPEXEC LIBDEF ISPPLIB DATASET ID('&HILEVEL..SGCLPENU') UNCOND
ISPEXEC LIBDEF IPSLLIB DATASET ID('&HILEVEL..SGCLSLIB') UNCOND
ISPEXEC LIBDEF ISPTLIB DATASET ID('&TL..&HILEVEL..SGCLTENU' +
   '&HILEVEL..SGCLTENU') UNCOND
ISPEXEC LIBDEF ISPTABL DATASET ID('&TL..&HILEVEL..SGCLTENU') UNCOND
ISPEXEC CONTROL ERRORS RETURN
ISPEXEC SELECT CMD(GCLARGSZ) MODE(FSCR)
   SET &RETCODE = &LASTCC
ISPEXEC CONTROL ERRORS CANCEL
   IF &RETCODE < 30000 THEN DO
      ISPEXEC SETMSG MSG(GCL002)
   EXIT CODE(1)
   END
   ALLOC F(GCLINI) DSN(&GCLPARM) SHR REU
   GCL2MAIN &PLHLQ &GCLLIB &GCLPARM &GCLCNTFL &GCLRHLQ
   CONTROL NOMSG
   FREE FILE(GCLINI)
   CONTROL MSG
```

**Option 2: If the ISPF interface will be shared with DB2 Cloning Tool**

If the ISPF interface will be shared with DB2 Cloning Tool, copy the GCLCKZ and GCLCKZCL members from the SGCLJCL library to your system CLIST library and make the following changes:

1. **Updates to GCLCKZ member:**
   In the PROC 0 CLISTLIB(name) GCLHILVL(hgclhilvl) CKZHILVL(ckzhilvl) statement, specify the name of the data set to which the GCLCKZCL member
was copied and high level qualifier of the data sets where you have installed IMS Cloning Tool and DB2 Cloning Tool. For example:

```
PROC 0 CLISTLIB(ABCD.USER.CLIST)GCLHILVL(GCL.VER120) +
CKZHILVL(CKZ.VER330)
```

```
PROC 0 CLISTLIB(NAME) +
GCLHILVL(GCLHILVL) +
CKZHILVL(CKZHILVL)
CONTROL NOMSG
FREE FILE(GCLCLIST)
CONTROL MSG
ALLOC FILE(GCLCLIST) DATASET('&CLISTLIB') SHR REU
ALTLIB ACTIVATE APPLICATION(CLIST) FILE(GCLCLIST)
ISPEXEC LIBDEF ISPTLIB DATASET ID('&GCLHILVL..SGCLTENU' +
'&CKZHILVL..SCKZTENU') STACK
ISPEXEC SELECT CMD(%GCLCKZCL) NEWAPPL(GCL) PASSLIB
ISPEXEC LIBDEF ISPTLIB
ALTLIB DEACTIVATE APPLICATION(CLIST)
CONTROL NOMSG
FREE FILE(GCLCLIST)
CONTROL MSG
```

2. **Updates to GCLCKZCL member:**

GCLCKZCL starts the IMS Cloning Tool ISPF interface. Make the following updates:

a. Set variable GCLHILVL to the high level qualifier of the data set where you have installed IMS Cloning Tool.
b. Set variable CKZHILVL to the high level qualifier of the data set where you have installed DB2 Cloning Tool.
c. Set variable CNTLFILE to the data set name of the control file that you defined in GCLCNTFL job.
d. Set variable REPOSHLQ to the high level qualifier of the VSAM data repository created to hold profile information (created by the GCLREPOS job).
e. Ensure that the GCLLLIB variable points to the load library where you installed IMS Cloning Tool.
f. Ensure that the GCLPARM variable points to the correct GCLINI member.
g. Ensure that the CKZLLIB variable points to the load library where you installed DB2 Cloning Tool.
h. Ensure that the CKZPARM variable points to the correct CKZINI member.
i. Ensure that any data set names as expanded after variable substitution do not exceed 44 characters in length.

For example:

```
PROC 0 GCLHILVL(GCLHILVL) +
CKZHILVL(CKZHILVL) +
CNTLFILE(CNTLFILE) +
REPOSHLQ(REPOSHLQ)
```

```
ISPEXEC VGET (ZUSER ZPREFIX) ASIS
IF ((&ZPREFIX) ¬= (&ZUSER) AND (&ZPREFIX) ¬= ) THEN +
  SET &TL = &STR(&ZPREFIX..&ZUSER)
ELSE +
  SET &TL = &ZUSER
```
CONTROL NOMSG
IF &SYSDSN('&TL..&GCLHILVL..SGCLTENU')=OK THEN +
   DO
      ALLOC F(XX) DA('&TL..&GCLHILVL..SGCLTENU') SPACE(1 1) DIR(30) +
         CYLINDERS LRECL(80) BLKSIZE(800) DSORG(PO) RECFM(F B) NEW
   END
FREE FILE(XX)
CONTROL MSG
CONTROL NOMSG
IF &SYSDSN('&TL..&CKZHILVL..SCKZTENU')=OK THEN +
   DO
      ALLOC F(XX) DA('&TL..&CKZHILVL..SCKZTENU') SPACE(1 1) DIR(30) +
         CYLINDERS LRECL(80) BLKSIZE(800) DSORG(PO) RECFM(F B) NEW
   END
FREE FILE(XX)
CONTROL MSG

SET &GCLLLIB = &STR('&GCLHILVL..SGCLLOAD')
SET &GCLHLQ = &STR('&GCLHILVL')
SET &GCLPARM = &STR('&GCLHILVL..SGCLPARM(GCLINI)')
SET &GCLMODE = &STR('IMSCT')

SET &CKZPGM = &STR('CKZ2MAIN')
SET &CKZHHLQ = &STR('&CKZHILVL')
SET &CKZLLIB = &STR('&CKZHILVL..SCKZLOAD')
SET &CKZPARM = &STR('&CKZHILVL..SCKZPARM(CKZINI)')
SET &CKZAPID = &STR('CKZ')

ISPEXEC LIBDEF ISPMLIB DATASET ID('&GCLHILVL..SGCLMENU' +
   'SCKZMENU') UNCOND
ISPEXEC LIBDEF ISPLL LIB DATASET ID('&GCLHILVL..SGCLPENU' +
   'SCKZPENU') UNCOND
ISPEXEC LIBDEF ISPSLIB DATASET ID('&GCLHILVL..SGCLSLIB' +
   'SCKZSLIB') UNCOND
ISPEXEC LIBDEF ISPLL LIB DATASET ID('&GCLHILVL..SGCLLOAD' +
   'SCKZLOAD') UNCOND
ISPEXEC LIBDEF ISPTLIB DATASET ID('&TL..&GCLHILVL..SGCLTENU' +
   'SCKZTENU') UNCOND
ISPEXEC LIBDEF ISPTABL DATASET ID('&GCLHILVL..SGCLTENU') UNCOND

CONTROL NOFLUSH
SET &RC = 0
ERROR +
   DO
      SET &RC = &LASTCC
      RETURN
   END

CONTROL NOMSG
IF &SYSDSN(&GCLPARM) = OK THEN +
   DO
      WRITE DATA SET &GCLPARM NOT FOUND
      EXIT CODE(2)
   END
CONTROL MSG

CONTROL NOMSG
IF &SYSDSN(&CKZPARM) = OK THEN +
   DO
      WRITE DATA SET &CKZPARM NOT FOUND
      EXIT CODE(2)
   END
CONTROL MSG
ERROR OFF

ISPEXEC CONTROL ERRORS RETURN
ISPEXEC SELECT CMD(GCLARGSZ) MODE(FSCR)
SET &RETCODE = &LASTCC
ISPEXEC CONTROL ERRORS CANCEL
IF &RETCODE < 30000 THEN DO
   ISPEXEC SETMSG MSG(GCL002)
   EXIT CODE(1)
END

ALLOC F(GCLINI) DSN(&GCLPARM) SHR REU
ALLOC F(CKZINI) DSN(&CKZPARM) SHR REU

SET &SYSASIS = ON
GCL2MAIN &GCLHLQ &GCLLLIB &GCLPARM &CNTLFILE &REPOSHLQ &GCLMODE +
   &CKZHLQ &CKZLLIB &CKZPARM &CKZPGM &CKZAPID

CONTROL NOMSG
FREE FILE(GCLINI)
FREE FILE(CKZINI)
CONTROL MSG

Step 11: Verify that customization was successful
This step is part of the greater task of configuring IMS Cloning Tool.

After you complete the preceding customization steps, run the FINDUCATS
command against one volume to verify that IMS Cloning Tool has been
successfully customized.

Step 12: Configuring for database cloning
This step is part of the greater task of configuring IMS Cloning Tool. Follow these
instructions to configure IMS Cloning Tool for database cloning.

Before you begin
You must have already installed and loaded the IMS Cloning Tool product libraries
and completed IMS Cloning Tool configuration.

Note: For SMP/E installs, you might notice what appear to be duplicate members
in the non-SGCLLOAD product libraries (not in SGCLPARM SGCLJCL, or ).
These entries are only aliases.

About this task

Overview:

The following table summarizes the high-level steps for configuring for database
cloning and a description of each step.

Table 4. Database Cloning Configuration Steps

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Set the keywords in the GCLINI member of the SGCLPARM. Database Cloning keywords are primarily in the :DB_COPY_OPTIONS section of GCLINI. For descriptions of these keywords, see “GCLINI Configuration values” on page 30.</td>
</tr>
<tr>
<td>2</td>
<td>Customize Database Cloning JCL members in hlq.SGCLJCL.</td>
</tr>
</tbody>
</table>
Table 4. Database Cloning Configuration Steps (continued)

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Verify that customization was successful.</td>
</tr>
</tbody>
</table>

**Procedure**

1. Set the Keywords in the GCLINI SGCLPARM Member. The Database Cloning keywords are primarily located in the :DB_COPY_OPTIONS section of the GCLINI member of the SGCLPARM library. These keywords control database copy processing, including the maximum return code that is issued before the job stops. Use the ISPF Edit function to set these keyword values.

   Be sure to set keyword values that are appropriate for your installation. For descriptions of the keywords, see "GCLINI configuration values."

   If necessary, you can change your keyword settings later by editing the GCLINI member.

2. Customize the Database Cloning JCL Members in hlq.SGCLJCL. Modify all Database Cloning members in hlq.SGCLJCL to reflect the product library names that were specified during product installation, values for IDCAMS executions (where necessary), and GCLIN control statements for the desired command functionality.

   Also, you can modify the DD statements for SYSOUT, as needed, to meet your installation standards. If necessary, you can add DD statements for other unrelated programs or products, for example, those for performing ABEND analysis or alternative sort options.

3. Verify database cloning customization. You can verify that the database cloning has been successfully customized by copying an IMS database and ensuring that it can be accessed on the target subsystem.

**GCLINI configuration values**

The GCLINI member (IMS Cloning Tool product initialization member) of the SGCLPARM library defines global information regarding IMS Cloning Tool usage and options for an installation.

This member is organized in sections. Each section contains a set of parameter specifications known as tokens. It is recommended that all IMS Cloning Tool users at an installation use the same GCLINI member.

Review the following sections for more information on the GCLINI member:

- "Syntax rules"
- "GCLINI keyword syntax and descriptions" on page 32

**Syntax rules**

The GCLINI member contains token-assignment statements organized by section.

The general format for a token statement is:

\[
\text{Keyword} = \text{Parameter(s)}
\]

The token statements can contain leading blanks. IMS Cloning Tool scans the entire 80-byte record for the token statement to locate the first non-blank character. Do not renumber the columns in the GCLINI member; if sequence numbers are assigned to columns 73 through 80, errors will result.
You can add a notes token to document your changes to any section, including the initial/unnamed section. The GCLIMRG program will retain these notes along with any comments that continue from the notes token. For example:

```
Notes = Updated by Dan on 2007/04/23 +
       Updated by John on 2007/02/20
```

Section names
A section name is indicated by the colon character (:) immediately followed by a name string.

For an GCLINI member that is used across multiple z/OS images, you can qualify all section names except for PRODUCT_INFO and INIMERGE_VALUES with a sysplex name, a system name, or both. You must explicitly state the sysplex and system names; that is, no wildcards are allowed.

Some examples of qualified section names follow:

- Sysplex-name and system-name qualifications:
  
  - :section-name.sysplex-name.system-name

- Sysplex-name qualification:
  
  - :section-name.sysplex-name

- System-name qualification:
  
  - :section-name..system-name

The GCLIMRG program will retain your qualified section names and merge new tokens for those sections.

You can specify a qualified section name for a z/OS image that has unique requirements, followed by an unqualified section name that applies to all of the other images. IMS Cloning Tool will use only the first matching section in the GCLINI member. All other variations of that section will be ignored.

To view the contents of the GCLINI member that is to be used for multiple z/OS images, you can use the INIVIEW member of the JCL data set. In the INIVIEW job, you can specify the sysplex name and the system name that is associated with a z/OS image to display the GCLINI values that will be used when IMS Cloning Tool runs on that image.

Token names
A token name is a parameter name that can be specified under a particular section.

A token name is specified as a blank-delimited character string preceding an equal (=) sign. The token names that are supported for IMS Cloning Tool are described in this chapter.

Token values
A token value is the data that is specified for a token name after the equal sign (=).

Token values can be keywords, user-specified values (a single value or several strings), or keywords with token values specified as KEYWORD(uservalue).

You can enclose token values in either single quotation marks or double quotation marks. The quotation marks are stripped away before the product uses the value. If a quotation mark is part of the data (not used as a delimiter), you should either:
• enclose that quotation mark character by using the alternate type of quotation mark,
• or repeat that quotation mark character and then enclose it by using the same type of quotation mark.

For example, you can indicate that a single quotation mark is part of the data by specifying either "'" or '''.

INI statement continuation rules
You can continue statements by using either a minus (-) or plus (+) sign as the continuation character.

You can place the continuation character anywhere within the statement text. Any data after the continuation character in that logical record is interpreted as a comment and is ignored.

GCLINI comments
You can use either the line mode or block mode for specifying comments in the GCLINI member, as follows:

• Place an asterisk (*) or slash-asterisk (/*) in column 1 to mark the entire line as a comment. This method of commenting is not allowed inside a continued /* */ type of comment but is allowed in a continued token=value statement. Note that a line that is entirely blank is also considered to be a comment.
• Specify a beginning slash-asterisk (/*) with a terminating asterisk-slash (*)/ to mark entire lines, blocks of lines, or portions of a single line as a comment. Nested comments are supported.

DB_COPY_OPTIONS token errors
Some tokens in the :DB_COPY_OPTIONS section of the GCLNI member have default values.

If an error exists in one of these token statements, IMS Cloning Tool uses the default value and issues an error message with a return code of 4. The message describes the error and the default value substitution. If you set the MAX_RC keyword to 4, IMS Cloning Tool continues running to completion. If you set the MAX_RC keyword to 0, IMS Cloning Tool stops after token validation.

GCLINI keyword syntax and descriptions
GCLINI contains the following sections.

Each section is described in further detail in subsequent sections of this chapter.

• ":PRODUCT_INFO section" on page 33
• ":INIMERGE_VALUES section" on page 33
• ":SI027_VALUES section" on page 33
• ":SI040_VALUES section" on page 33
• ":IMS_CLONING_TOOL_OPTIONS section" on page 33
• ":COPY_OPTIONS section" on page 34
• ":IMS_OPTIONS section" on page 35
• ":DB_COPY_OPTIONS section" on page 37
• ":IMS_CLONING_TOOL_DEFAULTS section" on page 41
• ":RESOURCE_SERIALIZATION section" on page 46
**:PRODUCT_INFO section**

GCLINI contains a :PRODUCT_INFO section.

**Purpose**

This section defines the product version and release.

**Note:** Do not modify the tokens in the :PRODUCT_INFO section. They can be modified only via the GCLIMRG utility. These tokens are documented for your information only.

**Parameters**

- **GCL_REL** = *version/release number*
  
  Used to verify the product version and release number. Do not alter this value.

- **GCL_REL_DATE** = *release date*
  
  Used to verify the product release date. Do not alter this value.

**:INIMERGE_VALUES section**

GCLINI contains an :INIMERGE_VALUES section.

This section is used to pass values to the GCLIMRG program that is used to merge the GCLINI file from one release to another. Values in this section are provided by Technical Support.

**Parameters**

- **SPECIAL_SECTIONS** = *value*
  
  The value for this token will be updated by technical support only. For 0201 (vvrr) the values are: SPECIAL_SECTIONS=SI040_VALUES SI027_VALUES

**:SI027_VALUES section**

GCLINI contains an :SI027_VALUES section.

**Purpose**

Changes or additions to this section must be authorized by and under the direction of IBM support only.

**:SI040_VALUES section**

GCLINI contains an :SI040_VALUES section.

**Purpose**

Changes or additions to this section must be authorized by and under the direction of IBM support only.

**:IMS_CLONING_TOOL_OPTIONS section**

GCLINI contains an :IMS_CLONING_TOOL_OPTIONS section.

**Purpose**

This section defines options that are used by multiple commands.
Parameters

**SPACE_MANAGEMENT = HSM|ABR(#) |DMS|NONE**

Valid values are HSM, DMS, ABR(#), or NONE. The values HSM, DMS, and ABR(#) can be specified as a single option or together. NONE cannot be specified with any other option.

- HSM and ABR(#) indicate that IMS Cloning Tool should use the volser “MIGRAT” as an indication that a data set has been migrated.
- DMS indicates that IMS Cloning Tool should use the volser “ARCIVE” as an indication that a data set has been migrated.

The default value is HSM.

**CONCURRENT_EXECUTIONS = Y|N**

This option addresses the situation where multiple jobs are running concurrently and need exclusive control over the same basic catalog structure (BCS).

- N - Indicates that if another job has exclusive control over a BCS, the IMS Cloning Tool job that wants exclusive control of the same BCS will fail with an error.
- Y - Indicates that if another job has exclusive control over a BCS, the IMS Cloning Tool job that wants exclusive control of the same BCS will wait until the BCS is available. The maximum time to wait is specified with the CONCURRENT_EXECUTIONS_WAIT_TIME keyword.

**CONCURRENT_EXECUTIONS_WAIT_TIME = nnn|5**

Specifies the maximum wait time in minutes to be used if CONCURRENT_EXECUTIONS = Y is specified. The maximum value that can be specified is 999. The minimum value that can be specified is 0. However, if 0 is specified, the execution will not retry if control of the BCS is not obtained, and the command will fail.

The default is 5.

**:COPY_OPTIONS section**

GCLINI contains a :COPY_OPTIONS section.

**Purpose**

This section defines the options that are used during volume copy operations. These options can be overridden by settings of keywords on the COPY command.

**Parameters**

**CATWORK_ATTR = catalog work data set allocation attributes**

Catalog “work” data sets contain catalog entries that are captured during the COPY step and passed to other steps. This token controls allocation attributes for these data sets if the attributes are not specified by the COPY GCLIN control statements. Specify attributes in TSO ALLOCATE syntax, for example, UNIT(SYSALLDA) SPACE(10 10) CYLINDERS. The attributes that can be specified are:

- DATACLAS(data class name)
- MGMTCLAS(management class name)
- SPACE(quantity increment)
- STORCLAS(storage class name)
- TRACKS/CYLINDERS UNIT(unit)
TARGET_VOLS_SHOULD_BE_EMPTY = Y/N

Specifies whether to perform a check during the source-to-target volume pairing process to ensure that the target volumes are empty before issuing FlashCopy or SnapShot. If Y is specified and if a subsequent RENAME fails and the COPY must be rerun, IMS Cloning Tool will not clean off the target volumes. In this case, either initialize the target volumes or change this keyword value to N.

- If the “eliminated” target volumes cause more source volumes than target volumes to exist, the COPY will fail.
- If the “eliminated” target volumes cause at least as many target volumes as source volumes to exist, the pairing will continue as usual.

The default value is N.

:IMS_OPTIONS section

GCLINI contains an :IMS_OPTIONS section.

Purpose

This section defines options that are used when updating IMS internals. These options can be overridden by settings of keywords on the IMSUPDATE command.

Parameters

ACB_NOT_FOUND_RC = nnn|4

Optional keyword that supplies the return code to be used if a DMB is not found in the ACBLIB for any database defined for the IMS. This value is only used if the ACB-NOT-FOUND-RC keyword is not specified on an IMSUPDATE command.

The default value is 4.

DSNAME-ERROR-DBRC-SYMBOLS = ERROR|WARN|IGNORE

Optional keyword that specifies action to take when a target data set name contains DBRC symbols and is longer than 44 characters. This value is only used if the DSNAME=ERROR-DBRC-SYMBOLS keyword is not specified on an IMSUPDATE command.

- ERROR – an error message will be generated and the JCLPDS member will not be updated.
- WARN – a warning message will be generated and the JCLPDS member will be updated with the long target data set name.
- IGNORE – the JCLPDS member will be updated with the long target data set name.

The default value is ERROR.

JCLPDS_NOT_UPDATED_RC = nn|4

Optional keyword that supplies the return code to be used if IMS Cloning Tool was not able to update a member in any of the JCLPDS data set(s). This value is only used if the JCLPDS-NOT-UPDATED keyword is not specified on an IMSUPDATE command.

The default value is 4.

MDA_NOT_UPDATED_RC = nn|4

Optional keyword that supplies the return code to be used if IMS Cloning Tool
was unable to update an MDA member in any of the MDA data set(s). This value is only used if the MDA-NOT-UPDATED keyword is not specified on an IMSUPDATE command.

The default value is 4.

**RDDS NOT UPDATED RC** = *nn|4*
Optional keyword that supplies the return code to be used if IMS Cloning Tool was unable to update any of the RDDS data set(s). This value is only used if the RDDS-NOT-UPDATED keyword is not specified on an IMSUPDATE command.

The default value is 4.

**RECON NOT UPDATED RC** = *nn|4*
Optional keyword that supplies the return code to be used if IMS Cloning Tool was unable to update a record in any of the RECON data set(s). This value is only used if the RECON-NOT-UPDATED-RC keyword is not specified on an IMSUPDATE command.

The default value is 4.

**RENAME_ARCHIVE_LOGS** = *N|Y*
Optional keyword that specifies whether the data set names and VOLSERs of the IMS archive logs in the RECON data sets are changed if the IMS archive logs are on the source DASD volumes and were copied to the target volumes. This value is only used if the RENAME-ARCHIVE-LOGS keyword is not specified on an IMSUPDATE command.

- **N** – Does not change the data set names and VOLSERs of the IMS archive logs in the RECON data sets even if the IMS archive logs have been copied to the target volumes.
- **Y** – Renames the data set names and VOLSERs of the IMS archive logs in the RECON data sets on the target volumes if copied from the source DASD volumes.

The default value is N.

**RENAME_CAS** = *N|Y*
Optional keyword that specifies whether the data set names and VOLSERs of the Change Accumulation records in the RECON data sets are changed if the Change Accumulation data sets are on the source DASD volumes and were copied to the target volumes. This value is only used if the RENAME-CAS keyword is not specified on an IMSUPDATE command.

- **N** – Does not change the data set names and VOLSERs of the Change Accumulation records in the RECON data sets on the target volumes if they are copied from the source DASD volumes.
- **Y** – Renames the data set names and VOLSERs of the Change Accumulation records in the RECON data sets on the target volumes if they are copied from the source DASD volumes.

The default value is N.

**RENAME_IICS** = *N|Y*
Optional keyword that specifies whether the data set names and the VOLSERs of the Image Copy records in the RECON data sets are changed if the Image Copy data sets are on the source DASD volumes and if they were copied to the target volumes. This value is only used if the RENAME-ICS keyword is not specified on an IMSUPDATE command.
• N – Does not change the data set names and VOLSERs of the Image Copy records in the RECON data sets on the target volumes if they are copied from the source DASD volumes.

• Y – Renames the data set names and VOLSERs of the Image Copy records in the RECON data sets on the target volumes if they are copied from the source DASD volumes.

The default value is N.

REPO_NOT_UPDATED_RC = nn | 4
Optional keyword that supplies the return code to be used if IMS Cloning Tool was unable to update any of the repository data sets. This value is only used if the REPO-NOT-UPDATED keyword is not specified on an IMSUPDATE command. The default value is 4.

:DB_COPY_OPTIONS section
GCLINI contains a :DB_COPY_OPTIONS section.

Purpose

This section defines the options that IMS Cloning Tool uses for the database and data set copy operations. These options can be overridden by the settings for the DBREFRESH command for the target.

Parameters

ALLOW_PARTIAL = n
Indicates whether the source job can optionally start each source IMS database after the copy process is complete. Valid values are:

• Y – Allows IMS Cloning Tool to continue processing other databases if an error is encountered with one or more databases.

• N – (the default) Indicates that IMS Cloning Tool should stop the IMSDBREFRESH process if an error is encountered with any of the databases.

ARCHIVE_WAIT_TIME = n
Optional keyword that indicates how long IMS Cloning Tool waits for an online log data set to be archived before the IMSDBREFRESH job terminates abnormally. The wait time must be a numeric value between 0 and 999. The value specified indicates the number of minutes to wait.

This value is only applicable if LOG-APPLY=Y was specified and is only used if the ARCHIVE-WAIT keyword is not specified on an IMSDBREFRESH command. The default value is 5.

ARCHIVE_WAIT_RC = n
Optional keyword that indicates the return code IMS Cloning Tool terminates with if an online log data set containing updates for the source databases has not been archived does not completed in the ARCHIVE_WAIT_TIME specified. The return code must be a numeric value between 0 and 4095.

This value is only applicable if LOG-APPLY=Y was specified and is only used if the ARCHIVE-WAIT keyword is not specified on an IMSDBREFRESH command. The default value is 8.

AUTO_START_SOURCE_DB = Y | N
Indicates whether the source job can optionally start each source IMS database after the copy process is complete. Valid values are:
Y – Allows IMS Cloning Tool to start the source databases after the copy process is complete.
N – Indicates that the source databases should remain stopped after the copy process is complete.

The default value is Y.

**AUTO_START_TARGET_DB = Y/N**
Indicates whether IMS Cloning Tool should automatically issue the START DB command for the database.

This token determines if IMSDBREFRESH processing in the target job issues an IMS START DATABASE command for the databases being processed after all of the Sync I/O to the data set is complete. This value determines the value of the START-DB command in each invocation of the IMSDBREFRESH command in the target job.

Note that the AUTO-START-TARGET-DB value from the IMSDBREFRESH command overrides the value from the GCLINI member in the SGCLPARM library.

The default value is Y.

**AUTO_STOP_TARGET_DB = Y/N**
Indicates whether IMS Cloning Tool should automatically issue a DBR DB DATABASE IMS command for each target database. Valid values are:

- **Y** – To have IMS Cloning Tool issue the DBR command. The DBR command must complete before the copy processing can begin because IMS Cloning Tool must have exclusive control of the target database data sets.
- **N** – To have IMS Cloning Tool assume that the database is already stopped and to not issue the DBR command before the copying begins. If the database is not stopped, DFSMSdss will get an allocation error.

Note that the AUTO-STOP-TARGET-DB value from the IMSDBREFRESH command overrides the value from the SGCLPARM library.

The default value is Y.

**DATA_MOVER = ADRDSSU | EMCAPI | NONE**
Optional keyword that specifies the program to be used to initiate copies and copy options.

- **ADRDSSU** - (the default) specifies that COPY is to initiate FlashCopy or SnapShot 'under the covers' via execution of DSS.
- **EMCAPI** - specifies that IMS Cloning Tool Database Refresh is to invoke EMC TimeFinder/Clone to make the copies using the data set snap facility. Refer to the topic [the DATA-MOVER keyword in IMSDBREFRESH](#) for additional information.
- **NONE** - specifies that no DATA-MOVER is to be invoked by the IMSDBREFRESH command. NONE infers that data set copies will be initiated by the user. When NONE is specified, IMSDBREFRESH still validates necessary IMS database characteristics, stops the source databases if requested, and builds the list of data sets as input to the user copy.

The default value is ADRDSSU.

**DBRC_ACTION = REDEFINE | REORG**
Optional keyword that indicates the DBRC action to perform for the target databases after refreshing them. If DBRC-ACTION(REORG) is specified, IMS Cloning Tool performs a NOTIFY.REORG for all database data sets that were
refreshed. If DBRC-ACTION(REDEFINE) is specified, IMS Cloning Tool performs a LIST.DB to provide a reference for current DBRC definitions, followed by a DELETE.DB, INIT.DB, and any INIT.DBDS, INIT.PART, and INIT.AREA commands to redefine the target database. This value is only used if the DBRC-ACTION keyword is not specified on an IMSDBREFRESH command.

The default value is REDEFINE.

**FASTREP = PREF | REQ | NONE**

Optional keyword that indicates whether fast replication is preferred (PREF), required (REQ), or not required (NONE).

The default is PREF

**FCTOPPRCPRIMARY = PRESMIRNONE | PRESMIRREQ | PRESMIRPREF**

Optional keyword that indicates what action to perform for preserving mirror when a FlashCopy target volume can also be a PPRC primary volume.

- PRESMIRREQ - Require the use of Preserve Mirror. If a Preserve Mirror operation cannot be accomplished, the FlashCopy operation will not be completed.
- PRESMIRPREF - Prefer the use of Preserve Mirror. If a Preserve Mirror operation cannot be accomplished, the FlashCopy operation is still performed
- PRESMIRNONE - Do not use Preserve Mirror.

This parameter applies to ESS devices only; it does not apply when FASTREP(NONE) is also specified. The default value is PRESMIRNONE.

**DSNS_PER_COPY = 255**

Specifies the number of data sets to include in each DFSMSdss copy command. The valid range of values is from 1 through 255. By changing this value, you may be able to improve performance.

The default is 255.

**DSS_COPY_COMMANDS = 8**

The DSS_COPY_COMMANDS parameter specifies the number of DSS copy commands to send to DSS in a single invocation. Valid values are 1 to 256; specifying a large value may result in storage shortage abends.

The default is 8.

**LOG_APPLY = N | Y**

Optional keyword that indicates if IMS Cloning Tool should apply log updates from the source databases to the target databases after copying the source databases. If ‘Y’ is specified, IMS Cloning Tool applies logs to complete any in-flight updates to the target databases after copying them. If ‘N’ is specified, IMS Cloning Tool does not apply any updates to the target databases after copying the data sets. This could result in in-flight updates existing in the target databases if FUZZY-COPY=Y was specified.

This value is only used if the LOG-APPLY keyword is not specified on an IMSDBREFRESH command.

The default is N.

**MAX_COPY_RC = 0 | 4 | 8**

Specifies the maximum return code that can be returned from data set copy
processing before causing the IMSDBREFRESH to stop. This token value will allow one or more DFSMSdss copy operations to fail while other copy operations continue.

For example, STOP JOB WHEN > MAX_COPY_RC OCCURS WHEN COPYING DATA specifies that, when copying data, IMS Cloning Tool should stop the job when a return code from a copy function is greater than the value specified in the MAC_COPY_RC keyword.

The default value is zero. If 0 is specified, any data set copy requests that end with a return code greater than zero will cause the IMS Cloning Tool command to terminate.

\textbf{MAX\_RC} = 0 | 4

Specifies the maximum value that a return code from an IMS Cloning Tool process can have for a job to continue running. This token value does not apply to data set copy processing. (See the MAX_COPY_RC keyword for the maximum return code for data set copy processing.)

For example, STOP JOB WHEN > MAX\_RC specifies that IMS Cloning Tool should stop the database refresh processing when a return code from any process is greater than the value specified by the MAX\_RC keyword. If this keyword is set to zero and some IMS databases are not found on the target, no source databases will be copied. Set MAX\_RC to 4 if you want to complete the cloning process for the databases that can be copied, even if the other the databases cannot be cloned.

The default value is zero.

For example, to stop a job when any warning message is issued, set MAX\_RC=0. To allow IMS Cloning Tool to complete if one or more warning messages are issued, set MAX\_RC=4.

\textbf{REPLACE\_TARGET\_DS} = Y | N

Indicates whether IMS Cloning Tool should replace the data set on the target if it already exists.

- \textbf{Y} – To have IMS Cloning Tool overlay the existing target data set with the source data set.
- \textbf{N} – To have IMS Cloning Tool fail if the target data set already exists.

The default value is \textbf{Y}.

\textbf{SET\_IC\_NEEDED\_OFF} = Y | N

Optional keyword that indicates whether IMS Cloning Tool resets the image copy needed flag for a target database after it has been refreshed and a NOTIFY.REORG was issued. A value of \textbf{Y} indicates that IMS Cloning Tool resets the image copy needed flag. A value of \textbf{N} indicates that IMS Cloning Tool does not reset the image copy needed flag after doing the NOTIFY.REORG. This value is only used if the DBRC-ACTION keyword is not specified on the IMSDBREFRESH command and REORG is specified for the DBRC\_ACTION keyword in GCLINI.

The default value is \textbf{Y}.

\textbf{STOP\_COMMAND} = DBR | DBD | QUIESCE

Optional keyword that indicates the IMS command to be used to stop the source databases. When \textbf{DBR} is specified, the DBRECOVER command is used, and all access to the source databases will be stopped. When \textbf{DBD} is specified, the DBDUMP command will be issued and the full function source databases will be put into read-only mode, and a DBRECOVER command will be issued
for DEDBs. When QUIESCE is specified, an UPDATE DB QUIESCE command will be used and IMS will only pause access to the source databases for the duration of the copy. The default value is DBR.

**SWITCH_OLDS** = \( N | Y \)

Optional keyword that dictates if IMS Cloning Tool issues a /SWI OLDS command to the source IMS system after copying the database data sets and prior to reading the archive log data sets in order to fine log records to apply to the target databases. When "Y" is specified, IMS Cloning Tool issues a /SWI OLDS command. When "N" is specified, IMS Cloning Tool does not issue a /SWI OLDS command after copying the database data sets.

This value is only applicable if LOG-APPLY=Y was specified and is only used if the SWITCH-OLDS keyword is not specified on an IMSDBREFRESH command.

The default is Y.

**VERIFY-NO-UPDATERS** = \( Y | N \)

This parameter specifies whether IMS Cloning Tool verifies that the source databases are not currently authorized by an IMS subsystem or batch job that could be updating the source databases. This check is only applicable if IMS Cloning Tool will be doing a fuzzy copy of the source databases.

Note: The VERIFY-NO-UPDATERS value from the IMSDBREFRESH command overrides this value from the GCLINI member in the SGCLPARM library.

The default value is N.

**:IMS_CLONING_TOOL_DEFAULTS section**

GCLINI contains an IMS_CLONING_TOOL_DEFAULTS section.

**Purpose**

This section defines the options that are used during data set rename operations. These options can be overridden by settings of keywords on the RENAME command.

**Parameters**

**GDG_ALL_MIGRATED** = \( SKIP | RETAIN \)

This option addresses the situation where a generation data group (GDG) matches a RENAME mask and all of the generations have been migrated. The GDG can be skipped, or the generation data set (GDS) entry can be retained with its new target name. Valid values are:

- **SKIP** – Skip the GDG entry during BCS update processing.
- **RETAIN** – Copy the migrated entry as is, to the target BCS.

Note: If RETAIN is specified, because the migrated generations do not exist under the new name, subsequent access to any generation will fail, regardless of whether the generation is accessed specifically or by specifying the base name only. This option is provided to retain relativity.

Important: To avoid destroying the relativity of active generations, IMS Cloning Tool does NOT allow removing selected generations. Any
migrated data that is required on the target volumes must be
called prior to the COPY.
The default value is SKIP.

GDG_ALL_MIGRATED_RETAIN_RC = blank | 0 | 4
Specifies the return code to be used if GDG_ALL_MIGRATED = RETAIN is
specified.
The default is 4.

GDG_EMPTY = SKIP | RETAIN
This option addresses the situation where an empty base GDG matches a
RENAME mask. Valid values include:

• SKIP – Any empty base GDG entries that match a RENAME mask are
  skipped and not added to the target user catalog.
• RETAIN – Any empty base GDG entries encountered that match a
  RENAME mask are added to the target user catalog, as is.

The default value is SKIP.

GDG_EMPTY_RETAIN_RC = blank | 0 | 4
Specifies the return code to be used if GDG_EMPTY = RETAIN is specified.
The default is 4.

GDG_MIGRATED = ERROR | RETAIN
This option addresses the situation where a GDG matches a rename mask, at
least one generation is found on a volume, and one or more generations have
been migrated. The migrated generations can be treated as an error, or the
GDS entry in the GDG base record can be retained with a corresponding
return code of 0 or 4. Valid values are:

• ERROR – Terminate the BCS update process with an error.
• RETAIN – Copy the migrated entry, as is, to the target BCS.

Note: If RETAIN is specified, because the migrated generation does not exist
under the new name, subsequent access to the generation will fail,
regardless of whether the generation is accessed specifically or by
specifying the base name only.

To avoid destroying the relativity of active generations, IMS Cloning Tool does
not allow removing selected generations.

The retention of non-existent migrated generations might be suitable in certain
situations, such as for overstated GDG limits (where older generations are
normally migrated and never accessed again) or for log files where only the
current generation is kept as the primary version and the older migrated
generations are kept only as a safety factor.

The default value is ERROR.

GDG_MIGRATED_RETAIN_RC = blank | 0 | 4
Specifies the return code to be used when GDG_MIGRATED = RETAIN is
specified.

GDG_TAPE = ERROR | RETAIN = ERROR | RETAIN
This option addresses the situation where a GDG matches a RENAME mask, at
least one generation is found on a volume, and one or more generations are on
tape. The tape generations can be treated as an error, or the GDS entries in the
GDG base record can be retained with a corresponding return code of 0 or 4.
Valid values are:
- **ERROR** = Terminate the BCS update process. If ERROR is specified, the command that was updating the BCS will fail.
- **RETAIN** = Copy the tape entry, as is, to the target BCS.

**Note:** If RETAIN is specified, accessing a target tape GDS will cause a S813 ABEND whether it is accessed specifically or via specification of the base name only.

To avoid destroying the relativity of active generations, IMS Cloning Tool does not allow removing selected generations.

The retention of non-existent tape generations might be suitable in certain situations, such as for overstated GDG limits where older generation might have been created on tape.

The default value is ERROR.

**GDG_TAPE_RETAIN_RC** = blank | 0 | 4
Specifies the return code to be used when GDG_TAPE = RETAIN is specified.

The default is 4.

**ISSUE_GCL14141I** = ALL | DASD | MIG | TAPE | NOMSG
Issues message number GCL14141I when a data set matches the RENAME-MASKS parameter for the RENAME command but the data set was not on the IMS Cloning Tool source volumes.

By setting one of the following options for this keyword, you can customize which data set the error reports on by using the option(s) specified in the GCLINI member of the SGCLPARM library. The DASD, MIG, and TAPE options can be specified in any combination.

- **ALL** – Issues the message for any data set that matches the RENAME-MASKS value but is not on the source volumes.
- **DASD** – Issues the message for any DASD data set that matches the RENAME-MASKS value but is not on the source volumes.
- **MIG** – Issues the message for any migrated data set that matches the RENAME-MASKS value.
- **TAPE** – Issues the message for any tape data set that matches the RENAME-MASKS value.
- **NOMSG** – Does not issue the message GCL14141I.

The default value is ALL.

**MAX_RENAME_TASKS** = 1 | nnn
Specifies the maximum number of subtasks that is used by the RENAME command for volume processing if the RENAME GCLIN MAXTASKS keyword is not supplied. At some point, increasing the number of subtasks will cease to increase performance because of resource contention. Specifying a value that is too large might result in termination because of memory constraints.

The default value is 1. The maximum value is 255.

**MISSING_USERCAT_DISP** = DELETE | KEEP
Specifies whether to keep any target volume data sets for which the VSAM volume data set (VVDS) catalog back-pointer is not cataloged in the list that is supplied to the COPY step. This value is used if the corresponding MISSINGUCAT keyword is not specified in the RENAME GCLIN control statements.
• **KEEP** – Any target volume data sets that point to a catalog not specified in the USERCATALOGS keyword of the COPY step are retained on the target volume, but are not cataloged.

• **DELETE** – Any target volume data sets that point to a catalog not specified in the USERCATALOGS keyword of the COPY step are deleted from the target volumes.

The default value is **KEEP**.

**MISSING_USERCAT_RC = 0|4|8**

Specifies the return code to be generated for the RENAME command if one or more target volume data sets contain a VVDS catalog back-pointer that is not in the list that is supplied to the COPY step. This value is used if the corresponding MISSINGUCAT keyword is not specified in the RENAME GCLIN control statements.

The default value is 4.

**NOT_RENAMED_DISP = DELETE | KEEP = DELETE|KEEP**

Specifies the disposition of target-volume data sets that are not renamed because they do not match a rename mask. This value is used if the corresponding NOTRENAME keyword is not specified in the RENAME GCLIN control statements.

• **DELETE** – Deletes any target-volume data sets that do not match a rename mask and are therefore not renamed.

• **KEEP** – Retains target-volume data sets even if they do not match a rename mask and are therefore not renamed.

The default value is **KEEP**.

**NOT_RENAMED_RC = 0|4|8**

Specifies the return code to be generated for the RENAME command if one or more target volume data sets are not renamed because they do not match a rename mask. This value is used if the corresponding NOTRENAME keyword is not specified in the RENAME GCLIN control statements.

The default value is 8.

**ORPHAN_CATENTRY_DISP = DELETE | KEEP = DELETE|KEEP**

Specifies the disposition of target-volume data set catalog entries in circumstances where the data sets are not found on the target volume. This value is used if the corresponding ORPHANCATENTRY keyword is not specified in the RENAME GCLIN control statements.

• **DELETE** – Deletes any target-volume data set catalog entries that do not have data sets on the target volume.

• **KEEP** – Retains target-volume data set catalog entries even if an associated data set is not found on the target volume.

The default value is **KEEP**.

**RECATALOG = Y|N**

Indicates whether IMS Cloning Tool can replace existing catalog entries, if encountered, when cataloging target volume data sets. This value is used if the corresponding RECATALOG keyword is not specified in the RENAME GCLIN control statements.

• **Y** – IMS Cloning Tool replaces existing catalog entries, if encountered, when cataloging target volume data sets.

• **N** – IMS Cloning Tool does not replace any existing catalog entries encountered when cataloging target volume data sets.
The default value is N.

**TEMP_DATASET_DISP** = DELETE|KEEP

Specifies the disposition of temporary data sets that are found on the target volumes. This value is used if the corresponding TEMPDSN keyword is not specified in the RENAME GCLIN control statements.

- **DELETE** – Deletes the temporary data sets found on the target volumes.
- **KEEP** – Retains the temporary data sets found on the target volumes.

The default value is DELETE.

**TEMP_DATASET_RC** = 0|4|8

Specifies the return code to be generated for the RENAME command if one or more temporary data sets are found on the target volumes. This value is used if the corresponding TEMPDSN keyword is not specified in the RENAME GCLIN control statements.

The default value is 4.

**VTOCIX_REBUILDER** = MSC|IBM

Specifies the method to be used for rebuilding the VTOCIX during the RENAME command. Valid values include:

- **IBM** – Uses ICKDSF to rebuild the VTOCIX
- **MSC** – Uses the "on-board" VTOCIX rebuild function. For Extended Address Volumes ICKDSF will always be used to rebuild the VTOCIX. The default is MSC.

The default value is MSC.

**RENNAME_ERROR** = ABORT|CONTINUE

This option specifies how processing proceeds when a RENAME error is encountered. This value is used if the corresponding RENAME-ERROR keyword is not specified in the RENAME GCLIN control statements. Valid values are:

- **ABORT** – Terminate processing with return code RC=8 after the first error is encountered to preserve data integrity. This option is the recommended value.
- **CONTINUE** - Continue processing after most errors. The RENAME command will complete with the specified return code unless an error is encountered that is not handled by the CONTINUE logic.

**Important:** The CONTINUE option can cause inconsistencies between the volumes and catalogs. Possible problems include:

- Data sets were cataloged but not renamed on disk.
- Data sets were renamed on disk but not cataloged.
- Data sets were not renamed on disk and cannot be deleted from disk.
- GDG base entries and GDS entries do not exist in the catalog when a GDS is missing.
- A catalog entry might not point to the correct volume, or a catalog entry might be invalid.
- CONTINUE might leave uncataloged data sets on SMS-managed volumes.

If this keyword is specified, IMS Cloning Tool will not guarantee data integrity and will not attempt to fix the given results.
The default value is ABORT.

\texttt{RENAME\_ERROR\_CONTINUE\_RC = 0|4|8}

Specifies the return code to be used if \texttt{RENAME\_ERROR = CONTINUE} is specified. This value is used if the corresponding \texttt{RENAME\_ERROR} keyword is not specified in the \texttt{RENAME} GCLIN control statements.

The default value is 8.

\texttt{ISSUE\_VCLOSE = YES|NO|BEFORE|AFTER}

Specifies whether a catalog modify command will be issued as part of the volume \texttt{RENAME} processing. This modify command has the following syntax: \texttt{F CATALOG,VCLOSE(targetvolser)}. Typically, the catalog address space (CAS) caches VVDS information. The modify command requests a refresh of the VVDS information that is cached for the target volume. This value is used if the corresponding \texttt{ISSUE\_VCLOSE} keyword is not specified in the \texttt{RENAME} GCLIN control statements. Valid values are:

- \texttt{NO} – Indicates that the modify command will NOT be issued.
- \texttt{BEFORE} - Indicates that the modify command will be issued only before the VVDS is updated.
- \texttt{AFTER} – Indicates that the modify command will be issued only after the VVDS has been updated.
- \texttt{YES} – Indicates that the modify command will be issued both before the VVDS is updated and after the VVDS has been updated.

The default value is \texttt{YES}.

\texttt{ISSUE\_VCLOSE\_SCOPE = LOCAL|SYSPLEX}

If the GCLI parameter \texttt{ISSUE\_VCLOSE} is set to \texttt{YES}, \texttt{BEFORE}, or \texttt{AFTER}, this keyword indicates the scope of the catalog modify command \texttt{F CATALOG,VCLOSE(targetvolser)}. Valid values are:

- \texttt{LOCAL} – Issues the catalog modify command only on the system where the \texttt{RENAME} operation is running
- \texttt{SYSPLEX} – Issues the catalog modify command on the local system, and after the VVDS has been updated, routes the command to all of the other systems in the sysplex by using an MVS™ ROUTE *OTHER command.

This value is used if the corresponding \texttt{ISSUE\_VCLOSE} keyword in the \texttt{RENAME} GCLIN control statements does not indicate the scope.

The default value is \texttt{LOCAL}.

\texttt{:RESOURCE\_SERIALIZATION section}

GCLI contains a \texttt{:RESOURCE\_SERIALIZATION} section.

\textbf{Purpose}

Installations running CA-MIM/MII with multiple systems and shared DASD need to set the following parameter to \texttt{YES} to ensure that when CA-MIM/MII GDIF is inactive, the IMS Cloning Tool data sets are protected from data corruption.

\textbf{Parameters}

\texttt{MIM\_GDIF = NO|YES}

If you are running CA-MIM/MII with multiple systems and shared DASD, set this token value to \texttt{YES} to ensure that when CA-MIM/MII GDIF is inactive, the IMS Cloning Tool data sets are protected from data corruption.

The default value is \texttt{NO}. 
Chapter 3. Using IMS Cloning Tool – IMS subsystem cloning

The sections in this chapter provide information about using the subsystem cloning features of IMS Cloning Tool.

The steps you must take to prepare and clone an IMS subsystem vary depending on how you are copying volumes: either with FlashCopy or SnapShot, or with onsite mirroring tools.

Planning to clone an IMS subsystem

The following sections cover the steps you must take before cloning an IMS subsystem.

Before attempting to use IMS Cloning Tool for cloning IMS subsystems or databases, you need to consider some planning and decision-making issues.

Note: The BCSCLEAN command can be used to delete target catalog entries created from a previous run of the IMS Cloning Tool processing that may be orphaned as a result of target volume contents being replaced. The BCSCLEAN command will remove only the catalog entries for data sets that were included in the last cloning process; any other catalog entries for data sets that are not involved with the cloning process will remain. If these are data sets that could be recataloged in a subsequent cloning process they will need to be deleted prior to running the subsequent cloning process to prevent orphaned data sets.

Selection of source and target volumes

Consider the following requirements when planning the cloning environment:

- "Scope of source volumes to be copied" on page 48
- "Desired target volume data sets" on page 48
- "Source and target volume condition" on page 48
- "Target volume online status" on page 48
- "Data set and sphere integrity" on page 49
- "Discrete volumes vs. SMS storage group specification" on page 49
- "Migrated data sets" on page 49
- "Requirements for source and target volume pairing" on page 50

Scope of source volumes to be copied

The source volumes to be copied must include all of the data sets that are required by the applications that will access the renamed data sets on the target volumes.

Because entire volumes (as opposed to individual data sets) will be copied, you should try to conserve DASD space by dedicating the source volumes to the applications involved or at least by minimizing the presence of uninvolved data sets on those volumes.

The source volumes must contain the IMS system data sets as well as the IMS databases that your applications use.
**Desired target volume data sets**

Any copies of data sets that will be used by an application must be included in the list of cloned volumes and must match a rename mask.

IMS Cloning Tool does not require that all data sets on the target volumes be renamed. You can use the NOTRENAMED parameter to specify:

- The disposition of any data sets that do not match a rename mask
- The return code that is issued if at least one data set is not renamed

If all data sets on all copied volumes are critical, use a return code of 8 as an indication that errors occurred and that the copy process must be rerun after the errors are corrected. When a return code of 8 is issued, the application will assume that a RENAME failure occurred.

If you intend for the rename masks to match only some data sets, specify a return code of 0 or 4. Also, you should normally specify a disposition of DELETE if the volumes are SMS-managed (in keeping with SMS rules) or if the space that is occupied by the “not renamed” data sets might be needed for subsequent allocations.

**Note:** By not renaming all data sets, you essentially perform a selective data set copy. The data sets that are renamed and retained occupy the same track locations as their source volume counterparts.

IMS Cloning Tool deletes any temporary data sets on the target volumes that were created by the volume copies. IMS Cloning Tool does not detect, catalog, or delete any data sets on the target volumes that correspond to uncataloged source volumes. However, even though these target data sets are not cataloged, they will be renamed if they match a rename mask.

**Note:** For performance reasons, IMS Cloning Tool does not diagnose from volume to basic catalog structure (BCS) to detect anomalies, such as uncataloged data sets, especially when the anomaly can be replicated each cycle of the process. It is recommended that volumes and catalogs be diagnosed routinely to identify and repair any problems.

Although an ICF catalog can be renamed, it will not be usable as an ICF catalog.

**Source and target volume condition**

When planning to clone an IMS subsystem, you must consider the condition of the source and target volumes.

To prevent volume internal VTOC index and VVDS errors, ensure that the VTOC, VTOCIX, and VVDS are in the same location on the source volumes as they are on the target volumes prior to the COPY processing.

**Target volume online status**

When planning to clone an IMS subsystem, you must consider the condition of the status and location of the target volumes.

To prevent volume internal VTOC index and VVDS errors, ensure that the VTOC, VTOCIX, and VVDS are in the same location on the source volumes as they are on the target volumes prior to the COPY processing.
**Data set and sphere integrity**

By default, IMS Cloning Tool will detect and fail the rename process if one of these data set integrity rules is violated:

The following table lists the integrity rules for each type of data set.

*Table 5. Data set integrity rules*

<table>
<thead>
<tr>
<th>Data set</th>
<th>Integrity rule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multivolume data sets</td>
<td>All segments of multivolume data sets, where the source volume data set matches a rename mask, must be wholly contained within the list of source volumes. The term “multivolume data sets” implies multivolume data sets, striped data sets, and VSAM spheres.</td>
</tr>
<tr>
<td>VSAM spheres</td>
<td>All components and associations of VSAM spheres, where the cluster name matches a rename mask, cannot be partially must be wholly on the source volumes. The volume list must include all components of a cluster and any alternate indexes and index components that are associated with the base.</td>
</tr>
<tr>
<td>GDGs</td>
<td>All active generations of a GDG base, where the base name matches a rename mask, must be wholly on the source volumes. Exceptions are allowed for active generations that are on tape or that have been migrated to other media; however, IMS Cloning Tool references to such target entries will fail.</td>
</tr>
<tr>
<td>Non-VSAM data set aliases</td>
<td>If a data set on a volume matches a rename mask and has one or more aliases, all aliases must also match some rename mask.</td>
</tr>
</tbody>
</table>

**Discrete volumes vs. SMS storage group specification**

If you use FlashCopy or SnapShot, you can indicate the source and target volumes by specifying SMS storage groups instead of discrete volumes.

This practice reduces the maintenance that you will need to perform to ensure that the volumes used by an application are included in the FlashCopy or SnapShot list. In your storage group specifications, you can use the available exclude options to exclude certain source or target volumes from the storage group list.

**Migrated data sets**

You must ensure that the data sets to be copied, including any active generations of a renamed GDG, are not allowed to be migrated before the volume copies are created.

If you COPY source volumes, RENAME data sets on the new target volumes, and then start the processing against the target volumes, your processing will fail if a job tries to access a renamed generation that was migrated at the time of the COPY and therefore not copied. Your entire process could therefore be compromised. IMS Cloning Tool does NOT copy migrated data.
Requirements for source and target volume pairing
When planning for the use of the source volumes, ensure that each source volume is paired with a target volume.

Requirements for FlashCopy source and target volumes:
- The source and target volumes must be in the same subsystem.
- The source and target volumes must have the same track format (for example, 3380 vs. 3390).
- The target volume size must be equal to or greater than the source volume size.

For more information on FlashCopy source and target pairing rules, contact IBM.

Requirements for SnapShot source and target volumes:
- The source and target volumes must be in the same RVA partition.
- The source and target volumes must have the same track format (for example, 3380 vs. 3390).
- The target volume size must be equal to or greater than the source volume size.

For more information on SnapShot source and target pairing rules, contact StorageTek.

Volume relationship conflicts
Ensure that when IMS Cloning Tool initiates FlashCopy or SnapShot by means of the ADRDSSU program, no other volume relationships exist that would cause IMS Cloning Tool to reject a volume or cause ADRDSSU to fail.

For more information on valid volume relationships, contact IBM or StorageTek.

If you use FlashCopy and want to allow other volume relationships after the IMS Cloning Tool copy processing is complete, you can use the COPYCHECK command with the WAIT keyword. The WAIT keyword causes IMS Cloning Tool to check for copy completion at a specified time interval. After copy processing completes, other volume relationships can form.

Data set renaming considerations
Existing data set naming conventions will dictate the required rename masks to ensure that all required data sets are renamed, and that renaming does not result in two or more data sets renamed to the same target name.

Because IMS Cloning Tool renaming can add qualifiers, you might want to consider an application name length restriction of some value less than 44 bytes (35 bytes for GDG base names).

If the RENAME masks cause the data set names to be longer than the source volume data set names, or if the target ICF catalog name is longer than the source ICF catalog name, the VVDS on the source volume must be large enough to support the expanded target names. IMS Cloning Tool does not add extents to target VVDS data sets.

When cloning IMS subsystems that contain HALDB databases, the low level node for the database data sets can not be renamed or removed due to IMS naming standard requirements.
**Target ICF catalog considerations**

IMS Cloning Tool will catalog target volume data sets to either a populated ICF catalog or an ICF catalog that is initially empty except for the ALIASes for the renamed target data sets. IMS Cloning Tool provides support to clean out any data set entries for a previous cloning execution from a populated catalog.

**Populated ICF catalogs**

A populated catalog contains entries for data sets that were not involved in a cloning process as well as entries for data sets that were involved in previous cloning processes. Consider the following points when using populated catalogs:

- Cloning is usually a repetitive process. Before you rerun a cloning job, run the IMS Cloning Tool BCSCLEAN command to clean out the target catalog entries from the last IMS Cloning Tool cloning execution. Otherwise, the next cloning execution will overwrite the existing target volumes and probably render some of the existing target catalog entries invalid or “orphaned.” Orphaned entries are entries for data sets that no longer exist on the DASD. By using the BCSCLEAN command, you can ensure that the catalog will not contain any orphaned data set entries. The BCSCLEAN command will remove only the catalog entries for data sets that were included in the last cloning process; any other catalog entries for data sets that are not involved with the cloning process will remain.

- If a target catalog contains existing entries and you have not implemented the BCSCLEAN command, you must use the RECATALOG option of the RENAME command to allow the current RENAME job to replace any existing entries from the last cloning execution. If you specify RECATALOG, take extra care, both initially and when maintaining the rename masks, to ensure that a target catalog entry is not replaced as the result of an incorrect target rename mask. Do not specify both the RECATALOG option of RENAME command and the BCSCLEAN command in the same cloning job. For more information about these commands, see Chapter 8, “Reference: IMS Cloning Tool Commands,” on page 185.

- Cataloging target volumes to a populated ICF catalog might extend the IMS Cloning Tool execution time if catalog entries need to be replaced.

**Dedicated ICF catalogs**

A dedicated catalog contains ALIASes and entries for only the data sets that are involved in a cloning process. Consider the following points when using dedicated catalogs:

- Cloning is usually a repetitive process. Before you rerun a cloning job, run the IMS Cloning Tool BCSCLEAN command to clean out the target catalog entries from the last IMS Cloning Tool cloning execution. Otherwise, the next cloning execution will overwrite the existing target volumes and probably render some of the existing target catalog entries invalid or “orphaned.” Orphaned entries are entries for data sets that no longer exist on the DASD. By using the BCSCLEAN command, you can ensure that the catalog will not contain any orphaned data set entries.

- If a target catalog is dedicated to a specific IMS Cloning Tool cloning job, and if you have not implemented the BCSCLEAN command, delete the target ICF catalog and redefine it prior to running the IMS Cloning Tool COPY step. Just place an IDCAMS step before the COPY step. If a redefined catalog is not on the same volume as the deleted volume, be sure to inform all of the catalog address spaces of the new location of the redefined catalog. IBM informational APAR II13354 details the steps that are necessary to ensure all sharing systems can access the catalog.
Do not catalog the IMS Cloning Tool journal data set in the target ICF catalog. Otherwise, the IMS Cloning Tool RENAME command will deadlock with itself over access to the target ICF catalog.

**Note:** The BCSCLEAN command will remove only the catalog entries for data sets that were included in the last cloning process; any other catalog entries for data sets that are not involved with the cloning process will remain. If these are data sets that could be recataloged in a subsequent cloning process they will need to be deleted prior to running the subsequent cloning process to prevent orphaned data sets.

### Location of the source and target ICF catalogs

IMS Cloning Tool requires source ICF catalog information for the source volume data sets that are being cloned at the point-in-time when the replication or split occurs.

This requirement enables the renaming of the target volume data sets. Some information, such as the VSAM sphere and GDG Base information, is only in the ICF catalogs (not on the DASD being cloned); therefore, this information needs to be captured at the point-in-time. Two options are available:

- The source ICF catalogs can reside on the source volumes that are being cloned and can be read from the target volumes.
- The source ICF catalogs can reside on non-source volumes and can be read from the live source ICF catalogs at the time the replication or split occurs.

The target ICF catalogs that are used to catalog the renamed data sets cannot reside on a target volume from the time when volume copy occurs through the completion of the RENAME step. If desired, you can move the target ICF catalogs from the target volume prior to the volume copy, and later move the target ICF catalogs back to the target volume after the RENAME has completed.

### Target data set ICF catalog aliases

You are responsible for creating ICF catalog aliases, if needed for new target data set names.

You must coordinate these aliases with the rename masks. Also, you must determine whether the MLA setting for the image or images from where source volume data sets are accessed is different from the MLA setting for the images from where target volume data sets are to be accessed.

**Note:** To determine the target ICF catalogs that you can create and the aliases that are needed for target-volume data sets, see “FINDUCATS” on page 227. The FINDUCATS command identifies the catalogs that are involved with the source volume data sets and the aliases that are used for the source volume data sets.

### Return code choices

Several IMS Cloning Tool options allow you to set the return codes that are issued if at least one specific circumstance is encountered for a keyword.

In other words, you can choose the seriousness of a situation. The scenarios that are discussed in this document assume that the conditional execution of subsequent steps adheres to the following return code conventions:

- Return code 0 means successful.
• Return code 4 means warning.
• Return code 8 means an error.

The following example JCL and control statements indicate that a “not-renamed” situation should be treated as a critical error:

```
//RENAME EXEC PGM=GCL00010
//GCLIN DD *
RENAME -
NOTRENA ME (DELETE,RC(8))
//IFOK IF (RENAME.RC < 8) THEN
//TARGETOK EXEC PGM=application-program-that-uses-target-volumes
```

**Setup for creating a new IMS subsystem**

IMS Cloning Tool provides functionality to greatly reduce the steps typically required for defining and generating a new IMS subsystem.

IMS Cloning Tool takes an existing IMS subsystem, where the complete installation and system generation process has been completed, and creates a new, or cloned, IMS subsystem, without having to repeat the entire installation and system generation processes.

The following sections describe what IMS Cloning Tool does each time as part of the cloning process and the steps that must be done initially in order to create a new, or cloned, IMS subsystem:

• “Overview: Creation of a new IMS subsystem”
• “Determine applications to be cloned to the new IMS subsystem”
• “Review source IMS subsystem components for new IMS subsystem” on page 54
• “Create IMS.PROCLIB and IMS.JOBS members for the new IMS subsystem” on page 54
• “Operating system preparation for the new IMS subsystem” on page 56

**Overview: Creation of a new IMS subsystem**

Each time IMS Cloning Tool is used to clone an existing IMS subsystem, IMS Cloning Tool:

1. Copies and renames IMS system libraries and data sets as part of the volume clone.

2. Copies and renames IMS database data sets as part of the volume clone.

3. Updates dynamic allocation members (MDA) for the target subsystem, with the new data set names.

4. Updates the records in the RECON data sets for the target subsystem, with the new data set names, volser, and new IMS SSID.

5. Updates the members in the IMS.PROCLIB and IMS.JOBS libraries for the target subsystem, with the new data set names, volser, and new IMS SSID.

**Determine applications to be cloned to the new IMS subsystem**

IMS Cloning Tool does not require that all database data sets defined to an IMS subsystem be cloned to the new, or target, IMS subsystem.

However, all applications defined to the source IMS subsystem will be defined to the new, or target IMS. Therefore, if not all application data sets need to be cloned to the new IMS subsystem, then steps should be done to prevent accidental access to the source IMS application data sets.
1. Determine the applications that you will want to be available on the new IMS subsystem.

2. Verify that all of the IMS system data sets and the desired application(s) data sets are contained on the source volumes being cloned.

3. Even though an application data set may not be copied and renamed by IMS Cloning Tool, there may still be references to these data sets within the new IMS subsystem system data sets. If there are some application data sets from the source IMS subsystem that will not be copied and renamed as part of the cloning process, then it is suggested that a RENAME-MASK for these data sets still be specified in the RENAME step. The RENAME-MASK value for the non-cloned data sets should specify some target data set name that is invalid. IMS Cloning Tool will update any reference to these data sets within the new IMS subsystem system data sets with the invalid target data set name. This will prevent accidental access to the new IMS subsystem to the source IMS subsystem data sets.

**Review source IMS subsystem components for new IMS subsystem**

The same components and configuration options defined for the source IMS subsystem may not be necessary for the new, or target IMS subsystem.

By default, the IMS Cloning Tool cloning will create a new, or target, IMS subsystem with the same components and configuration options as the source IMS subsystem. When creating the IMS.PROCLIB and IMS.JOBS members for the new, or target IMS subsystem as described in "Create IMS.PROCLIB and IMS.JOBS members for the new IMS subsystem", you will be able to customize the new IMS subsystem so that it can be configured differently than the source IMS subsystem.

A review the components and configuration of the source IMS subsystem for the applicability and use for the new, or target, IMS subsystem should be made. Things to review include:

- VTAM® definitions
- APPC definitions
- Security requirements
- Time Controlled Operations (TCO)
- IMS User Exits
- IMS Connect definitions
- FDBR, RSR, or XRF requirements

**Note:** Additional information on planning your IMS subsystem can be found in the IMS Installation Vol 2: System Definition and Tailoring for IMS Version 8 and 9, or IMS System Definition Guide for IMS Version 10.

**Create IMS.PROCLIB and IMS.JOBS members for the new IMS subsystem**

Prior to cloning an IMS subsystem for the first time, IMS.PROCLIB and IMS.JOBS members must be created for the new, or target, IMS subsystem.

IMS Cloning Tool will copy the source IMS.PROCLIB and IMS.JOBS data sets to the target volumes, and rename them. The recommendation is to place the PROCLIB and JOBS members for the target IMS subsystem into the source IMS.PROCLIB or IMS.JOBS. This will ensure that the new PROCLIB and JOBS members are also copied during the cloning process by IMS Cloning Tool and available for your target subsystem.
The new IMS subsystem requires new JCL members to be created in order to be able to execute in the same SYSPLEX as the source IMS subsystem. The PROCLIB and JOBS members you need to create depend on the IMS components that the source IMS uses and the desired components for the target IMS. Additionally, some IMS parameters and configuration options can be defined differently for the new, or target, IMS subsystem to use.

In many cases, the PROCLIB and JOBS members for the new IMS subsystem can be created by simply creating a copy of the corresponding member in the same source data set, and editing it to change any configuration information.

The following PROCLIB members will need to be created for the new IMS subsystem:

- A member to start the IMS control region address space
- A member to start the DBRC address space
- A member used by IMS for submitting jobs to the internal reader
- An IMS control region execution parameter block, DFSPBxxx, where xxx is the RGSUF to be used for the new IMS subsystem. For this member, you must:
  1. Review the options for the target IMS system
  2. Change APPLIDx values, if applicable
  3. If a separate CSL environment is going to be used for the new or target IMS subsystem, change the CSLG value (if used), to a new CSL suffix.
  4. Change the DBRCNRM value to specify a new PROCLIB member
  5. Change the DLINM value to specify a new PROCLIB member
  6. Change PRDR value to specify a new PROCLIB member
  7. If the new or target IMS subsystem will use a separate shared queue environment, change the SHAREDQ value to a new suffix.

Note: Additional information on configuring your IMS subsystem can be found in the IMS Installation Vol 2: System Definition and Tailoring guide.

The following PROCLIB members will need to be created for the new IMS subsystem if the associated optional IMS component is used:

- If IRLM is used and if the new IMS subsystem will use a different IRLM than the source IMS subsystem:
  - A member to start the IRLM address space.
  - Also, the new IRLM subsystem ID will need to be defined to the z/OS subsystem name table (IEFSSN)
- If a DLI SAS is used:
  - A member to start the DLISAS address space
- If common service layer (CSL) address spaces are used and the new IMS subsystem will use a different CSL environment:
  - Members to start the CSL address spaces
  - A CSLOIxxx member to define OM options
  - A CSLRIxxx member to define RM options
  - A CSLSIxxx member to define SCI options
- If shared queues are used and the new IMS subsystem will use a different shared queues address space than the source IMS subsystem:
  - A member to start the CQS address space. A DFSCGxxx member to define shared queue parameters.
If dynamic resource definitions are used:
  – A DFSDFxxx member to define DRD options and RDDS data sets

Create new IMS.JOBS members for the new IMS subsystem. These members include:
  • JOBS to start any Message Processing Regions.
  • JOBS to start any FP Message Processing Regions.
  • SYSAFF member to indicate which z/OS system the new IMS subsystem will run on.

**Operating system preparation for the new IMS subsystem**

Prior to starting an IMS subsystem that was created by the IMS Cloning Tool cloning process, the z/OS system where the new, or target, IMS subsystem will run must be prepared.

These steps include:

1. **APF authorize data sets for the new, or target, IMS subsystem:**
   The newly created IMS subsystem will require some data sets to be APF authorized prior to starting the cloned IMS subsystem. Refer to the IMS Installation Guide for the requirements on what data sets need to be APF authorized. The target data set names on the target volumes should be authorized.

2. **Add IMS PROCs to SYS1.PROCLIB:**
   Copy the following IMS.PROCLIB members created in ‘1.1.4 Create IMS.PROCLIB and IMS.JOBS Members for the New IMS Subsystem’, to a library included in the JES PROCLIB concatenation.
   • The PROCs to start the new IMS control region, DBRC, and DLISAS.
   • The PROC to start IRLM for the new IMS subsystem. This only applies if a separate IRLM will be used by the new IMS subsystem.
   • The PROC to start CSL address spaces for the new IMS subsystem. This only applies if a separate CSL environment will be used by the new IMS subsystem.
   • The PROC to start the CQS address space. This only applies if a separate shared queues address space will be used by the new IMS subsystem.

3. **Install IMS SVCs:**
   If the new IMS subsystem will run on a different z/OS system than the source IMS subsystem, then the SVCs used by the source IMS subsystem must be installed on the z/OS system for the target IMS subsystem. The same SVC numbers must also be used since these are not changed as part of the cloning process.

4. **Add subsystem IDs to SYS1.PARMLIB:**
   The subsystem IDs for the new IMS, and IRLM if used, need to be added to the subsystem name table (IEFSSN).

5. **VTAM:**
   Define any VTAM definitions to be used by the new IMS subsystem.

6. **RACF:**
   Define or allow any RACF definitions and access the new IMS subsystem and users will need to access the target data sets.

7. **APPC:**
   Define any APPC definitions to be used by the new IMS subsystem.
Setting up to copy volumes with FlashCopy or SnapShot

Follow this procedure if you want IMS Cloning Tool to initiate IBM FlashCopy or STK SnapShot via DFSMSdss to create the volume copies of the IMS system.

**Note:** To create volume copies using other tools, see “Setting up to copy volumes with onsite mirroring tools” on page 60.

The IMS Cloning Tool steps for performing this function are placed within a job stream, typically in multiple locations for the steps to run at the appropriate times relative to the cloning activities. These steps are invoked by means of commands to a common program.

If multiple IMS Cloning Tool commands are supplied within the same step, any command that results in a return code equal to or greater than 8 will terminate the step. For instance, if the COPY and RENAME commands are in the same step, and if COPY terminates with a return code of 8 because insufficient target volumes were found, the RENAME command will be bypassed.

The available commands are:
- **FINDUCATS**
  Locates the ICF user catalogs that point to the source-volume data sets.
- **COPY**
  Initiates the copies and captures the ICF source catalog data.
- **RENAME**
  Renames and catalogs the target-volume data sets.
- **BCSCLEAN**
  Deletes any catalog entries from previous IMS Cloning Tool executions.

Several commands that are specific to cloning an IMS subsystem are not discussed in this chapter. For information about these commands, see “Cloning IMS subsystems” on page 67.

**Overview: Steps for Creating Volume Copies with FlashCopy or SnapShot**

Perform these steps to clone volumes with IBM FlashCopy or STK SnapShot. In this scenario, IMS Cloning Tool can transparently initiate FlashCopy or SnapShot to create the volume clones.

**Overview**

The following table lists the steps that are necessary to use IMS Cloning Tool to create volume copies with FlashCopy or SnapShot. Each step is explained in more detail in this chapter.

<table>
<thead>
<tr>
<th>Cloning Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Step 1: FINDUCATS step (optional)” on page 58</td>
</tr>
<tr>
<td>Optional step that you perform once or occasionally to find the ICF user catalogs that point to the source-volume data sets.</td>
</tr>
</tbody>
</table>
Table 6. IMS Cloning Tool Creating volume copies with FlashCopy or SnapShot
Overview (continued)

<table>
<thead>
<tr>
<th>Cloning Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>“Step 2: Quiesce source volume activity”</strong></td>
</tr>
<tr>
<td>Quiesce source volume activity against the source volumes. If you plan to clone the IMS subsystem, see &quot;Cloning IMS subsystems&quot; on page 67 for instructions on stopping IMS. These instructions are a prerequisite to Step 3.</td>
</tr>
<tr>
<td><strong>“Step 3: Copy step”</strong></td>
</tr>
<tr>
<td>This step initiates FlashCopy or SnapShot to create a clone of the source volumes. It also backs up the ICF user catalogs that point to the source volume data sets as identified by the FINDUCATS job.</td>
</tr>
<tr>
<td><strong>“Step 4: Resume access to the source volumes” on page 59.</strong></td>
</tr>
<tr>
<td><strong>“Step 5: RENAME step” on page 59</strong></td>
</tr>
<tr>
<td>This step renames and catalogs the target-volume data sets.</td>
</tr>
<tr>
<td><strong>“Step 6: IMS cloning” on page 59</strong></td>
</tr>
<tr>
<td>Update the cloned IMS internals. See the offline or online cloning topics in &quot;Cloning IMS subsystems&quot; on page 67 for additional instructions. The instructions for conditioning the clone are a prerequisite to Step 7.</td>
</tr>
<tr>
<td><strong>“Step 7: Access the target volumes” on page 59</strong></td>
</tr>
<tr>
<td><strong>“Step 8: BCSCLEAN step (optional but recommended)” on page 59</strong></td>
</tr>
<tr>
<td>Optional step that runs after target volume usage is terminated and before the next COPY. This step is recommended.</td>
</tr>
</tbody>
</table>

**Step 1: FINDUCATS step (optional)**
This step is part of the larger task of creating volume copies with FlashCopy or SnapShot. The FINDUCATS command identifies the ICF user catalogs that contain entries for the data sets on the source volumes to be copied.

Usually, you run this command once, prior to the initial copy. Possibly, you might need to run this command again for a subsequent copy to verify that the ICF user catalogs that are specified in the COPY step have not changed.

FINDUCATS does not negate the need to specify pairs of source and target ICF catalogs in the COPY step.

**Step 2: Quiesce source volume activity**
This step is part of the larger task of creating volume copies with FlashCopy or SnapShot. Access to data sets on the source volumes to be copied must cease prior to (and through) the COPY step. Access to the source volumes can be controlled through a hardware consistency function if available, the IMSSETLOG SUSPEND WTOR command, or by stopping the source IMS.

See "Cloning IMS subsystems" on page 67 for specific IMS cloning instructions. Quiescing source volume activity is a prerequisite to Step 3.

**Step 3: Copy step**
This step is part of the larger task of creating volume copies with FlashCopy or SnapShot.
The COPY step initiates volume copies and concurrently backs up the source ICF catalog data that is relevant to the data sets on the source volumes being copied. The COPY step completes when copy initiations are complete and all ICF catalog data has been backed up.

**Step 4: Resume access to the source volumes**

This step is part of the larger task of creating volume copies with FlashCopy or SnapShot.

You can resume access to the source volumes, including access to modify the volumes, after the COPY step completes successfully.

**Step 5: RENAME step**

This step is part of the larger task of creating volume copies with FlashCopy or SnapShot. The RENAME step renames and catalogs the target-volume data sets.

If you specify the SAFE option, you will be able to rerun the RENAME step if problems occur. For example, you might need to correct mistakes in the renaming masks.

**Step 6: IMS cloning**

This step is part of the larger task of creating volume copies with FlashCopy or SnapShot. You can clone an IMS subsystem offline (while IMS is stopped) or online (while IMS is running) to create a second subsystem that you can then use for accessing the renamed data sets.

To do so, you must complete the steps for conditioning the clone in one of the offline or online cloning procedures in “Cloning IMS subsystems” on page 67 prior to Step 7. See “IMS Offline Cloning Procedures” on page 67 or “IMS Online Cloning Procedures” on page 74.

**Step 7: Access the target volumes**

This step is part of the larger task of creating volume copies with FlashCopy or SnapShot.

Access to the target volumes can safely start after the IMS offline cloning procedure completes.

**Step 8: BCSCLEAN step (optional but recommended)**

This step is part of the larger task of creating volume copies with FlashCopy or SnapShot. If you intend to rerun the cloning job on a recurring basis, run the BCSCLEAN command prior to starting the next cloning process in order to delete the target catalog entries for the data sets that were created during the last IMS Cloning Tool cloning cycle.

Because this will delete the target data set names from the ICF catalog, this step should be done after the target IMS subsystem is no longer needed or before the target IMS subsystem is cloned again. See section “Target ICF catalog considerations” on page 51 for more information.

**Note:** Do not specify both the BCSCLEAN command and the RECATALOG option of the RENAME command in the same cloning job.
Setting up to copy volumes with onsite mirroring tools

Follow this procedure if you want to create volume copies by using a mirroring tool or another P.I.T. copy tool that you have on site.

A mirroring tool “establishes” a relationship between the source and target volumes, waits for the data to be copied to the target volume, and then “splits” the mirror relationship at the appropriate point in time. Mirroring tools include IBM PPRC and EMC TimeFinder/Mirror. The other copy tools also create a P.I.T. copy. These tools include Softek Replicator and Innovation Data Processing FDRPAS.

Note: If you want IMS Cloning Tool to invoke IBM FlashCopy or STK SnapShot via DFSMSdss to create volume copies, see "Setting up to copy volumes with FlashCopy or SnapShot" on page 57.

The steps for performing this function are placed within a job stream, typically in multiple locations for the function steps to run at the appropriate times relative to the application’s activities. These steps are invoked by means of commands to a common program.

If multiple IMS Cloning Tool commands are supplied within the same step, any command that results in a return code equal to or greater than 8 will terminate the step. For instance, if the COPY and RENAME commands are in the same step, and if COPY terminates with the return code of 8 because of insufficient target volumes, the RENAME command will be bypassed.

The available commands are:

FINDUCATS
Locates the ICF user catalogs that point to the source-volume data sets.

COPY
Backs up source ICF catalog data that points to data sets on the source volumes and optionally clips and varies target volumes online.

RENAME
Renames and catalogs the target-volume data sets.

BCSCLEAN
Deletes any catalog entries from previous IMS Cloning Tool executions.

Several commands that are specific to cloning IMS subsystems are not discussed in this chapter. For information about these commands, see "Cloning IMS subsystems" on page 67.

Overview: Steps for creating copies with mirroring tools

Perform these steps to clone volumes by using mirroring tools other than EMC TimeFinder/Mirror or another P.I.T. tool such as Replicator or FDRPAS. In this scenario, you create the steps that are needed to establish and split mirrors with your tool.

Overview

The following table lists the steps that are necessary to use IMS Cloning Tool to create volumes with mirroring tools. Each step is explained in more detail in this chapter.
Table 7. IMS Cloning Tool Creating volume copies with Mirroring Tools

<table>
<thead>
<tr>
<th>Maintenance Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Step 1: FINDUCATS step (optional)”</td>
</tr>
<tr>
<td>Optional step that you perform once or occasionally to find the ICF user catalogs that point to the source-volume data sets.</td>
</tr>
<tr>
<td>“Step 2: Establish onsite mirrors”</td>
</tr>
<tr>
<td>User-supplied step to establish onsite mirrors or set up another type of P.I.T. copy.</td>
</tr>
<tr>
<td>“Step 3: Quiesce source volume activity”</td>
</tr>
<tr>
<td>If you plan to clone the IMS subsystem, see “Cloning IMS subsystems” on page 67 for instructions on stopping IMS. These instructions are a prerequisite to Step 4.</td>
</tr>
<tr>
<td>“Step 4: Split or break mirrors” on page 62 if using an onsite mirroring tool.</td>
</tr>
<tr>
<td>“Step 5: COPY step” on page 62</td>
</tr>
<tr>
<td>This step backs up the source ICF catalogs that point to the source-volume data sets. The backup occurs when the mirroring tool or a P.I.T. copy tool performs a split.</td>
</tr>
<tr>
<td>“Step 6: Resume access to the source volumes” on page 62</td>
</tr>
<tr>
<td>“Step 7: RENAME step” on page 62</td>
</tr>
<tr>
<td>This step renames and catalogs the target-volume data sets.</td>
</tr>
<tr>
<td>“Step 8: IMS cloning” on page 62 to update the IMS internals on the target volume. See the offline or online cloning topics in “Cloning IMS subsystems” on page 67 for additional instructions. The instructions for conditioning the clone are a prerequisite to Step 9.</td>
</tr>
<tr>
<td>“Step 9: Access target volumes” on page 63</td>
</tr>
<tr>
<td>“Step 10: BCSCLEAN step (optional but recommended)” on page 63</td>
</tr>
<tr>
<td>Optional step that runs after target volume usage is terminated and before the next COPY. This step is recommended.</td>
</tr>
</tbody>
</table>

Step 1: FINDUCATS step (optional)
This step is part of the larger task of creating volume copies with onsite mirroring tools. The FINDUCATS command identifies the ICF user catalogs that contain entries for the data sets on the source volumes to be copied.

Usually, you run this command once, prior to the initial copy. Possibly, you might need to run this command again for a subsequent copy to verify that the ICF user catalogs that are specified in the COPY step have not changed.

FINDUCATS does not negate the need to specify pairs of source and target ICF catalogs in the COPY step.

Step 2: Establish onsite mirrors
This step is part of the larger task of creating volume copies with onsite mirroring tools.

This step must be supplied by the user and placed in the application stream, sufficiently ahead of the desired “split time,” such that the target volumes will be synchronized with their source volume counterparts.

Step 3: Quiesce source volume activity
This step is part of the larger task of creating volume copies with onsite mirroring tools. Access to data sets on the source volumes to be copied must cease prior to the specified time.
(and through) the COPY step. Access to the source volumes can be controlled through a hardware consistency function if available, the IMSSETLOG SUSPEND WTOR command, or by stopping the source IMS.

See “Cloning IMS subsystems” on page 67 for instructions on stopping IMS. Quiescing source volume activity is a prerequisite to Step 4.

**Step 4: Split or break mirrors**
This step is part of the larger task of creating volume copies with onsite mirroring tools. This step must be supplied by the user to split the mirrors that were created in Step 2.

If you use Hitachi ShadowImage and the ICKDSF PPRCOPY commands, ensure that the mirror pairs are suspended with a steady split request before deleting the pairs. The “suspend with steady split” request causes any pending updates to the target volume to be externalized.

**Step 5: COPY step**
This step is part of the larger task of creating volume copies with onsite mirroring tools. In the scenarios described in this chapter, the COPY step is run with the 'DATA-MOVER(PGM(NONE))' parameter. The 'DATA-MOVER(PGM(NONE))' parameter indicates that target volumes have already been created by the user.

In this case, the COPY command only backs up the source ICF catalog information that is needed to rename and catalog the target-volume data sets. Optionally, the COPY command can also re-label the target volumes and vary them online for RENAME processing. The COPY command must be issued immediately after the SPLIT (not at the same time as the split).

**Step 6: Resume access to the source volumes**
This step is part of the larger task of creating volume copies with onsite mirroring tools.

You can resume access to the source volumes, including access to modify the volumes, after the COPY step completes successfully.

**Step 7: RENAME step**
This step is part of the larger task of creating volume copies with onsite mirroring tools. The RENAME step renames and catalogs the target-volume data sets.

If you specify the SAFE option, you will be able to rerun the RENAME step if problems occur. For example, you might need to correct mistakes in the renaming masks.

**Step 8: IMS cloning**
This step is part of the larger task of creating volume copies with onsite mirroring tools. You can clone an IMS subsystem offline (while IMS is stopped) or online (while IMS is running) to create a second subsystem that you can then use for accessing the renamed data sets.

To do so, you must complete the steps for conditioning the clone in one of the offline or online cloning procedures in “Cloning IMS subsystems” on page 67 prior to Step 9.

See “IMS Offline Cloning Procedures” on page 67 or “IMS Online Cloning Procedures” on page 74.
**Step 9: Access target volumes**
This step is part of the larger task of creating volume copies with onsite mirroring tools.

Access to the target volumes can safely start after the IMS offline cloning procedure completes.

**Step 10: BCSCLEAN step (optional but recommended)**
This step is part of the larger task of creating volume copies with onsite mirroring tools. If you intend to rerun the cloning job on a recurring basis, run the BCSCLEAN command prior to starting the next cloning process in order to delete the target catalog entries for the data sets that were created during the last IMS Cloning Tool cloning cycle.

Because this will delete the target data set names from the ICF catalog, this step should be done after the target IMS subsystem is no longer needed or before the target IMS subsystem is cloned again. See "Target ICF catalog considerations" on page 51 for more information.

**Note:** Do not specify both the BCSCLEAN command and the RECATALOG option of the RENAME command in the same cloning job.

---

**Overview: Steps for cloning volumes with EMC TimeFinder/Mirror**
Perform these steps if you want to use EMC TimeFinder/Mirror to ESTABLISH, SPLIT, and RE-ESTABLISH BCV mirrors to create the volume copies. You still use IMS Cloning Tool to copy the ICF catalogs, rename the target data sets, and perform other “conditioning” to make the IMS clones usable. For detailed information about EMC TimeFinder/Mirror, see the EMC TimeFinder documentation.

**Overview**
The following table lists the steps that are necessary to use IMS Cloning Tool to create volumes with mirroring tools. Each step is explained in more detail in this chapter.

<table>
<thead>
<tr>
<th>Cloning Steps</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Step 1: FINDUCATS step (optional)” on page 64</td>
<td></td>
</tr>
<tr>
<td>Optional step that you perform once or occasionally to find the ICF user catalogs that point to the source-volume data sets.</td>
<td></td>
</tr>
<tr>
<td>“Step 2: ESTABLISH step” on page 64</td>
<td></td>
</tr>
<tr>
<td>This EMC TimeFinder/Mirror step establishes the BCV mirrors.</td>
<td></td>
</tr>
<tr>
<td><strong>RE-ESTABLISH</strong> step.</td>
<td></td>
</tr>
<tr>
<td>If you previously established and split the mirrors, you can perform a <strong>RE-ESTABLISH</strong> to resynchronize the mirror pairs.</td>
<td></td>
</tr>
<tr>
<td>“Step 3: Quiesce source volume activity” on page 65</td>
<td></td>
</tr>
<tr>
<td>Stop source IMS subsystem. See &quot;Cloning IMS subsystems&quot; on page 67 for additional instructions on stopping your IMS subsystem. These instructions are a prerequisite to Step 4.</td>
<td></td>
</tr>
</tbody>
</table>
Table 8. IMS Cloning Tool Cloning volumes with EMC TimeFinder/Mirror (continued)

<table>
<thead>
<tr>
<th>Cloning Steps</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>“Step 4: SPLIT step” on page 65</strong></td>
<td>This EMC TimeFinder/Mirror step splits the BCV mirrors.</td>
</tr>
<tr>
<td><strong>“Step 5: COPY step” on page 65</strong></td>
<td>This step backs up the source ICF catalogs that point to the source-volume data sets. The backup occurs when the mirroring tool or a P.I.T. copy tool performs a split.</td>
</tr>
<tr>
<td><strong>“Step 6: Resume access to the source volumes” on page 66.</strong></td>
<td>Restart source IMS subsystem. See “Cloning IMS subsystems” on page 67 for additional information on restarting your IMS subsystem.</td>
</tr>
<tr>
<td><strong>“Step 7: RENAME step” on page 66</strong></td>
<td>This step renames and catalogs the target-volume data sets.</td>
</tr>
<tr>
<td><strong>“Step 8: IMS cloning” on page 66</strong></td>
<td>To update the IMS internals on the target volume. See the offline or online cloning topics in “Cloning IMS subsystems” on page 67 for additional instructions. The instructions for conditioning the clone are a prerequisite to Step 9.</td>
</tr>
<tr>
<td><strong>“Step 9: Access target volumes” on page 66</strong></td>
<td>Optional step that runs after target volume usage is terminated and before the next COPY. This step is recommended.</td>
</tr>
<tr>
<td><strong>“Step 10: BCSCLEAN step (optional but recommended)” on page 67</strong></td>
<td>Optional step that runs after target volume usage is terminated and before the next COPY. This step is recommended.</td>
</tr>
</tbody>
</table>

**Step 1: FINDUCATS step (optional)**
This step is part of the larger task of creating volume copies with EMC TimeFinder/Mirror. The FINDUCATS command identifies the ICF user catalogs that contain entries for the data sets on the source volumes to be copied.

Usually, you run this command once, prior to the initial copy. Possibly, you might need to run this command again for a subsequent copy to verify that the ICF user catalogs that are specified in the COPY step have not changed.

FINDUCATS does not negate the need to specify pairs of source and target ICF catalogs in the COPY step.

**Step 2: ESTABLISH step**
This step is part of the larger task of creating volume copies with EMC TimeFinder/Mirror. You must create an EMC TimeFinder/Mirror ESTABLISH step to initially establish the mirror relationship between the source and target volumes. Place this step in the application stream, sufficiently ahead of the desired “split time” such that the target volumes have time to become synchronized with their source volume counterparts before the split occurs.

If you previously established and split the mirrors, create a RE-ESTABLISH step instead of a ESTABLISH step for the subsequent synchronization.

If you want TimeFinder/Mirror to wait until the BCVs are synchronized before the job completes include the WAIT parameter in an ESTABLISH step (or RE-ESTABLISH step). For more information, see the EMC TimeFinder documentation.

The following is a sample of an EMC TimeFinder/Mirror ESTABLISH step.
The following is a sample of an EMC TimeFinder/Mirror RE-ESTABLISH step.

```plaintext
//STEP1 EXEC PGM=EMCTF
//STEPLIB DD DISP=SHR,DSN=hlq?.EMC.LINKLIB
//SYSUDUMP DD SYSOUT=*  
//SYSOUT DD SYSOUT=*  
//SYSIN DD  
GLOBAL MAXRC=4,WAIT  
ESTABLISH 01,4120-4121,4100-4101  
ESTABLISH 01,4130,4110  
/*
```

Step 3: Quiesce source volume activity

This step is part of the larger task of creating volume copies with EMC TimeFinder/Mirror. Access to data sets on the source volumes to be copied must cease prior to (and through) the COPY step. Access to the source volumes can be controlled through a hardware consistency function if available, the IMSSETLOG SUSPEND WTOR command, or by stopping the source IMS.

See "Cloning IMS subsystems" on page 67 for instructions on stopping IMS. Quiescing source volume activity is a prerequisite to Step 4.

Step 4: SPLIT step

This step is part of the larger task of creating volume copies with EMC TimeFinder/Mirror. You must create an EMC TimeFinder/Mirror step to split the mirror relationships to create a point-in-time copy of the volumes. After the mirror pair is split, application processing can start against the target volumes.

You can include the WAIT parameter in the SPLIT step to delay the split until background processing completes. This wait period is required if a TimeFinder RESTORE operation will be done after the split. However, the NOWAIT parameter is sufficient if you plan to only re-label volumes and rename data sets.

The following is a sample EMC TimeFinder/Consistency Groups consistent SPLIT.

```plaintext
//STEP2 EXEC PGM=EMCTF  
//STEPLIB DD DISP=SHR,DSN=SYMMI.EMC.TF510.LINKLIB  
//SYSUDUMP DD SYSOUT=*  
//SYSOUT DD SYSOUT=*  
//SYSIN DD  
GLOBAL MAXRC=4,NOWAIT  
SPLIT 01,4120-4121,CONS(LOCAL(BYP))  
SPLIT 01,4130,CONS(LOCAL(BYP))  
/*
```

Step 5: COPY step

This step is part of the larger task of creating volume copies with EMC TimeFinder/Mirror. In this scenario, the COPY step is run with the 'DATA-MOVER(PGM(NONE))' parameter. The 'DATA-MOVER(PGM(NONE))' parameter indicates that target volumes have already been created by the user.
In this case, the COPY command only backs up the source ICF catalog information that is needed to rename and catalog the target-volume data sets. Optionally, the COPY command can also re-label the target volumes and vary them online for RENAME processing. The COPY command must be issued immediately after the SPLIT.

The following is a sample COPY command for EMC TimeFinder/Mirror BCVs.

```
//STEP3 EXEC PGM=GCL00010,REGION=8M
//STEPLIB DD DSN=hlq?.SGCLLOAD,DISP=SHR
//GCLINI DD DSN=hlq?.SGCLPARM(GCLINI),DISP=SHR
//GCLPRINT DD SYSOUT=*  
//SYSUDUMP DD SYSOUT=*  
//JOURNAL DD DSN=PRD.IMSA.JRNL,RECORG=KS,KEYLEN=64,KEYOFF=0,DISP=(,CATLG),  
// UNIT=SYSALLDA,LRECL=600,SPACE=(CYL,(10,10))  
//GCLIN DD *  
COPY DATA-MOVER(PGM(NONE)) -  
VOLPAIRSDEVN(IMSA01 IMSB01 4120 -  
IMSA02 IMSB02 4121 -  
IMSA03 IMSB03 4130) -  
USERCATLOGS(SRC.USERCAT1 TGT.USERCAT1) -  
CATWORK-DSN(PRD.IMSA.WRK.*) -  
JOURNAL-DDN(JOURNAL) -  
/*
```

Step 6: Resume access to the source volumes
This step is part of the larger task of creating volume copies with EMC TimeFinder/Mirror.

You can resume access to the source volumes, including access to modify the volumes, after the COPY step completes successfully.

Step 7: RENAME step
This step is part of the larger task of creating volume copies with EMC TimeFinder/Mirror. The RENAME step renames and catalogs the target-volume data sets.

If you specify the SAFE option, you will be able to rerun the RENAME step if problems occur. For example, you might need to correct mistakes in the renaming masks.

Step 8: IMS cloning
This step is part of the larger task of creating volume copies with EMC TimeFinder/Mirror. You can clone an IMS subsystem offline (while IMS is stopped) or online (while IMS is running) to create a second subsystem that you can then use for accessing the renamed data sets.

To do so, complete the steps for conditioning the clone in one of the offline or online cloning procedures in “Cloning IMS subsystems” on page 67 prior to Step 9.

See “IMS Offline Cloning Procedures” on page 67 or “IMS Online Cloning Procedures” on page 74.

Step 9: Access target volumes
This step is part of the larger task of creating volume copies with EMC TimeFinder/Mirror.

Access to the target volumes can safely start after the IMS offline cloning procedure completes.
Step 10: BCSCLEAN step (optional but recommended)
This step is part of the larger task of creating volume copies with EMC TimeFinder/Mirror. If you intend to rerun the cloning job on a recurring basis, run the BCSCLEAN command prior to starting the next cloning process in order to delete the target catalog entries for the data sets that were created during the last IMS Cloning Tool cloning cycle.

Because this will delete the target data set names from the ICF catalog, this step should be done after the target IMS subsystem is no longer needed or before the target IMS subsystem is cloned again. See “Target ICF catalog considerations” on page 51 for more information.

Note: Do not specify both the BCSCLEAN command and the RECATALOG option of the RENAME command in the same cloning job.

Cloning IMS subsystems
This section provides procedures for cloning both online and offline IMS subsystems under alternative scenarios.

- “IMS Offline Cloning Procedures”
- “IMS Online Cloning Procedures” on page 74

IMS Offline Cloning Procedures
This section provides procedures for cloning IMS subsystems under alternative scenarios when IMS is shut down.

To create a clone of an IMS subsystem, stop the source IMS subsystem for a period of time in order to achieve your point-in-time copy. Stopping the source IMS subsystem ensures that all buffers have been flushed, all data has been committed to disk, and that no transactions are in flight. In addition, ensure that:

- No utilities are executing against any of the source databases.
- No batch jobs are executing against any of the source databases.
- No IMS control block updates, or System generation processes are active during the cloning process.
- You have completed all prerequisites, including the IMS subsystem setup requirements in section “Setup for creating a new IMS subsystem” on page 53.

Choose the appropriate procedure for your situation. The following offline cloning procedures are covered:

- “Cloning an offline IMS subsystem to allow another IMS subsystem to access the renamed data sets on the target volumes”
- “Cloning an offline IMS data-sharing subsystem and removing members” on page 70
- “Cloning an offline IMS data-sharing subsystem to a non-data-sharing target” on page 72

Cloning an offline IMS subsystem to allow another IMS subsystem to access the renamed data sets on the target volumes
Use the following procedure to clone an offline IMS subsystem (when the source IMS subsystem has been stopped to achieve your point-in-time copy) if you intend for a second or target IMS subsystem to access the renamed data sets.
About this task

The following table summarizes each step in the cloning an IMS subsystem to allow another IMS subsystem to access the renamed data sets on the target volumes process:

<table>
<thead>
<tr>
<th>Steps Overview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1: Stop the source and target IMS subsystems</td>
</tr>
<tr>
<td>Run the IMSSTOP command, SGCLJCL library member (GCLISTOP).</td>
</tr>
<tr>
<td>Step 2: COPY Step</td>
</tr>
<tr>
<td>Run the COPY command, SGCLJCL library member (GCLCOPY).</td>
</tr>
<tr>
<td>Step 3: Start source IMS subsystem</td>
</tr>
<tr>
<td>Run the IMSSTART command, SGCLJCL library member (GCLISTRT).</td>
</tr>
<tr>
<td>Step 4: RENAME step</td>
</tr>
<tr>
<td>Run the RENAME command, SGCLJCL library member (GCLREN).</td>
</tr>
<tr>
<td>Step 5: IMSUPDATE Step</td>
</tr>
<tr>
<td>Run the IMSUPDATE command, SGCLJCL library member (GCLIUPDT).</td>
</tr>
<tr>
<td>Step 6: Additional IMSUPDATE steps (datasharing only)</td>
</tr>
<tr>
<td>If IMS data sharing or shared queues is used, run the IMSUPDATE command again, SGCLJCL library member (GCLIUPD2).</td>
</tr>
<tr>
<td>Step 7: Start target IMS subsystem</td>
</tr>
<tr>
<td>Run the IMSSTART command, SGCLJCL library member (GCLISTRT).</td>
</tr>
<tr>
<td>Step 8: BCSCLEAN step (optional but recommended)</td>
</tr>
<tr>
<td>BCSCLEAN step, SGCLJCL library member (GCLBCLN). Optional step that runs after target volume usage is terminated and before the next COPY. This step is recommended.</td>
</tr>
</tbody>
</table>

Procedure

1. Run the IMSSTOP command using SGCLJCL library member (GCLISTOP) to stop the source IMS subsystem. This ensures that buffers have been flushed, all data has been committed to disk, and no transactions are in flight.

2. Run the COPY command.

   Copy the source volumes to the target volumes and back up the source ICF catalogs that point to the data sets on the source volumes being copied.

   If you are using IBM FlashCopy or SnapShot, run the COPY command to copy the source volumes to the target volumes and back up the source ICF catalogs that point to the data sets on the source volumes being copied. See “COPY” on page 188 for more information on the COPY command.

   If you are using a ‘Split of a Continuous Mirror’ tool, this step assumes the mirror relationship has been started in advance of when you want to ‘split or suspend’ the mirror relationship. Issue the ‘split or suspend’, then run the COPY command to back up the source ICF catalogs that point to the data sets on the source volumes being copied, and optionally, re-label and vary online the target volumes.
3. Run the IMSSTART command using SGCLJCL library member (GCLISTRT) to start the source IMS subsystem. At this point, the data has been cloned and access to the source volumes can proceed as normal.

4. Run the RENAME command to rename and catalog the target volume data sets.

5. Run the IMSUPDATE command using SGCLJCL library member (GCLIUPDT). The IMSUPDATE command makes the necessary IMS changes to reflect the renamed data sets. IMSUPDATE updates the RECON data sets, the IMS PROCLIB and IMS.JOBS data sets, and any MDA members.
   - RECON data set updates – any data set names, IMS subsystem IDs or VOLSERs in the RECON header, database data set, online log, and backout records. It will optionally update the image copy, change accum, SLDS, and RLDS records if they were on volume that were cloned.
   - MDA members – any MDA members for databases or system data sets, such as the RECON, OLDS, or WADS, will be updated to reflect the new data set names.
   - IMS PROCLIB and JCL library members – Any reference to the source IMSID, source volsers, or source data sets will be updates with the new values in the JCL members within these libraries.

   **Note:** The GCLIUPDT sample member contains a step to close an open online log. If the IMS system being cloned was shutdown normally, an online log may not be open and the step to close the log would not be necessary. In this case, the step can be removed from the JCL or it will result with RC=12.

6. If IMS data sharing or shared queues is used in your environment, and it is also desired for the target IMS subsystem, run the IMSUPDATE command again, this time using SGCLJCL library member (GCLIUPD2) for each additional data-sharing or shared queues member. This step is in addition to the IMSUPDATE command SGCLJCL library member (GCLIUPDT) previously executed. The IMSUPDATE command using SGCLJCL library member (GCLIUPD2) will make additional changes for IMS SSID references in the RECON and SGCLJCL library members listed in the previous step.

   **Note:** The GCLIUPD2 sample member contains a step to close an open online log. If the IMS system being cloned was shutdown normally, an online log may not be open and the step to close the log would not be necessary. In this case, the step can be removed from the JCL or it will result with RC=12.

7. Run the IMSSTART command using SGCLJCL library member (GCLISTRT) to start the target IMS subsystem whenever you are ready to resume application access to the target volumes.

8. Optional: If you intend to rerun the cloning job on a recurring basis, run the BCSCLEAN command prior to starting the next cloning process in order to delete the target catalog entries for the data sets that were created during the last IMS Cloning Tool cloning cycle. Because this will delete the target data set names from the ICF catalog, this step should be done after the target IMS subsystem is no longer needed or before the target IMS subsystem is cloned again. See section [“Target data set ICF catalog aliases” on page 52](#) for more information.

   **Note:** Do not specify both the BCSCLEAN command and the RECATALOG option of the RENAME command in the same cloning job.
Cloning an offline IMS data-sharing subsystem and removing members

IMS offline cloning infers that the source IMS subsystem has been stopped to achieve your point-in-time copy. It ensures that all buffers have been flushed, all data has been committed to disk, and that no transactions are in flight.

About this task

Prerequisites:

- The new target IMS data-sharing group members will have no log history for the members that are removed. Therefore, if further recovery is desired, image copies must be taken.
- Only the IMS members being retained need to be cloned but all members must be stopped to create a point-in-time copy.
- The RENAME-MASKS keyword in the RENAME command needs to include entries that will cause the renaming of all the member’s system and application database data sets.

The following table summarizes each step in the cloning an IMS data-sharing subsystem and removing members process:

<table>
<thead>
<tr>
<th>Step</th>
<th>Overview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>Stop the source and target IMS subsystems. Run the IMSSTOP command, SGCLJCL library member (GCLISTOP).</td>
</tr>
<tr>
<td>Step 2</td>
<td>Run the COPY command, SGCLJCL library member (GCLCOPY).</td>
</tr>
<tr>
<td>Step 3</td>
<td>Start source IMS subsystems. Run the IMSSTART command, SGCLJCL library member (GCLISTRT).</td>
</tr>
<tr>
<td>Step 4</td>
<td>Rename step: run the RENAME command, SGCLJCL library member (GCLREN).</td>
</tr>
<tr>
<td>Step 5</td>
<td>IMSUPDATE step: run the IMSUPDATE command, SGCLJCL library member (GCLIUPDT).</td>
</tr>
<tr>
<td>Step 6</td>
<td>IMSUPDATE step for additional subsystems: Run the IMSUPDATE command again, SGCLJCL library member (GCLIUPD2).</td>
</tr>
<tr>
<td>Step 7</td>
<td>IMSUPDATE step to remove members: run the IMSUPDATE command again, SGCLJCL library member (GCLIUPD3).</td>
</tr>
<tr>
<td>Step 8</td>
<td>Start target IMS subsystems: run the IMSSTART command, SGCLJCL library member (GCLISTRT).</td>
</tr>
<tr>
<td>Step 9</td>
<td>BCSCLEAN step (optional but recommended), SGCLJCL library member (GCLBCLEAN): Optional step that runs after target volume usage is terminated and before the next COPY. This step is recommended.</td>
</tr>
</tbody>
</table>

Procedure

1. Run the IMSSTOP command using SGCLJCL library member (GCLISTOP) to stop the source IMS subsystem and the target subsystems if they already exists and are active. The IMSSTOP command must be run for each member in a data-sharing or shared queues environment. This ensures that all buffers have been flushed, all data has been committed to disk, and that no transactions are in flight.
2. Run the COPY command.
Copy the source volumes to the target volumes and back up the source ICF catalogs that point to the data sets on the source volumes being copied.

If you are using IBM FlashCopy or SnapShot, run the COPY command to copy the source volumes to the target volumes and back up the source ICF catalogs that point to the data sets on the source volumes being copied. See "COPY" on page 188 for more information on the COPY command.

If you are using a 'Split of a Continuous Mirror' tool, this step assumes the mirror relationship has been started in advance of when you want to 'split or suspend' the mirror relationship. Issue the 'split or suspend', then run the COPY command to back up the source ICF catalogs that point to the data sets on the source volumes being copied, and optionally, re-label and vary online the target volumes.

3. Run the IMSSTART command on the source system using SGCLJCL library member (GCLISTRT). All members in the source data-sharing or shared queues environment can be restarted. At this point, the data has been cloned and access to the source volumes can proceed as normal.

4. Run the RENAME command to rename and catalog the target volume data sets. The RENAME-MASKS keyword needs to include entries that will cause the renaming of all the member system and application database data sets.

5. Run IMSUPDATE command using SGCLJCL library member (GCLIUPDT). The source IMS is data sharing so the IMS-GROUP keyword must be used.

IMSUPDATE updates the RECON data sets, the IMS PROCLIB and IMSJOBS data sets, and any MDA members.

- RECON data set updates – any data set names, IMS subsystem IDs or VOLSERs in the RECON header, database data set, online log, and backout records. It will optionally update the image copy, change accum, SLDS, and RLDS records if they were on a volume that was cloned.
- MDA members – any MDA members for databases or system data sets, such as the RECON, OLDS, or WADS, will be updated to reflect the new data set names.
- IMS PROCLIB and SGCLJCL library members – Any reference to the source IMSID, source volser, or source data sets will be updates with the new values in the SGCLJCL library members within these libraries.

**Note:** The GCLIUPDT sample member contains a step to close an open online log. If the IMS system being cloned was shutdown normally, an online log may not be open and the step to close the log would not be necessary. In this case, the step can be removed from the JCL or it will result with RC=12.

6. Run the IMSUPDATE command again, this time using SGCLJCL library member (GCLIUPD2) for each additional data-sharing or shared queues member to be updated in the target environment. This step is in addition to the IMSUPDATE command SGCLJCL library member (GCLIUPDT) previously executed. The IMSUPDATE command using SGCLJCL library member (GCLIUPD2) will make additional changes for IMS SSID references in the RECON and SGCLJCL library members listed in the previous step. The source IMS is data sharing so the IMS-GROUP keyword must be used.

**Note:** The GCLIUPD2 sample member contains a step to close an open online log. If the IMS system being cloned was shutdown normally, an online log may not be open and the step to close the log would not be necessary. In this case, the step can be removed from the JCL or it will result with RC=12.
7. Run the IMSUPDATE command again, this time using JCL member (GCLIUPD3) for each additional data-sharing or shared queues member to be removed from the target environment. This step is in addition to the IMSUPDATE command JCL member (GCLIUPD3) previously executed. The IMSUPDATE command using JCL member (GCLIUPD3) will remove information related to the IMS SSID from the RECON. The REMOVE-MEMBER keyword must also be specified to remove any SLDS or RLDS log data sets, PRILOG or OLDS information from the RECON data sets. The source IMS was data sharing so the IMS-GROUP keyword must be used.

8. Run the IMSSTART command using SGCLJCL library member (GCLISTRT) to start the primary target IMS subsystem whenever you are ready to resume application access to the target volumes. An IMSSTART command can be run for each IMS subsystem that has been cloned.

9. Optional: If you intend to rerun the cloning job on a recurring basis, run the BCSCLEAN command prior to starting the next cloning process in order to delete the target catalog entries for the data sets that were created during the last IMS Cloning Tool cloning cycle. Because this will delete the target data set names from the ICF catalog, this step should be done after the target IMS subsystem is no longer needed or before the target IMS subsystem is cloned again. See section "Target data set ICF catalog aliases" on page 52 for more information.

Note: Do not specify both the BCSCLEAN command and the RECATALOG option of the RENAME command in the same cloning job.

Cloning an offline IMS data-sharing subsystem to a non-data-sharing target

IMS offline cloning infers that the source IMS subsystem has been stopped to achieve your point-in-time copy. It ensures that all buffers have been flushed, all data has been committed to disk, and that no transactions are in flight.

About this task

Prerequisites:
- The new target IMS subsystem will have no log history of the members being removed. Therefore, if further recovery is desired, image copies must be taken.
- Only the IMS member being retained needs to be cloned but all members in the source data-sharing environment must be stopped to create a point-in-time copy.
- The RENAME-MASKS keyword in the RENAME command only needs to include entries for the single IMS system being cloned.

The following table summarizes each step in the cloning an IMS data-sharing subsystem to a non-data-sharing target process:

<table>
<thead>
<tr>
<th>Steps Overview</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1: Stop source and target IMS subsystems</td>
<td>Run the IMSSTOP command, SGCLJCL library member (GCLISTOP).</td>
</tr>
<tr>
<td>Step 2: COPY step</td>
<td>Run the COPY command, SGCLJCL library member (GCLCOPY).</td>
</tr>
</tbody>
</table>
Table 11. Overview: Cloning an IMS data-sharing subsystem to a non-data-sharing target (continued)

<table>
<thead>
<tr>
<th>Steps Overview</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 3</strong>: Start source IMS subsystems</td>
</tr>
<tr>
<td>Run the IMSSTART command, SGCLJCL library member (GCLISTRT).</td>
</tr>
<tr>
<td><strong>Step 4</strong>: RENAME step</td>
</tr>
<tr>
<td>Run the RENAME command, SGCLJCL library member (GCLREN).</td>
</tr>
<tr>
<td><strong>Step 5</strong>: IMSUPDATE step</td>
</tr>
<tr>
<td>Run the IMSUPDATE command, SGCLJCL library member (GCLIUPDT).</td>
</tr>
<tr>
<td><strong>Step 6</strong>: IMSUPDATE step to remove other subsystems</td>
</tr>
<tr>
<td>Run the IMSUPDATE command again, SGCLJCL library member (GCLIUPD3).</td>
</tr>
<tr>
<td><strong>Step 7</strong>: Start target IMS subsystem</td>
</tr>
<tr>
<td>Run the IMSSTART command, SGCLJCL library member (GCLISTRT).</td>
</tr>
<tr>
<td><strong>Step 8</strong>: BCSCLEAN step (optional but recommended)</td>
</tr>
<tr>
<td>BCSCLEAN step, SGCLJCL library member (GCLBCLN). Optional step that runs after target volume usage is terminated and before the next COPY. This step is recommended.</td>
</tr>
</tbody>
</table>

**Procedure**

1. Run the IMSSTOP command on the source system using SGCLJCL library member (GCLISTOP) to stop the source IMS subsystems and the target subsystem if it already exists and is active. An IMSSTOP command should be run for each member in the source data-sharing environment. This ensures that all buffers have been flushed, all data has been committed to disk, and that no transactions are in flight.

2. Run the COPY command.
   Copy the source volumes to the target volumes and back up the source ICF catalogs that point to the data sets on the source volumes being copied. If you are using IBM FlashCopy or SnapShot, run the COPY command to copy the source volumes to the target volumes and back up the source ICF catalogs that point to the data sets on the source volumes being copied. See “COPY” on page 188 for more information on the COPY command.
   If you are using a ‘Split of a Continuous Mirror’ tool, this step assumes the mirror relationship has been started in advance of when you want to ‘split or suspend’ the mirror relationship. Issue the ‘split or suspend’, then run the COPY command to back up the source ICF catalogs that point to the data sets on the source volumes being copied, and optionally, re-label and vary online the target volumes.

3. Run the IMSSTART command on the source system using SGCLJCL library member (GCLISTRT). An IMSSTART command can be run for each member in the source data-sharing environment. At this point, the data has been cloned and access to the source volumes can proceed as normal.

4. To rename and catalog the target volume data sets, run the RENAME command. The RENAME-MASKS keyword command only needs to include entries for the single IMS system being cloned.

5. Run IMSUPDATE command using SGCLJCL library member (GCLIUPD3). The source IMS is data sharing so the IMS-GROUP keyword must be used.
IMSUPDATE updates the RECON data sets, the IMS PROCLIB and IMS.JOBS data sets, and any MDA members

- RECON data set updates – any data set names, IMS subsystem IDs or VOLSERs in the RECON header, database data set, online log, and backout records. It will optionally update the image copy, change accum, SLDS, and RLDS records if they were on a volume that was cloned.
- MDA members – any MDA members for databases or system data sets, such as the RECON, OLDS, or WADS, will be updated to reflect the new data set names.
- IMS PROCLIB and SGCLJCL library members – Any reference to the source IMSID, source volser, or source data sets will be updates with the new values in the SGCLJCL library members within these libraries.

**Note:** The GCLIUPDT sample member contains a step to close an open online log. If the IMS system being cloned was shutdown normally, an online log may not be open and the step to close the log would not be necessary. In this case, the step can be removed from the JCL or it will result with RC=12.

6. Run the IMSUPDATE command again, this time using SGCLJCL member (GCLIUPD3) for each additional data-sharing or shared queues member to be removed from the target environment. This step is in addition to the IMSUPDATE command SGCLJCL member (GCLIUPDT) previously executed. The IMSUPDATE command using SGCLJCL member (GCLIUPD3) will remove information related to the IMS SSID from the RECON. The REMOVE-MEMBER keyword must also be specified in order to remove any SLDS or RLDS log data sets, PRILOG or OLDS information from the RECON data sets. The source IMS was data sharing so the IMS-GROUP keyword must be used.

7. Start the target IMS subsystem whenever you are ready to resume application access to the target volumes. To start the target IMS subsystem, run the IMSSTART command on the target subsystem using SGCLJCL library member (GCLISTRT).

8. Optional: If you intend to rerun the cloning job on a recurring basis, run the BCSCLEAN command prior to starting the next cloning process in order to delete the target catalog entries for the data sets that were created during the last IMS Cloning Tool cloning cycle. Because this will delete the target data set names from the ICF catalog, this step should be done after the target IMS subsystem is no longer needed or before the target IMS subsystem is cloned again. See section “Target data set ICF catalog aliases” on page 52 for more information.

**Note:** Do not specify both the BCSCLEAN command and the RECATALOG option of the RENAME command in the same cloning job.

**IMS Online Cloning Procedures**

This section provides procedures for cloning IMS subsystems under alternative scenarios while IMS is online.

An online IMS subsystem clone is created by suspending the source IMS subsystem to achieve your point-in-time copy. By suspending the source IMS subsystem, any pending database writes are forced to disk, update activity is suspended, and the log buffers are flushed to disk.
Status of transactions In Flight

An online cloning solution often results in transactions in flight. These in-flight transactions, cloned to the target subsystem, result in the same target subsystem action that would happen on the source system if it were to have been shut down at that same time and then restarted. When you use online cloning, the target restart is essentially an emergency restart of a failed system.

The 'unit of work' or transaction can be in any one of the following states:

- **In flight**: This is where a transaction is most of the time. The transaction on the target subsystem will be backed out to the last commit point. Read-only transactions have nothing to back out.
- **Commit**: The transaction is in the process of taking a commit. The transaction updates on the target subsystem should be committed.
- **Abort**: The transaction is in the process of aborting. The transaction on the target subsystem will be backed out to the last commit point.
- **In-doubt**: The transaction was committing and was between phase 1 and phase 2 commit processing. IMS does not know if the transaction should be backed out or committed. Manual intervention is required to either back out or commit the transaction.

Log data needed to back out a transaction should be contained in the active logs. It is possible that a back-out will need log data that no longer resides in an active log. In this case, archive logs will be needed to successfully complete the back-out. Whether the archive logs are necessary for restart of the subsystem, and which logs are needed, depends on how large the active logs are. Running IMSSETLOG at a quiet time is recommended.

Choose the appropriate procedure for your situation. The following online cloning procedures are covered:

- "Cloning an online IMS subsystem to allow another IMS subsystem to access the renamed data sets on the target volumes"
- "Cloning an online IMS data-sharing subsystem and removing members" on page 78
- "Cloning an online IMS data-sharing subsystem to a non-data-sharing target" on page 81

**Cloning an online IMS subsystem to allow another IMS subsystem to access the renamed data sets on the target volumes**

Use the following procedure to clone an online IMS subsystem (when the source IMS subsystem will be suspended to achieve your point-in-time copy) if you intend for a second or target IMS subsystem to access the renamed data sets.

**Before you begin**

Prerequisites:

- If an IMS data-sharing group is being cloned, all members of the group should also be cloned.
- For a data-sharing environment, the target IMS XCF structures should also be deallocated before the target IMS subsystem is first started.
About this task

The following table summarizes each step in the cloning an IMS subsystem to allow another IMS subsystem to access the renamed data sets on the target volumes process:

Table 12. Overview: Cloning an IMS subsystem to allow another IMS subsystem to access the renamed data sets on the target volumes

<table>
<thead>
<tr>
<th>Steps Overview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1: Stop the target IMS subsystem</td>
</tr>
<tr>
<td>Run the IMSSTOP command, SGCLJCL library member (GCLISTOP).</td>
</tr>
<tr>
<td>Step 2: COPY Step</td>
</tr>
<tr>
<td>Run the IMSSETLOG SUSPEND, COPY, and IMSSETLOG RESUME commands, SGCLJCL library member (GCLCOPY).</td>
</tr>
<tr>
<td>Step 3: RENAME step</td>
</tr>
<tr>
<td>Run the RENAME command, SGCLJCL library member (GCLREN).</td>
</tr>
<tr>
<td>Step 4: IMSUPDATE Step</td>
</tr>
<tr>
<td>Run the IMSUPDATE command, SGCLJCL library member (GCLIUPDT).</td>
</tr>
<tr>
<td>Step 5: Additional IMSUPDATE steps (data sharing only)</td>
</tr>
<tr>
<td>If IMS data sharing or shared queues is used, run the IMSUPDATE command again, SGCLJCL library member (GCLIUPD2).</td>
</tr>
<tr>
<td>Step 6: Start target IMS subsystem</td>
</tr>
<tr>
<td>Run the IMSSTART command, SGCLJCL library member (GCLISTR2). The target IMS subsystems must be emergency restarted.</td>
</tr>
<tr>
<td>Step 7: BCSCLEAN step (optional but recommended)</td>
</tr>
<tr>
<td>BCSCLEAN step, SGCLJCL library member (GCLBCLN). Optional step that runs after target volume usage is terminated and before the next COPY. This step is recommended.</td>
</tr>
</tbody>
</table>

Procedure

1. Run the IMSSTOP command using SGCLJCL library member (GCLISTOP) to stop the target IMS subsystem if it existed and is online.

2. Run the IMSSETLOG SUSPEND, COPY, and IMSSETLOG RESUME commands.
   a. Run the IMSSETLOG SUSPEND command to momentarily suspend activity on any online IMS subsystems. This will create a consistent point in time for the COPY process.

   Note: If the copy process can use storage-based consistency to create a consistent copy, you do not need to run the IMSSETLOG SUSPEND command. For more information, see the CONSISTENT parameter of "COPY" on page 188.

   b. Copy the source volumes to the target volumes and back up the source ICF catalogs that point to the data sets on the source volumes being copied. If you are using IBM FlashCopy or SnapShot, run the COPY command to copy the source volumes to the target volumes and back up the source ICF catalogs that point to the data sets on the source volumes being copied. See "COPY" on page 188 for more information on the COPY command.
If you are using a 'Split of a Continuous Mirror' tool, this step assumes the mirror relationship has been started in advance of when you want to 'split or suspend' the mirror relationship. Issue the 'split or suspend', then run the COPY command to back up the source ICF catalogs that point to the data sets on the source volumes being copied, and optionally, re-label and vary online the target volumes.

c. If IMSSETLOG SUSPEND was used, run the IMSSETLOG RESUME command to resume activity on any online IMS subsystems that were suspended prior to the COPY command. If IMSSETLOG SUSPEND was not used, you do not need to run IMSSETLOG RESUME.

3. Run the RENAME command to rename and catalog the target volume data sets.

4. Run the IMSUPDATE command using SGCLJCL library member (GCLIUPDT). The IMSUPDATE command makes the necessary IMS changes to reflect the renamed data sets. IMSUPDATE updates the RECON data sets, the IMS PROCLIB and IMSJOBS data sets, the restart data set, the log records needed for emergency restart, and any MDA members.

   - RECON data set updates – any data set names, IMS subsystem IDs or VOLSERs in the RECON header, database data set, online log, and backup records. It will optionally update the image copy, change accum, SLDS, and RLDS records if they were on volume that were cloned.

   - MDA members – any MDA members for databases or system data sets, such as the RECON, OLDS, or WADS, will be updated to reflect the new data set names.

   - IMS PROCLIB and JCL library members – Any reference to the source IMSID, source volser, or source data sets will be updated with the new values in the JCL members within these libraries.

   - IMS Restart Data Set(s) - VOLSERs and IMS subsystem IDs will be updated to reflect the target IMS subsystem.

   - Log records - IMS subsystem ID for any log records needed for emergency restart.

   **Note:** The GCLIUPDT sample member also contains a step to close an open online log. If the IMS system being cloned was shutdown normally, an online log may not be open and the step to close the log would not be necessary. In this case, the step can be removed from the JCL or it will result with RC=12.

5. If IMS data sharing or shared queues is used in your environment, and it is also desired for the target IMS subsystem, run the IMSUPDATE command again, this time using SGCLJCL library member (GCLIUPD2) for each additional data-sharing or shared queues member. This step is in addition to the IMSUPDATE command SGCLJCL library member (GCLIUPDT) previously executed. The IMSUPDATE command using SGCLJCL library member (GCLIUPD2) will make additional changes for IMS SSID references in the RECON and SGCLJCL library members listed in the previous step.

   **Note:** The GCLIUPD2 sample member also contains a step to close an open online log. If the IMS system being cloned was shutdown normally, an online log may not be open and the step to close the log would not be necessary. In this case, the step can be removed from the JCL or it will result with RC=12.
6. Run the IMSSTART command using SGCLJCL library member (GCLISTR2) to start the target IMS subsystem whenever you are ready to resume application access to the target volumes. This should be an emergency restart of the target IMS subsystem.

7. Optional: If you intend to rerun the cloning job on a recurring basis, run the BCSCLEAN command prior to starting the next cloning process in order to delete the target catalog entries for the data sets that were created during the last IMS Cloning Tool cloning cycle. Because this will delete the target data set names from the ICF catalog, this step should be done after the target IMS subsystem is no longer needed or before the target IMS subsystem is cloned again. See section “Target data set ICF catalog aliases” on page 52 for more information.

Note: Do not specify both the BCSCLEAN command and the RECATALOG option of the RENAME command in the same cloning job.

Cloning an online IMS data-sharing subsystem and removing members
IMS online cloning infers that the source IMS subsystem will be suspended to achieve your point-in-time copy.

About this task

Prerequisites:
- If an IMS data-sharing group is being cloned, all members of the group should also be cloned.
- For a data-sharing environment, the target IMS XCF structures should also be deallocated prior to the first starting of the target IMS subsystem.

The following table summarizes each step in the cloning an IMS data-sharing subsystem and removing members process:

<table>
<thead>
<tr>
<th>Step</th>
<th>Overview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>Stop the target IMS subsystems. Run the IMSSTOP command, SGCLJCL library member (GCLISTOP).</td>
</tr>
<tr>
<td>Step 2</td>
<td>Run the IMSSETLOG SUSPEND, COPY, and IMSSETLOG RESUME commands, SGCLJCL library member (GCLCOPY).</td>
</tr>
<tr>
<td>Step 3</td>
<td>Rename step: run the RENAME command, SGCLJCL library member (GCLREN).</td>
</tr>
<tr>
<td>Step 4</td>
<td>IMSUPDATE step: run the IMSUPDATE command, SGCLJCL library member (GCLIUPDT).</td>
</tr>
<tr>
<td>Step 5</td>
<td>IMSUPDATE step for additional subsystems: Run the IMSUPDATE command again, SGCLJCL library member (GCLIUPD2).</td>
</tr>
<tr>
<td>Step 6</td>
<td>Start target IMS subsystems: run the IMSSTART command, SGCLJCL library member (GCLISTR2). The target IMS subsystems must be emergency restarted.</td>
</tr>
<tr>
<td>Step 7</td>
<td>Stop any target IMS subsystems, SGCLJCL library member (GCLISTOP)</td>
</tr>
<tr>
<td>Step 8</td>
<td>IMSUPDATE step to remove members: run the IMSUPDATE command again, SGCLJCL library member (GCLIUPD3).</td>
</tr>
</tbody>
</table>
Table 13. Overview: Cloning an IMS data-sharing subsystem and removing members (continued)

<table>
<thead>
<tr>
<th>Step</th>
<th>Overview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 9</td>
<td>BCSCLEAN step (optional but recommended), SGCLJCL library member (GCLBCLN): Optional step that runs after target volume usage is terminated and before the next COPY. This step is recommended.</td>
</tr>
</tbody>
</table>

**Procedure**

1. Run the IMSSTOP command using SGCLJCL library member (GCLSTOP) to stop the target subsystem if it already exists and is active. The IMSSTOP command must be run for each member in a data-sharing or shared queues environment.

2. Run the IMSSETLOG SUSPEND, COPY, and IMSSETLOG RESUME commands.
   a. Run the IMSSETLOG SUSPEND command to momentarily suspend activity on any online IMS subsystems. This will create a consistent point in time for the COPY process.

   **Note:** If the copy process can use storage-based consistency to create a consistent copy, you do not need to run the IMSSETLOG SUSPEND command. For more information, see the CONSISTENT parameter of "COPY" on page 188.

   b. Copy the source volumes to the target volumes and back up the source ICF catalogs that point to the data sets on the source volumes being copied.
   If you are using IBM FlashCopy or SnapShot, run the COPY command to copy the source volumes to the target volumes and back up the source ICF catalogs that point to the data sets on the source volumes being copied. See "COPY" on page 188 for more information on the COPY command.
   If you are using a ‘Split of a Continuous Mirror’ tool, this step assumes the mirror relationship has been started in advance of when you want to ‘split or suspend’ the mirror relationship. Issue the ‘split or suspend’, then run the COPY command to back up the source ICF catalogs that point to the data sets on the source volumes being copied, and optionally, re-label and vary online the target volumes.

   c. If IMSSETLOG SUSPEND was used, run the IMSSETLOG RESUME command to resume activity on any online IMS subsystems that were suspended prior to the COPY command. If IMSSETLOG SUSPEND was not used, you do not need to run IMSSETLOG RESUME.

3. Run the RENAME command to rename and catalog the target volume data sets. The RENAME-MASKS keyword needs to include entries that will cause the renaming of all the member system and application database data sets.

4. Run IMSUPDATE command using SGCLJCL library member (GCLIUPDT). The source IMS is data sharing so the IMS-GROUP keyword must be used.

IMSUPDATE updates the RECON data sets, the IMS PROCLIB and IMSJOBS data sets, the IMS Restart Data Set, the logs needed for emergency restart, and any MDA members.

- RECON data set updates – any data set names, IMS subsystem IDs or VOLSERs in the RECON header, database data set, online log, and backout records. It will optionally update the image copy, change accum, SLDS, and RLDS records if they were on a volume that was cloned.
- MDA members – any MDA members for databases or system data sets, such as the RECON, OLDS, or WADS, will be updated to reflect the new data set names.
- IMS PROCLIB and SGCLJCL library members – Any reference to the source IMSID, source volsers, or source data sets will be updates with the new values in the SGCLJCL library members within these libraries.
- IMS Restart Data Set(s) - VOLSERs and IMS subsystem IDs will be updated to reflect the target IMS subsystem.
- Log records - IMS subsystem ID for any log records needed for emergency restart.

**Note:** The GCLIUPDT sample member also contains a step to close an open online log. If the IMS system being cloned was shutdown normally, an online log may not be open and the step to close the log would not be necessary. In this case, the step can be removed from the JCL or it will result with RC=12.

5. Run the IMSUPDATE command again, this time using SGCLJCL library member (GCLIUPD2) for each additional data-sharing or shared queues member to be updated in the target environment. This step is in addition to the IMSUPDATE command SGCLJCL library member (GCLIUPDT) previously executed. The IMSUPDATE command using SGCLJCL library member (GCLIUPD2) will make additional changes for IMS SSID references in the RECON and SGCLJCL library members listed in the previous step. The source IMS is data sharing so the IMS-GROUP keyword must be used.

**Note:** The GCLIUPD2 sample member also contains a step to close an open online log. If the IMS system being cloned was shutdown normally, an online log may not be open and the step to close the log would not be necessary. In this case, the step can be removed from the JCL or it will result with RC=12.

6. Run the IMSSTART command using SGCLJCL library member (GCLISTR2) to start the target IMS subsystems whenever you are ready to resume application access to the target volumes. An IMSSTART command can be run for each IMS subsystem that has been cloned and each subsystem should be emergency restarted.

7. Run the IMSSTOP command using SGCLJCL member (GCLISTOP) to stop any target IMS subsystems to be removed from the target data sharing group.

8. Run the IMSUPDATE command again, this time using JCL member (GCLIUPD3) for each additional data-sharing or shared queues member to be removed from the target environment. This step is in addition to the IMSUPDATE command JCL member (GCLIUPD3) previously executed. The IMSUPDATE command using JCL member (GCLIUPD3) will remove information related to the IMS SSID from the RECON. The source IMS was data sharing so the IMS-GROUP keyword must be used.

The REMOVE-MEMBER keyword must also be specified to remove any SLDS or RLDS log data sets, PRILOG or OLDS information from the RECON data sets.

9. Optional: If you intend to rerun the cloning job on a recurring basis, run the BCSCLEAN command prior to starting the next cloning process in order to delete the target catalog entries for the data sets that were created during the last IMS Cloning Tool cloning cycle. Because this will delete the target data set names from the ICF catalog, this step should be done after the target IMS
subsystem is no longer needed or before the target IMS subsystem is cloned again. See section "Target data set ICF catalog aliases” on page 52 for more information.

**Note:** Do not specify both the BCSCLEAN command and the RECATALOG option of the RENAME command in the same cloning job.

**Cloning an online IMS data-sharing subsystem to a non-data-sharing target**

IMS online cloning infers that the source IMS subsystem will be momentarily suspended to achieve your point-in-time copy.

**About this task**

**Prerequisites:**
- If an IMS data-sharing group is being cloned, all members of the group should also be cloned.
- For a data-sharing environment, the target IMS XCF structures should also be deallocated prior to the first starting of the target IMS subsystem.

The following table summarizes each step in the cloning an IMS data-sharing subsystem to a non-data-sharing target process:

<table>
<thead>
<tr>
<th>Step</th>
<th>Overview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>Stop the target IMS subsystems. Run the IMSSTOP command, SGCLJCL library member (GCLISTOP).</td>
</tr>
<tr>
<td>Step 2</td>
<td>Run the IMSSETLOG SUSPEND, COPY, and IMSSETLOG RESUME commands, SGCLJCL library member (GCLCOPY).</td>
</tr>
<tr>
<td>Step 3</td>
<td>Rename step: run the RENAME command, SGCLJCL library member (GCLREN).</td>
</tr>
<tr>
<td>Step 4</td>
<td>IMSUPDATE step: run the IMSUPDATE command, SGCLJCL library member (GCLIUPDT).</td>
</tr>
<tr>
<td>Step 5</td>
<td>Additional subsystems IMSUPDATE step: Run the IMSUPDATE command again, SGCLJCL library member (GCLIUPD2).</td>
</tr>
<tr>
<td>Step 6</td>
<td>Start target IMS subsystems: run the IMSSTART command, SGCLJCL library member (GCLISTR2). The target IMS subsystems must be emergency restarted.</td>
</tr>
<tr>
<td>Step 7</td>
<td>Stop any target IMS subsystems, SGCLJCL library member (GCLISTOP)</td>
</tr>
<tr>
<td>Step 8</td>
<td>IMSUPDATE step to remove members: run the IMSUPDATE command again, SGCLJCL library member (GCLIUPD3).</td>
</tr>
<tr>
<td>Step 9</td>
<td>BCSCLEAN step (optional but recommended), SGCLJCL library member (GCLBCLN): Optional step that runs after target volume usage is terminated and before the next COPY. This step is recommended.</td>
</tr>
</tbody>
</table>

**Procedure**

1. Run the IMSSTOP command using SGCLJCL library member (GCLISTOP) to stop the target subsystem if it already exist and is active. The IMSSTOP command must be run for each member in a data-sharing or shared queues environment.

2. Run the IMSSETLOG SUSPEND, COPY, and IMSSETLOG RESUME commands.
a. Run the IMSSETLOG SUSPEND command to momentarily suspend activity on any online IMS subsystems. This will create a consistent point in time for the COPY process.

**Note:** If the copy process can use storage-based consistency to create a consistent copy, you do not need to run the IMSSETLOG SUSPEND command. For more information, see the CONSISTENT parameter of "COPY" on page 188.

b. Copy the source volumes to the target volumes and back up the source ICF catalogs that point to the data sets on the source volumes being copied.

If you are using IBM FlashCopy or SnapShot, run the COPY command to copy the source volumes to the target volumes and back up the source ICF catalogs that point to the data sets on the source volumes being copied. See "COPY" on page 188 for more information on the COPY command.

If you are using a 'Split of a Continuous Mirror' tool, this step assumes the mirror relationship has been started in advance of when you want to 'split or suspend' the mirror relationship. Issue the 'split or suspend', then run the COPY command to back up the source ICF catalogs that point to the data sets on the source volumes being copied, and optionally, re-label and vary online the target volumes.

c. If IMSSETLOG SUSPEND was used, run the IMSSETLOG RESUME command to resume activity on any online IMS subsystems that were suspended prior to the COPY command. If IMSSETLOG SUSPEND was not used, you do not need to run IMSSETLOG RESUME.

3. Run the RENAME command to rename and catalog the target volume data sets. The RENAME-MASKS keyword needs to include entries that will cause the renaming of all the member system and application database data sets.

4. Run IMSUPDATE command using SGCLJCL library member (GCLIUPDT). The source IMS is data sharing so the IMS-GROUP keyword must be used.

IMSUPDATE updates the RECON data sets, the IMS PROCLIB and IMS.JOBS data sets, the IMS Restart Data Set, the logs needed for emergency restart, and any MDA members.

- RECON data set updates – any data set names, IMS subsystem IDs or VOLSERs in the RECON header, database data set, online log, and backout records. It will optionally update the image copy, change accum, SLDS, and RLDS records if they were on a volume that was cloned.
- MDA members – any MDA members for databases or system data sets, such as the RECON, OLDS, or WADS, will be updated to reflect the new data set names.
- IMS PROCLIB and SGCLJCL library members – Any reference to the source IMSID, source volser, or source data sets will be updates with the new values in the SGCLJCL library members within these libraries.
- IMS Restart Data Set(s) - VOLSERs and IMS subsystem IDs will be updated to reflect the target IMS subsystem.
- Log records - IMS subsystem ID for any log records needed for emergency restart.

**Note:** The GCLIUPDT sample member also contains a step to close an open online log. If the IMS system being cloned was shutdown normally, an online log may not be open and the step to close the log would not be necessary. In this case, the step can be removed from the JCL or it will result with RC=12.
5. Run the IMSUPDATE command again, this time using SGCLJCL library member (GCLIUPD2) for each additional data-sharing or shared queues member to be updated in the target environment. This step is in addition to the IMSUPDATE command previously executed from SGCLJCL library member (GCLIUPDT). The GCLIUPD2 IMSUPDATE command will make additional changes for IMS SSID references in the RECON and SGCLJCL library members listed in the previous step. Because the source IMS is data-sharing, the IMS-GROUP keyword must be used.

**Note:** The GCLIUPD2 sample member also contains a step to close an open online log. If the IMS system being cloned was shutdown normally, an online log may not be open and the step to close the log would not be necessary. In this case, the step can be removed from the JCL or it will result with RC=12.

6. Run the IMSSTART command using SGCLJCL library member (GCLISTR2) to start the target IMS subsystems whenever you are ready to resume application access to the target volumes. An IMSSTART command can be run for each IMS subsystem that has been cloned and each subsystem should be emergency restarted.

7. Run the IMSSTOP command using SGCLJCL member (GCLISTOP) to stop any target IMS subsystems to be removed from the target data sharing group.

8. Run the IMSUPDATE command again, this time using JCL member (GCLIUPD3) for each additional data-sharing or shared queues member to be removed from the target environment. This step is in addition to the IMSUPDATE command JCL member (GCLIUPDT) previously executed. The IMSUPDATE command using JCL member (GCLIUPD3) will remove information related to the IMS SSID from the RECON. The source IMS was data sharing so the IMS-GROUP keyword must be used.

   The REMOVE-MEMBER keyword must also be specified to remove any SLDS or RLDS log data sets, PRILOG or OLDS information from the RECON data sets.

9. Optional: If you intend to rerun the cloning job on a recurring basis, run the BCSCLEAN command prior to starting the next cloning process in order to delete the target catalog entries for the data sets that were created during the last IMS Cloning Tool cloning cycle. Because this will delete the target data set names from the ICF catalog, this step should be done after the target IMS subsystem is no longer needed or before the target IMS subsystem is cloned again. See section **"Target data set ICF catalog aliases” on page 52** for more information.

   **Note:** Do not specify both the BCSCLEAN command and the RECATALOG option of the RENAME command in the same cloning job.
Chapter 4. Using IMS Cloning Tool – Refreshing databases

The sections in this chapter provide information about using the database cloning features of IMS Cloning Tool to refresh databases.

The procedures you use to refresh databases vary depending on whether you use FlashCopy or SnapShot, or other copy methodologies.

Planning for copying IMS databases

The following sections cover the steps you must take before copying IMS databases.

Before attempting to actually use the IMS Cloning Tool process to refresh databases, some planning and decision-making should take place. This chapter discusses those things that need to be considered.

Considerations for in-progress Read/Write activity

IMS databases and indexes being copied should not have an IMS utility in progress. In addition, there should not be any read/write activity against the source or target databases or indexes to be copied (unless the FUZZY copy option is chosen).

IMS Cloning Tool issues an IMS DBR command to the specific source and target IMS databases and indexes being copied. After issuing the DBR command, IMS Cloning Tool will wait until the databases and indexes are no longer in use. There is no way to force activity to stop. Only a successful DBR command will deallocate the associated data sets from IMS. If the data sets are in use, IMS Cloning Tool waits a user-specified number of minutes for the DBR command to complete successfully.

Considerations for IMS Cloning Tool database cloning copy

The following rules must be taken into consideration when using IMS Cloning Tool to copy IMS databases.

Database copy rules

The following rules apply:
• Databases and indexes can be copied to the same IMS subsystem or a different IMS subsystem
• Databases should not be copied while there is a utility in process against the database.
• Databases will not be copied if recovery or backout needed indicators are set.
• Databases will not be copied if they have any EQEs (if DEDB).
• Databases should not be copied if they have any read/write activity unless FUZZY copy is chosen.
Database attributes

The attributes and contents of the source IMS databases and indexes data sets must not conflict with those of the target IMS database and index data sets.

In general, differences that affect the layout of the data or the data set prevent successful synchronization between source and target database and indexes. On the other hand, attributes that affect only how IMS processes the data, such as Data Capture Exits or insert rules, can be different.

The attributes of the source and target databases and indexes must be identical. The following table includes a list of the object attributes that must be identical, including the object type and the attributes that must be identical:

<table>
<thead>
<tr>
<th>Object Type</th>
<th>Attributes that must be identical for source and target object</th>
</tr>
</thead>
<tbody>
<tr>
<td>Database</td>
<td>Type, Access Method, Number of segments, data set groups, Blocksize, Randomizer Parameters</td>
</tr>
<tr>
<td>Partitioned Database</td>
<td>Number of Partitions, Partition Selection Routine, Keystring</td>
</tr>
<tr>
<td>Segment</td>
<td>Length, Key start and length, Uniqueness, Pointers, Edit Routine</td>
</tr>
<tr>
<td>Index</td>
<td>Clsize, record length, DDATA, source and target segment codes, Sparse routine</td>
</tr>
<tr>
<td>Partitioned Index</td>
<td>Number of Partitions, Keystring</td>
</tr>
</tbody>
</table>

APF authorization

The IMS Cloning Tool LOAD library must be APF authorized. This is included as a configuration step in the IMS Cloning Tool Installation and Maintenance Guide.

Non-SMS managed volumes

If IMS Cloning Tool is controlling the copy process and the target volumes are non-SMS managed, the volser needed for original data sets and the target data sets allocation may be passed to ADRDSSU via the DDIN and DDOUT keywords as defined in the IMS Cloning Tool copy job, as shown in the following examples.

The DDIN parameter passes the volser for input volumes using the DD names from the precopy job JCL:

```
MYINDD DD DISP=SHR,UNIT=3390,VOL=SER=(JM505F,JM515F)
MYINDD2 DD DISP=OLD,UNIT=3390,VOL=SER=(JM525F,JM535F)
```

Similarly, DDOUT passes volser for output volumes using the DD names from the copy job JCL:

```
MYOUTDD DD DISP=OLD,UNIT=SYSDA,VOL=SER=(JM505A,JM515A)
MYOUTDD2 DD DISP=OLD,UNIT=3390,VOL=SER=(JM525A,JM535A)
```

The DDIN and DDOUT keywords can pass multiple DDnames:

```
GCLIN DD *
DDIN(MYINDD,MYINDD2)
DDOUT(MYOUTDD,MYOUTDD2)
```
Note: When specifying either a DDIN or DDOUT keyword, this will limit the copying of data sets to just the input and output volumes even if the data sets are catalogued. See INDDNAME and OUTDDNAME keywords in the z/OS DFSMSdss Storage Administration Reference.

How IMS Cloning Tool starts and stops databases and indexes

IMS Cloning Tool starts and stops source and target databases and indexes depending on certain parameter settings.

Source databases and indexes

For source databases and indexes, the IMSDBREFRESH command keywords FUZZY-COPY and AUTO-START-SOURCE-DB control whether source databases and indexes are stopped and started before and after the copy.

- If FUZZY-COPY(Y) is in effect, no stops or starts will be issued to the source databases and indexes. Databases and indexes are copied in their current state.
- If FUZZY-COPY(N) has been specified, before any copies begin, all specified source databases and indexes are stopped. After all copies are completed, all source databases and indexes are started according to the AUTO-START-SOURCE-DB parameter.
- If SIMULATE is used, the source databases will not be stopped or started, regardless of any other keywords.

If an error occurs when attempting to stop a source database, IMS Cloning Tool tries to restart all the source databases and indexes that were stopped.

Target databases and indexes

For target databases and indexes, the AUTO-STOP-TARGET-DB, AUTO-START-TARGET-DB, and SIMULATE parameters control stopping and starting of target databases and indexes:

- If AUTO-STOP-TARGET-DB(Y) has been specified, the job stops the target databases and indexes.
- If SIMULATE is used, the job will not stop the target databases.

Note: Even if FUZZY-COPY(Y) is in effect, if AUTO-STOP-TARGET-DB(Y) is specified, then the target databases and indexes will be stopped.

- AUTO-START-TARGET-DB: This parameter determines whether the IMS Cloning Tool post copy job starts the databases after processing is completed on the target IMS subsystem. If AUTO-START-TARGET-DB(Y), each database and its indexes are started as soon as the processing is completed.

If an error occurs while attempting to stop a target database, IMS Cloning Tool tries to restart all the target databases and indexes that were stopped.

If databases do not exist on the target, no commands are issued.

Considerations for data set renaming

Users are responsible for creating ICF catalog aliases, if needed, for any new target data set names.
IMS Cloning Tool gets the target data set names from the RECON and MDA libraries from the target IMS. There must be an ALIAS in the ICF catalog to match each new target data set to enable the rename and catalog.

**Return code choices**

The IMS Cloning Tool GCLINI member in the product PARMLIB allows you to choose the seriousness of a return code.

Scenarios discussed in this document assume that the conditional execution of subsequent steps adheres to the convention that return code 0 means successful, 4 means warning, and 8 means an error.

```
MAX_RC = 0  /* stop job when return code is greater than MAX_RC */
MAX_COPY_RC = 0  /* stop job when return code is greater than MAX_COPY_RC */
/* occurs when copying data */
```

**Databases not supported**

Main storage (MSDB) databases are not supported by IMS Cloning Tool.

Generalized sequential access method (GSAM) databases are not supported by IMS Cloning Tool.

Only physical databases names can be specified in the IMS Cloning Tool commands.

**Database registration rules**

Databases can be copied if registered to DBRC or not.

Databases registered to DBRC on the source are not required to be registered to DBRC on the target unless required by IMS.

**IMS Cloning Tool database refresh jobs**

The database refresh process of IMS Cloning Tool is comprised of a batch job that performs the copying process, or prepares the copy processes for non-FlashCopy and SnapShot environments.

**When Using FlashCopy or SnapShot**

**Copy Job Overview**

The IMS Cloning Tool copy job identifies all IMS databases and indexes to be copied to the target IMS subsystem. IMS Cloning Tool will copy the databases by:

- Collecting and validating information from both the source and the target IMS RECON, ACBLIB, and MDALIB data sets.
- Issuing DBR commands for the target databases and indexes (if requested by parms) and the source databases and indexes.
- Issuing the fast replication copy of the data sets for FlashCopy or SnapShot using DFSMSdss.

The copy job consists of 4 logical phases:

- Init Phase
- Discovery Phase
- Compatibility Phase
• Copy Phase

When Using Other Copy Methodologies

The IMSDBREFRESH command has two keywords, PRECOPY and POSTCOPY, that perform all of the same steps performed for FlashCopy or SnapShot except for the actual data set copy.

IMSDBREFRESH command, PRECOPY keyword Overview

The IMSDBREFRESH command, with PRECOPY keyword, identifies all IMS databases and indexes to be copied to the target IMS subsystem. IMS Cloning Tool assists in the copying of the databases by:

- Collecting and validating information from both the source and the target IMS RECON, ACBLIB, and MDALIB data sets.
- Issuing DBR commands for the target databases and indexes (if requested by parms) and the source databases and indexes.

The IMSDBREFRESH command, with PRECOPY keyword, consists of 3 logical phases:

- Init Phase
- Discovery Phase
- Compatibility Phase

The output of the IMSDBREFRESH command, with the PRECOPY keyword, is an output data set that contains a list of data sets that can be used as input by the users copy utility of choice.

IMSDBREFRESH command, POSTCOPY keyword Overview

The IMSDBREFRESH command, with the POSTCOPY keyword specified, is executed after the data sets have been copied outside of IMS Cloning Tool. The POSTCOPY:

- Verifies the target databases are offline
- Update the target IMS RECONs, if registered to DBRC
- Optionally starts the target databases

When using any copy method

Whether you are using FlashCopy, SnapShot, or any other copy method, the IMS Cloning Tool commands IMSSTOPDB and IMSSTARTDB are available to stop and start databases but they are not necessary in most cases. By default, the IMSDBREFRESH command (even when using the PRECOPY keyword), stops the source databases unless FUZZY-COPY or SIMULATE keywords are used.

Additional keywords, AUTO-START-SOURCE-DB(Y), AUTO-STOP-TARGET-DB(Y), and AUTO-START-TARGET-DB(Y) control the stopping and starting of databases. In most cases, the stop and start jobs are not required.

Stop DB Job Overview

The Stop DB job, IMSDBSTOP command, is an optional job that can be used to take the target databases offline if the target IMS subsystem is not in the same LPAR as the source IMS subsystem, and they are non-datasharing, or if the user prefers not to use the auto stop options.
**Start DB Job Overview**

The Start DB job, IMSDBSTART command is an optional job that can be used to put the source and target databases online if the user prefers not to use the auto start options.

**When using FlashCopy or SnapShot**

This section describes the copy job when you are using FlashCopy or SnapShot.

**The Copy Job**

The name of the sample copy job in the product SGCLJCL library is GCLCOPY1.

**Note:** The copy job should be scheduled when no utilities are running and there is no read/write activity against the databases and indexes being copied.

The copy job consists of four following phases:

**Copy Job - Init Phase I**

The IMS Cloning Tool copy job reads all IMS Cloning Tool settings found in the product SGCLPARM library member GCLINI and in the GCLIN DD statement. The GCLIN DD statement identifies the following source and target items:

- Source and target IMS subsystem names
- The databases and indexes to copy
- DDs passed to ADRDSSU for data set allocations
- Copy options

**Copy Job - Discovery Phase II**

The Discovery Phase performs these tasks:

- Determines the source IMS subsystem name and whether it is active.
- Determines all candidate source databases and indexes.
- Determines the attributes of the list of candidate IMS databases and indexes from the source RECON, ACB, and MDA libraries.
- Determines the source data sets associated for each database and index from the source IMS RECON or MDALIB data sets.
- Determines the attributes of the list of candidate IMS databases and indexes from the target RECON, ACB, and MDA libraries.
- Determines the target data sets associated for each database and index from the target IMS RECON or MDALIB data sets.

**Copy Job - Compatibility Phase III**

This phase confirms that a compatible target database or index exists on the target IMS subsystem. Comparisons of some of the attributes between the source and target database and index are made to determine if the data set can be copied from the source to the target.

Any attributes that may cause a conflict between the content or representation of the data in the source and target databases are compared. For example, the access method, number of segments, segment sizes, number of partitions, etc., are compared.

**Target analysis:**

- Uses IMS-SSID(source,target) from the IMS Cloning Tool
- IMSDBREFRESH command to determine the target IMS subsystem
Determines the attributes of the list of candidate IMS databases and indexes from the target RECON, ACB, and MDA libraries.

Verifies the existence of databases and indexes on the target that match the candidate databases and indexes on the source. If matching databases and indexes are found, IMS Cloning Tool will determine the attributes from the target RECON, ACB, and MDA libraries and compare for compatibility.

If no matching database or index is found IMS Cloning Tool sends a warning (RC 4) and records the missing database or index name(s) in GCLPRINT.

Copy Job - Copy Phase IV

This phase determines if FlashCopy or SnapShot will be used to replicate the databases or indexes, or if another copy mechanism will be used and prepares the parameters necessary to make the databases accessible to the target IMS.

IMS Cloning Tool will invoke either FlashCopy or SnapShot (if available) using DFSMSdss, program ADRDSSU, or you can use any other copy mechanism to replicate or copy the list of candidate data sets identified in the Compatibility Phase if keywords PRECOPY and POSTCOPY are used on the IMSDBREFRESH command.

A source and target data set pair is passed to the copy Phase if:

- The attributes of the IMS databases and indexes associated with the source and target data set pairs are compatible between the source and the target subsystems.
- All database or index segment numbers, attributes and lengths are identical between the source and target databases and indexes.
- The target data set does exist and the keyword is REPLACE-TARGET-DS(Y), or the target data set does not exist and the keyword is REPLACE-TARGET-DS(N)

Copy Phase Steps

1. Stop the target databases on the target IMS if it is active on the same LPAR if IMSDBREFRESH command AUTO-STOP-TARGET-DB(Y) keyword is specified, or datasharing is used, and the GLOBAL keyword specified. Otherwise, the IMSDBSTOP job, member GCLDBSTP, can be used to stop the target databases on the target IMS subsystem.

2. IMS Cloning Tool will automatically stop the source databases on the source IMS unless IMSDBREFRESH command FUZZY-COPY or SIMULATE keywords are specified. No specific keywords are needed to stop the source databases.

3. Copy source databases to the target IMS.

4. Restarts the source databases and indexes after the copy is successful if AUTO-START-TARGET-DB(Y)

5. If the target databases are registered to DBRC, IMS Cloning Tool will update the target IMS subsystem RECONs to show that a copy of the database data sets has occurred.
   - LIST.DB to collect database information
   - DELETE.DB to remove recovery history information
   - INIT.DB, INIT.DBDS, INIT.PART, and INIT.AREA to redefine target databases and data sets.
   - Sets IC RECOMMENDED flag on for target databases and indexes.
6. Start the target IMS databases and indexes if the target IMS subsystem is active on the same LPAR, if IMSDBREFRESH command AUTO-START-TARGET-DB(Y) keyword is specified, or datasharing is used and the GLOBAL keyword specified. Otherwise, the IMSDBSTART job, member GCLDBSTR, can be used to start the target databases on the target IMS subsystem.

**When using other copy methodologies**

IMS Cloning Tool database refresh jobs when using other copy methodologies.

- "The IMSDBREFRESH Command, keyword PRECOPY is used when the data sets will be copied by the user."
- "User-initiated Copy" on page 93
- "The IMSDBREFRESH Command, keyword POSTCOPY is used when the data sets were copied by the user, and PRECOPY was used." on page 93

**The IMSDBREFRESH Command, keyword PRECOPY is used when the data sets will be copied by the user.**

The IMSDBREFRESH command with the PRECOPY keyword consists of three phases as follows:

**Note:** The IMSDBREFRESH command with PRECOPY keyword should be scheduled when no utilities are running and there is no read/write activity against the databases and indexes being copied.

**When using PRECOPY keyword - Init Phase I**

When the IMSDBREFRESH command is issued with the PRECOPY keyword, IMS Cloning Tool reads all IMS Cloning Tool settings found in the product SGCLPARM library member GCLINI and in the GCLIN DD statement. The GCLIN DD statement identifies the following source and target items:

- Source and target IMS subsystem names
- The databases and indexes to copy

**When using PRECOPY keyword - Discovery Phase II**

The Discovery Phase performs these tasks:

- Determines the source IMS subsystem name and whether it is active.
- Determines all candidate source databases and indexes
- Determines the attributes of the list of candidate IMS databases and indexes from the source RECON, ACB, and MDA libraries.
- Determines the source data sets associated for each database and index from the source IMS RECON or MDALIB data sets.
- Determines the attributes of the list of candidate IMS databases and indexes from the target RECON, ACB, and MDA libraries.
- Determines the target data sets associated for each database and index from the target IMS RECON or MDALIB data sets.

**When using PRECOPY keyword - Compatibility Phase III**

This phase confirms that a compatible target database or index exists on the target IMS subsystem. Comparisons of some of the attributes between the source and target database and index are made to determine if the data set can be copied from the source to the target.

Any attributes that may cause a conflict between the content or representation of the data in the source and target databases are compared. For example, the access method, number of segments, segment sizes, number of partitions, etc., are compared.
**Target analysis:**
- Uses IMS-SSID(source,target) from the IMS Cloning Tool
- IMSDBREFRESH command to determine the target IMS subsystem
- Determines the attributes of the list of candidate IMS databases and indexes from the target RECON, ACB, and MDA libraries.
- Verifies the existence of databases and indexes on the target that match the candidate databases and indexes on the source. If matching databases and indexes are found, IMS Cloning Tool will determine the attributes from the target RECON, ACB, and MDA libraries and compare for compatibility.
- If no matching database or index is found IMS Cloning Tool sends a warning (RC 4) and records the missing database or index name(s) in GCLPRINT.

**IMSDBREFRESH command with PRECOPY specified steps:**
1. Stop the target databases on the target IMS if it is active on the same LPAR if IMSDBREFRESH command and AUTO-STOP-TARGET-DB(Y) keyword is specified, or if datasharing is used and the GLOBAL keyword specified. Otherwise, the IMSDBSTOP job, member GCLDBSTP, can be used to stop the target databases on the target IMS subsystem.
2. IMS Cloning Tool will automatically stop the source databases on the source IMS unless IMSDBREFRESH command FUZZY-COPY or SIMULATE keywords are specified. No specific keywords are needed to stop the source databases.
3. The output of the IMSDBREFRESH command with the PRECOPY keyword is an output data set that contains a list of data sets that can be used as input by the users copy utility of choice.

**User-initiated Copy**
Using the data set list provided by the IMSDBREFRESH command when the data sets will be copied by the user.

User initiates the copy of the data sets outside of IMS Cloning Tool using the list of data sets provided by the IMSDBREFRESH command with the PRECOPY keyword, or their own list.

**The IMSDBREFRESH Command, keyword POSTCOPY is used when the data sets were copied by the user, and PRECOPY was used.**
The IMSDBREFRESH command with the POSTCOPY keyword consists of one phase.

**Note:** The IMSDBREFRESH command with POSTCOPY keyword should only run after the user has copied the data sets.

**When using POSTCOPY keyword:**
1. Restarts the source databases and indexes if AUTO-START-SOURCE-DB(Y)
2. Verifies the targets databases are offline
3. If the target databases are registered to DBRC, IMS Cloning Tool will update the target IMS subsystem RECONs to show that a copy of the database data sets has occurred.
   - LIST.DB to collect database information
   - DELETE.DB to remove recovery history information
• INIT.DB, INIT.DBDS, INIT.PART, and INIT AREA to redefine target databases and data sets.
• Sets IC RECOMMENDED flag on for target databases and indexes.

4. Starts the target IMS databases and indexes if the target IMS subsystem is active on the same LPAR or if data sharing is used, and the global keyword is used.

When using any methodology
Whether you are using FlashChopy, SnapShot, or another copy methodology, the IMS Cloning Tool commands IMSSTOPDB and IMSSTARTDB are available to stop and start target databases but are not necessary in most cases.

• "The IMSDBREFRESH Command, keyword PRECOPY is used when the data sets will be copied by the user." on page 92
• "User-initiated Copy" on page 93

The Stop DB job
The IMS Cloning Tool command IMSSTOPDB is available to stop target databases but is not necessary in most cases.

The IMSDBREFRESH command (even when using the PRECOPY keyword), will stop the target databases if the AUTO-STOP-TARGET-DB(Y) keyword is used and the SIMULATE keyword is not specified. If the target databases are in another LPAR and non-datasharing is used, you may wish to use this command. In most cases, the stop is not required.

This job must be executed on the same z/OS system as the target IMS subsystem by the user or job scheduler. This job will take the target databases offline to the target IMS subsystem so that they can be refreshed.

The name of the job for the IMSTOPDB command is GCLDBSTP and can be found in the product SGCLJCL library.

Stop DB job steps:

Execute the commands specified in GCLIN to:
• Determine all candidate source databases, indexes, and associated data sets from the IMS RECON, ACB, and MDA libraries.
• Stop, or DBR the target IMS databases and indexes

Once this job ends, the cloned databases and indexes are accessible to the IMS subsystem.

The Start DB job
The IMS Cloning Tool command IMSSTARTDB is available to start the source or target databases but is not necessary in most cases.

The IMSDBREFRESH command (even when using the POSTCOPY keyword) will start the source and target databases if AUTO-START-SOURCE-DB(Y), and AUTO-START-TARGET-DB(Y) keywords are used unless the SIMULATE keyword is specified.

This job must be executed on the same z/OS system as the source or target IMS subsystem by the user or job scheduler.
The name of the job for the IMSTARTDB command is GCLDBSTR and can be found in the product SGCLJCL library.

**Start DB job steps:**

Execute the commands specified in GCLIN to:

- Determine all candidate source databases and indexes from the IMS RECON, ACB, and MDA libraries.
- Start the IMS databases and indexes

Once this job ends, the cloned databases and indexes are accessible to the IMS subsystem.

### Setup procedures for copy by data set with FlashCopy or SnapShot

This chapter contains IMS Cloning Tool database refresh setup procedures for you to use if data set copies are to be created with FlashCopy or SnapShot via DFSMSdss slow copies.

Setup procedures for scenarios using methodologies other than FlashCopy or SnapShot are documented in “Setup procedures for all other copy methodologies” on page 103.

IMS Cloning Tool requires that the target database be defined in the target IMS subsystem, the Database management block (DMB) must exist in the ACBLIB, a member must exist in MDALIB if used, and the database and data sets must be defined in DBRC if desired or required by IMS. The database data sets do not have to be preallocated or prepopulated.

**Overview: Setup for FlashCopy/SnapShot**

The following table lists the steps that are necessary to set up IMS Cloning Tool to work with FlashCopy/SnapShot.

<table>
<thead>
<tr>
<th>FlashCopy/SnapShot Setup Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Step 1: Verify or create the target IMS databases in the target IMS subsystem” if necessary.</td>
</tr>
<tr>
<td>“Step 2: Optional - Set up the Stop DB job (GCLDBSTP)” on page 96 - Use the SGCLJCL library member GCLDBSTP.</td>
</tr>
<tr>
<td>“Step 3: Set up and run the Copy job (GCLCOPY1)” on page 98 - Set up the copy job. Use the SGCLJCL library member GCLCOPY1.</td>
</tr>
<tr>
<td>“Step 4: Optional - Set up and Run the Start DB job (GCLDBSTR)” on page 101 - Use the SGCLJCL library member GCLDBSTR</td>
</tr>
</tbody>
</table>

**Step 1: Verify or create the target IMS databases in the target IMS subsystem**

If the databases are not currently defined to the target IMS subsystem, they must be defined prior to running the IMS Cloning Tool jobs to copy the data from another database of an IMS subsystem.

- The Database management block (DMBs) that define any database to be cloned must exist or be created in the target IMS ACBLIB.
- A dynamic allocation member must be defined in the target IMS MDALIB.
• The database, areas (if FP DEDB), partitions (if HALDB), and data sets must be defined to DBRC if the database will be registered to DBRC.

• The DMB, MDA, and DBRC definitions must be created for any indexes to be copied.

**Step 2: Optional - Set up the Stop DB job (GCLDBSTP)**

The IMSDBSTOP command, stop DB job, is only needed for target databases if the target IMS subsystem is active on a different z/OS image than the source IMS subsystem. The job is used to take the databases to be refreshed offline to the target IMS subsystem.

**About this task**

An example of the Stop DB JCL for this scenario can be found in the product SGCLJCL library member GCLDBSTP. An example, and the details for each step to setup this job, follows:

**Procedure**

1. Identify the IMS control data sets for the IMS subsystem.
2. Identify what IMS subsystem the database to stop is on.
3. Identify the databases to stop to IMS Cloning Tool in the GCLIN control data set.
4. Indicate whether indexes for the databases being stopped, should be stopped as well. It is recommended that the indexes always be stopped when the primary database is stopped.
5. Indicate any additional options to use when issuing the IMS DBR command.
6. Indicate maximum time IMS Cloning Tool should wait for the databases to be taken offline and the return code to issue should the maximum wait time be exceeded.

**Note:** For more information about the commands used to set up the Stop DB job, go to Chapter 9, “Reference: Database refresh commands,” on page 267.

**Stop DB Job Example**

For completeness and to illustrate where JCL parameters and IMS Cloning Tool control statements must match, the following JCL includes sample IMS Cloning Tool control statements. Complete command control statement syntax is documented in Chapter 9, “Reference: Database refresh commands,” on page 267.

The Stop DB job JCL is shown in the following example. The numbers preceding the JCL correspond to notes, (following this sample JCL) containing an explanation of the line of JCL.

```plaintext
//jobcard /*JOBPARM S=zossys /*
  /* Using IMS Cloning Tool to DBR the databases on an IMS subsystem when the target is on a different LPAR than the source database. variables to be filled in ...
  /*
  /* jobcard - job card
  /* zossys - name of zOS image where the IMS subsystem is active
  /* hlq? - IMS Cloning Tool LOAD library and PARMLIB
  /* high level qualifier
```
// ssid - IMS subsystem ID

1 //STEP1 EXEC PGM=GCL00010,REGION=0M
2 //STEPLIB DD DISP=SHR,DSN=hlq.?SGCLLOAD
   //
3 //GCLINI DD DISP=SHR,DSN=hlq.?SGCLPARM(GCLINI)
   //
4 //GCLPRINT DD SYSOUT=* 
   //SYSUDUMP DD SYSOUT=* 
   //ABNLIGNR DD DUMMY do not remove if using ABENDAID
   //
5 //ssidACB DD DISP=SHR,DSN=IMS.ssid.ACBLIB
6 //ssidMDA DD DISP=SHR,DSN=IMS.ssid.MDALIB
7 //ssidREC1 DD DISP=SHR,DSN=IMS.ssid.RECON1
   //ssidREC2 DD DISP=SHR,DSN=IMS.ssid.RECON2
   //ssidREC3 DD DISP=SHR,DSN=IMS.ssid.RECON3
   //***************************************************************************
   // sample control statements
   //***************************************************************************
8 //GCLIN DD *
9 //IMSDBSTOP -
    // IMS-SSID(ssid) -
    // DBD(dbdname1,dbdname2) -
    // INDEXES(Y) -
    // GLOBAL -
    // NOFEOV -
    // WAIT(2,RC(7))

Note: In this example, the following:

1. //STEP1 EXEC PGM=GCL00010,REGION=OM is the execution of the IMS Cloning Tool main program.

2. The IMS Cloning Tool SGCLLOAD library declared in //STEPLIB DD must be authorized.

3. GCLINI is the DD for the GCLINI member of SGCLPARM. The GCLINI member contains the product security license codes and program variables.

4. GCLPRINT displays GCLINI tokens, control parameters, data set names and messages showing the steps and status of the process to stop the databases.

5. ssidACB is the input data set that references the ACB library for the IMS subsystem.

6. ssidMDA is the input data set that references the MDA (dynamic allocation member) library for the IMS subsystem.

7. ssidREC1, ssidREC2, and ssidREC3 are the input data sets that identify the RECON data sets for the IMS subsystem.

8. The GCLIN DD statement defines the control statement input for IMS Cloning Tool.

9. The IMSDBSTOP command indicates to IMS Cloning Tool to stop a database or databases and possibly any indexes. The following keywords are in this section
   - The IMS-SSID(ssid) keyword indicates the IMS subsystem ID where the database(s) should be stopped.
   - The DBD(dbdname1,dbdname2) keyword indicates which databases to stop.
   - The INDEXES keyword indicates any indexes for the primary databases should be stopped.
• The **GLOBAL** keyword indicates the IMS DBR command should be issued with the GLOBAL option in order to stop the database on all IMS subsystems in a data sharing environment.

• The **NOFEOV** keyword indicates the IMS DBR command should be issued with the NOFEOV option so that an automatic log switch is not done.

• The **WAIT(2,RC(7))** keyword indicates that after issuing the IMS DBR command, IMS Cloning Tool should wait for up to two minutes for the database to be offline. If any of the databases are not offline after the time limit specified, IMS Cloning Tool will end with the return code specified.

**What to do next**

**Step 3: Set up and run the Copy job (GCLCOPY1)**

The copy job is comprised of phases to control the selection and the copying of the IMS databases and indexes on the source subsystem and to make them accessible on the target subsystem.

**About this task**

An example of the copy job JCL for this scenario can be found in the product SGCLJCL library member GCLCOPY1. An example, and the details for each step to setup this job, follows.

**Procedure**

1. Identify the IMS control data sets for the IMS subsystem.

2. Identify the IMS control data sets for the target IMS subsystem. These DD control statements can be removed if the source and target IMS subsystem IDs are the same.

3. Identify the DBD library for the target IMS subsystem. This is needed to invoke DBRC when updating information for the target database.

4. Identify the source and target IMS subsystems.

5. Identify the databases to copy in the GCLIN control data set.

6. Indicate whether indexes for the databases should be copied as well. It is recommended that the indexes always be copied when the primary database is copied.

7. Indicate that IMS Cloning Tool should invoke DFSMSdss to do the data set copy. If using data set level FlashCopy or SnapShot to copy databases and indexes, and your environment is set up to support data set level replication, use **IMSDBREFRESH** command keyword, DATA-MOVER(PGM((ADRDSSU))) which invokes DFSMSdss program ADRDSSU to execute either FlashCopy or SnapShot to do the data set level copy operation. If flash copy is not available, ADRDSSU will substitute a normal copy operation, unless REQUIRED is specified. If **IMSDBREFRESH** command keyword **FUZZY-COPY(Y)** is specified, then IMS Cloning Tool will not stop the source databases and indexes. However, this is not recommended, because if the databases and indexes are in update mode, the data integrity can be compromised.

8. Specifies DD statements identifying volumes where non-SMS managed input data sets reside. This keyword is only needed if non-SMS managed data sets are being copied else the keyword can be removed. Up to 256 DD names can be specified.
9. Specifies DD statements identifying volumes where non-SMS managed output data sets reside. This keyword is only needed if non-SMS managed data sets are being created else the keyword can be removed. Up to 256 DD names can be specified.

10. Keyword to indicate whether DFSMSdss should perform the copy operation if the target data set already exists or not.

11. Keyword to indicate whether IMS Cloning Tool should issue the IMS STA command to start the source databases and indexes after the copy operation has completed.

12. Keyword to indicate whether IMS Cloning Tool should issue the IMS DBR command to stop the target databases and indexes before the copy operation is initiated. IMS Cloning Tool will always check to make sure the database and index data sets are not in use prior to starting the copy process.

13. Keyword to indicate whether IMS Cloning Tool should issue the IMS STA command to start the target databases and indexes after the copy operation has completed and information on the target IMS subsystem for the databases and indexes has been updated.

14. Indicate any additional options to use when issuing the IMS DBR command.

15. Indicate maximum time IMS Cloning Tool should wait for the databases to be taken offline and the return to issue should the maximum wait time be exceeded.

**Copy Job Example**

For completeness and to illustrate where JCL parameters and IMS Cloning Tool control statements must match, the following JCL includes sample control statements. Complete command control statement syntax is documented in Chapter 9, “Reference: Database refresh commands,” on page 267.

The Copy job JCL is shown in the following example. The numbers preceding the JCL correspond to notes, (following this sample JCL) containing an explanation of the line of JCL.

```plaintext
//jobcard
/*JOBPARM S=zossys
  /* Using GCL to invoke DFSMSdss to copy a database and it's indexes
  /* variables to be filled in ...
  /*
  /* jobcard - job card
  /* zossys - name of zOS image where the source IMS subsys is active
  /* hlq? - GCL LOAD library and PARMLIB high level qualifier
  /* ssids - source IMS subsystem ID
  /* ssidt - target IMS subsystem ID (if different than source)
  /*
  /* Use DFSMSdss to EXECUTE FLASHCOPY or SNAPSHOT
  /*
1 //STEP1 EXEC PGM=GCL00010,REGION=0M
2 //STEPLIB DD DISP=SHR,DSN=hlq?.SGCLLOAD
  /*
3 //GCLINI DD DISP=SHR,DSN=hlq?.SGCLPARM(GCLINI)
  /*
4 //GCLPRINT DD SYSOUT=
  /*
  /*SYSUDUMP DD SYSOUT=
  /*ABNLIGNR DD DUMMY do not remove if using ABENDAID
  /*
5 //ssidsACB DD DISP=SHR,DSN=IMS.ssids.ACBLIB
6 //ssidsMDA DD DISP=SHR,DSN=IMS.ssids.MDALIB
```

Chapter 4. Using IMS Cloning Tool – Refreshing databases 99
7 //ssidsREC1 DD DISP=SHR,DSN=IMS.ssids.RECON1
     //ssidsREC2 DD DISP=SHR,DSN=IMS.ssids.RECON2
     //ssidsREC3 DD DISP=SHR,DSN=IMS.ssids.RECON3
8 //ssidtACB DD DISP=SHR,DSN=IMS.ssidt.ACLIB
9 //ssidtMDA DD DISP=SHR,DSN=IMS.ssidt.MDALIB
10 //ssidtREC1 DD DISP=SHR,DSN=IMS.ssidt.RECON1
    //ssidtREC2 DD DISP=SHR,DSN=IMS.ssidt.RECON2
    //ssidtREC3 DD DISP=SHR,DSN=IMS.ssidt.RECON3
11 //IMS DD DISP=SHR,DSN=IMS.ssidt.DBDLIB
     // DD DISP=SHR,DSN=IMS.ssids.DBDLIB

//********************************************************************
//* the following DDs are only needed if non-SMS managed data sets
//********************************************************************
//*DDIN1 DD UNIT=SYSDA,VOL=SER=src001,DISP=SHR
//*DDOUT1 DD UNIT=SYSDA,VOL=SER=tgt001,DISP=SHR
//********************************************************************
//* sample control statements
//********************************************************************
12//GCLIN DD *
13 IMSDBREFRESH -
     IMS-SSID(ssids,ssidt) -
     DBD(dbdname1,dbdname2) -
     INDEXES(Y) -
     DATA-MOVER(PGM(ADROSSU)) -
     REPLACE-TARGET-DS(Y) -
     AUTO-START-SOURCE-DB(Y) -
     AUTO-STOP-TARGET-DB(Y) -
     AUTO-START-TARGET-DB(Y) -
     GLOBAL -
     NOFEOV -
     WAIT(3,RC(9))
    //

Note: In this example, the following:

1. //STEP1 EXEC PGM=GCL00010,REGION=0M is the execution of IMS Cloning Tool main program.
2. The IMS Cloning Tool SGCLLOAD library declared in STEPLIB DD must be authorized.
3. GCLINI is the DD for the GCLINI member of SGCLPARM. The GCLINI member contains the product security license codes and program variables.
4. GCLPRINT displays GCLINI tokens, control parameters, data set names and messages showing the steps and status of the process to stop the databases.
5. ssidsACB is the input data set that references the ACB library for the source IMS subsystem.
6. ssidsMDA is the input data set that references the MDA (dynamic allocation member) library for the source IMS subsystem.
7. ssidsREC1, ssidsREC2, and ssidsREC3 are the input data sets that identify the RECON data sets for the source IMS subsystem.
8. ssidtACB is the input data set that references the ACB library for the target IMS subsystem. This DD should be removed if the source and target IMS subsystems are the same.
9. ssidtMDA is the input data set that references the MDA (dynamic allocation member) library for the target IMS subsystem. This DD should be removed if the source and target IMS subsystems are the same.
10. ssidtREC1, ssidtREC2, and ssidtREC3 are the input data sets that identify the RECON data sets for the target IMS subsystem. ssidtREC1, ssidtREC2, and ssidtREC3 should be removed if the source and target IMS subsystems are the same.

11. IMS is the DBD library for the target IMS subsystem. This is needed to invoke DBRC processing for the target databases. If COPY-IF-NO-IMS-TARGET-DB(Y) is specified and a DBD for the databases being refreshed is not in the target DBD library, then the DBD for the source IMS subsystem should be concatenated to the IMS DD.

12. The GCLIN statement defines the control statement input for IMS Cloning Tool.

13. The IMSDBSTOP command indicates to IMS Cloning Tool to stop a database or databases and possibly any indexes. The following keywords are in this section
   - IMS-SSID(ssids,ssidt), IMS-SSID keyword that indicates the source and target IMS subsystems. If the source and target IMS subsystem IDs are the same, the target subsystem can be omitted.
   - The DBD(dbdname1,dbname2) keyword indicates which databases to refresh.
   - The INDEXES keyword indicates any indexes for the primary databases should be refreshed.
   - The GLOBAL keyword indicates the IMS DBR and STA commands should be issued with the GLOBAL option in order to stop and start the database on all IMS subsystems in a data sharing environment.
   - The NOFEOV keyword indicates the IMS DBR command should be issued with the NOFEOV option so that an automatic log switch is not done.
   - The WAIT(2,RC(7)) keyword indicates that after issuing the IMS DBR command, IMS Cloning Tool should wait for up to two minutes for the database to be offline. If any of the databases are not offline after the time limit specified, IMS Cloning Tool will end with the return code specified.

**Step 4: Optional - Set up and Run the Start DB job (GCLDBSTR)**

The IMSDBSTART command start DB job is only needed if the target IMS subsystem is active on a different z/OS image than the source IMS subsystem and non-datasharing. The job is used to make the databases online to the target IMS subsystem.

**About this task**

An example of the Start DB JCL for this scenario can be found in the product SGCLJCL library member GCLDBSTR. An example, and the details for each step to setup this job, follows:

**Procedure**

1. Identify the IMS control data sets for the IMS subsystem.
2. Identify what IMS subsystem the database to start is on.
3. Identify the databases to stop to IMS Cloning Tool in the GCLIN control data set.
4. Indicate whether indexes for the databases being started, should be started as well.
5. Indicate any additional options to use when issuing the IMS STA command.
**Start DB Job Example**

For completeness and to illustrate where JCL parameters and IMS Cloning Tool control statements must match, the following JCL includes sample IMS Cloning Tool control statements. Complete command control statement syntax is documented in [Chapter 9, “Reference: Database refresh commands,” on page 267](#).

The Start DB job JCL is shown in the following example. The numbers preceding the JCL correspond to notes, (following this sample JCL) containing an explanation of the line of JCL.

```plaintext
//jobcard
/*JOBPARM S=zossys
 /*
 /**
 /* Using IMS Cloning Tool to STA the databases on an IMS subsystem
 /* variables to be filled in ...
 /*
 /*  jobcard - job card
 /*  zossys - name of zOS image where the IMS subsystem is active
 /*  hlq?  - IMS Cloning Tool LOAD library and PARMLIB
 /*  high level qualifier
 /*  ssid  - IMS subsystem ID
 /*
1 //STEP1 EXEC PGM=GCL00010,REGION=0M
2 //STEPLIB DD DISP=SHR,DSN=hlq?.SGCLLOAD
 /*
3 //GCLINI DD DISP=SHR,DSN= hlq?.SGCLPARM(GCLINI)
 /*
4 //GCLPRINT DD SYSOUT=*  
 /*  /*SYSUDUMP DD SYSOUT=*  
 /*  //ABNLIGNR DD DUMMY do not remove if using ABENDAID
 /*
5 //ssidACB DD DISP=SHR,DSN=IMS.ssid.ACBLIB
6 //ssidMDA DD DISP=SHR,DSN=IMS.ssid.MDALIB
7 //ssidREC1 DD DISP=SHR,DSN=IMS.ssid.RECON1
 //ssidREC2 DD DISP=SHR,DSN=IMS.ssid.RECON2
 //ssidREC3 DD DISP=SHR,DSN=IMS.ssid.RECON3
 /*  *******************************************************************************/
 /*  sample control statements
 /*  *******************************************************************************/
8 //GCLIN DD *
 9 IMSDBSTART -
    IMS-SSID(ssid) -
    DBD(dbdname1,dbdname2) -
    INDEXES(Y) -
    GLOBAL
 /*
```

**Note:** In this example, the following:

1. //STEP1 EXEC PGM=GCL00010,REGION=0M is the execution of IMS Cloning Tool main program.
2. The IMS Cloning Tool SGCLLOAD library declared in STEPLIB DD must be authorized.
3. GCLINI is the DD for the GCLINI member of SGCLPARM. The GCLINI member contains the product security license codes and program variables.
4. GCLPRINT displays GCLINI tokens, control parameters, data set names and messages showing the steps and status of the process to start the databases.
5. ssidACB is the input data set that references the ACB library for the IMS subsystem.
6. ssidMDA is the input data set that references the MDA (dynamic allocation member) library for the IMS subsystem.
7. ssidREC1, ssidREC2, and ssidREC3 are the input data sets that identify the RECON data sets for the IMS subsystem.
8. The GCLIN statement defines the control statement input for IMS Cloning Tool.
9. The IMSDBSTART command indicates to IMS Cloning Tool to start a database or databases and possibly any indexes. The following keywords are in this section
   - The IMS-SSID(ssid) keyword indicates the IMS subsystem ID where the database(s) should be started.
   - The DBD(dbdbname1,dbname2) keyword indicates which databases to start.
   - The INDEXES keyword indicates any indexes for the primary databases should be started.
   - The GLOBAL keyword indicates the IMS STA command should be issued with the GLOBAL option in order to start the database on all IMS subsystems in a data sharing environment.

**Setup procedures for all other copy methodologies**

This chapter contains IMS Cloning Tool setup procedures for you to use if data set copies are to be created using copy methodologies other than FlashCopy or SnapShot via DFSMSdss.

Setup procedures for scenarios using FlashCopy or SnapShot are documented in “Setup procedures for copy by data set with FlashCopy or SnapShot” on page 95.

IMS Cloning Tool requires that the target database be defined in the target IMS subsystem. The Database control block (DBM) must exist in the ACBLIB, a member must exist in MDALIB if used, and the database and data sets must be defined in DBRC if applicable. The database data sets do not have to be preallocated or prepopulated.

**Overview: Setup for other copy methodologies**

This procedure is used for all other copy methodologies, other than FlashCopy or SnapShot. This procedure performs all of the same steps performed in the FlashCopy or SnapShot chapter except for the actual data set copies which the user is responsible for.

The following table lists the steps that are necessary to set up IMS Cloning Tool to work with other copy methodologies.

<table>
<thead>
<tr>
<th>Other Copy Methodology Set Up Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Step 1: Verify or create the target IMS databases in the target IMS subsystem” on page 104</td>
</tr>
<tr>
<td>“Step 2: Optional - Set up and run the PreCopy job (GCLPREC)” on page 104</td>
</tr>
<tr>
<td>“Step 3: Optional - Set up and run the Stop DB job (GCLDBSTP) to stop target IMS databases” on page 107</td>
</tr>
</tbody>
</table>
Table 17. IMS Cloning Tool Setting up for using Other Copy Methodologies (continued)

<table>
<thead>
<tr>
<th>Other Copy Methodology Set Up Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Step 4: Set up and run the non-IMS Cloning Tool utility to copy the database and index data sets” on page 109</td>
</tr>
<tr>
<td>“Step 5: Optional - Set up and run the job to restart source IMS databases (GCLDBSTR)” on page 109</td>
</tr>
<tr>
<td>“Step 6: Set up and run the Post copy job (GCLPOSTC)” on page 111</td>
</tr>
</tbody>
</table>

Step 1: Verify or create the target IMS databases in the target IMS subsystem

If the databases are not currently defined to the target IMS subsystem, they must be defined prior to running the IMS Cloning Tool jobs to copy the data from another database of an IMS subsystem.

- The Database management block (DMBs) that define any database to be cloned must exist or be created in the target IMS ACBLIB.
- A dynamic allocation member must be defined in the target IMS MDALIB
- The database, areas (if FP DEDB), partitions (if HALDB), and data sets must be defined to DBRC if the database will be registered to DBRC
- The DMB, MDA, and DBRC definitions must be created for any indexes to be copied

Step 2: Optional - Set up and run the PreCopy job (GCLPREC)

The precopy job is comprised of phases to control the selection of the IMS databases and indexes on the source subsystem, to verify compatibility with the target databases and indexes, and to provide a complete list of data sets to copy that can be used as input to your copy mechanism.

About this task

For other copy methodologies, the PRECOPY keyword that indicates this IMS Cloning Tool invocation is in preparation for copying the database and index data sets. IMS Cloning Tool will generate a list of database and index data sets to copy from and to in the GCLCOPY DD.

An example of the precopy job JCL for this scenario can be found in the product SGCLJCL library member GCLPREC. Details for each step to setup this job and example follows.

Procedure

1. Identify the IMS control data sets for the source IMS subsystem.
2. Identify the IMS control data sets for the target IMS subsystem. These DD control statements can be removed if the source and target IMS subsystem IDs are the same.
3. Identify the output data set for a list of source and target data set names.
4. Identify the source and target IMS subsystems.
5. Identify the databases to be copied to IMS Cloning Tool in the GCLIN control data set.
6. Indicate whether indexes for the databases should be copied as well. It is recommended that the indexes always be copied when the primary database is copied.
Precopy Job Example

For completeness and to illustrate where JCL parameters and IMS Cloning Tool control statements must match, the following JCL includes sample IMS Cloning Tool control statements. Complete command control statement syntax is documented in GCL.

The Precopy job JCL is shown in the following example. The numbers preceding the JCL correspond to notes, (following this sample JCL) containing an explanation of the line of JCL.

```
//jobcard
//*
//* Database refresh where:
//* GCL is not being used to perform copy operation
//* variables to be filled in...
//*
//* jobcard - job card
//* hlq? - GCL SGCLLOAD library and SGCLPARM high level qualifier
//* hlq2? - GCLCOPY & DBROUT high level qualifier
//* dbrcinfo - DBRCOUT member name
//* listdsns - GCLCOPY member name
//* ssids - source IMS subsystem ID
//* ssidt - target IMS subsystem ID (if different than source)
//*
1 //STEP1 EXEC PGM=GCL00010,REGION=0M
2 //STEP1B DD DISP=SHR,DSN=hlq?.SGCLLOAD
//*
3 //GCLINI DD DISP=SHR,DSN=hlq?.SGCLPARM(GCLINI)
//*
4 //GCLPRINT DD SYSOUT=*  
//SYSUDUMP DD SYSOUT=*  
//ABNLIGNR DD DUMMY do not remove if using ABENDAID
//*
5 //ssidsACB DD DISP=SHR,DSN=IMS.ssids.ACBLIB
6 //ssidsMDA DD DISP=SHR,DSN=IMS.ssids.MDALIB
7 //ssidsREC1 DD DISP=SHR,DSN=IMS.ssids.RECON1
//ssidsREC2 DD DISP=SHR,DSN=IMS.ssids.RECON2
//ssidsREC3 DD DISP=SHR,DSN=IMS.ssids.RECON3
8 //ssidtACB DD DISP=SHR,DSN=IMS.ssidt.ACBLIB
9 //ssidtMDA DD DISP=SHR,DSN=IMS.ssidt.MDALIB
10 //ssidtREC1 DD DISP=SHR,DSN=IMS.ssidt.RECON1
//ssidtREC2 DD DISP=SHR,DSN=IMS.ssidt.RECON2
//ssidtREC3 DD DISP=SHR,DSN=IMS.ssidt.RECON3
//*
11 //GCLCOPY DD DISP=OLD,DSN=hlq?.COPYDSNS(listdsns)
12 //DBRCOUT DD DISP=OLD,DSN=hlq?.DBRCOUT(dbrcinfo)
//*
//**********************************************************************************
// sample control statements
//**********************************************************************************
13 //GCLIN DD *
14 //IMSDREFRESH
// IMS-SSID(ssids,ssidt)  
// DBD(dbdbname1,dbdbname2)  
// INDEXES(Y)  
// DATA-MOVER(PGM(NONE))  
// PRECOPY
//
```

Note: In this example, the following:
1. //STEP1 EXEC PGM=GCL00010,REGION=0M is the execution of IMS Cloning Tool main program.

2. The IMS Cloning Tool SGCLLOAD library declared in STEPLIB DD must be authorized.

3. GCLINI is the DD for the GCLINI member of SGCLPARM. The GCLINI member contains the product security license codes and program variables.

4. GCLPRINT displays GCLINI tokens, control parameters, data set names and messages showing the steps and status of the process to stop the databases.

5. ssidACB is the input data set that references the ACB library for the source IMS subsystem.

6. ssidMDA is the input data set that references the MDA (dynamic allocation member) library for the source IMS subsystem.

7. ssidREC1 is the input data set that identifies the RECON data sets for the source IMS subsystem.

8. ssidACB is the input data set that references the ACB library for the target IMS subsystem. This DD should be removed if the source and target IMS subsystems are the same.

9. ssidMDA is the input data set that references the MDA (dynamic allocation member) library for the target IMS subsystem. This DD should be removed if the source and target IMS subsystems are the same.

10. ssidRECx is the input data set that identifies the RECON data sets for the target IMS subsystem. This DD should be removed if the source and target IMS subsystems are the same.

11. GCLCOPY is the (optional) output data set where IMS Cloning Tool will provide a list of data set names to copy from.

12. DBRCOUT is the output data set where IMS Cloning Tool will put DBRC information that will be passed to the POSTCOPY step. The data set should be LRECL=80, RECFM=FB. This data set is needed if the source ACB, MDA, & RECON libraries are not added to the POSTCOPY job.

13. The GCLIN statement defines the control statement input for IMS Cloning Tool.

14. The IMSDBREFRESH command indicates to IMS Cloning Tool which database or databases and possibly any indexes to copy. The following keywords are in this section
   - The IMS-SSID(ssid) keyword indicates the IMS subsystem ID where the database(s) should be stopped.
   - The DBD(dbdbname1,dbdbname2) keyword indicates which databases to copy.
   - The INDEXES keyword indicates any indexes for the primary databases should be copied.
   - The DATAMOVER keyword indicates that IMS Cloning Tool should not do the copy operation.
   - The PRECOPY keyword indicates this IMS Cloning Tool invocation is in preparation for copying the database and index data sets. IMS Cloning Tool will generate a list of database and index data sets to copy from and to in the GCLCOPY DD.
What to do next

Step 3: Optional - Set up and run the Stop DB job (GCLDBSTP) to stop target IMS databases

One purpose of the GCLDBSTP job is to facilitate copying data sets outside of IMS Cloning Tool. The job is used to take the databases to be copied offline to the target or source IMS subsystems.

About this task

An example of the Stop DB JCL for this scenario can be found in the product SGCLJCL library member GCLDBSTP. Details for each step to setup this job and example follows.

Procedure

1. Identify the IMS control data sets for the target IMS subsystem.
2. Identify what IMS subsystem the target database to be stopped is on.
3. Identify the databases to stop in the GCLIN control data set.
4. Indicate whether indexes for the databases being stopped should be stopped as well. It is recommended that the indexes always be stopped when the primary database is stopped.
5. Indicate any additional options to use when issuing the IMS DBR command.
6. Indicate the maximum time IMS Cloning Tool should wait for the target databases to be taken offline. You must also indicate the return code to issue should the maximum wait time is exceeded.

Stop DB Job Example

For completeness and to illustrate where JCL parameters and IMS Cloning Tool control statements must match, the following JCL includes sample IMS Cloning Tool control statements. Complete command control statement syntax is documented in GCL.

The Stop DB job JCL is shown in the following example. The numbers preceding the JCL correspond to notes, (following this sample JCL) containing an explanation of the line of JCL.

```
//jobcard
+JOBPARM $=zossys
//
// Using GCL to DBR the databases on an IMS subsystem
// variables to be filled in ...
// jobcard - job card
// zossys - name of zOS image where the IMS subsystem is active
// hlq? - GCL LOAD library and PARMLIB high level qualifier
// ssid - IMS subsystem ID
//
1 //STEP1 EXEC PGM=GCL00010,REGION=0M
2 //STEPLIB DD DISP=SHR,DSN=hlq?.SGCLLOAD
//
3 //GCLINI DD DISP=SHR,DSN=hlq?.SGCLPARM(GCLINI)
//
4 //GCLPRINT DD SYSOUT=
//
//SYSUDUMP DD SYSOUT=
//ABNLIGNR DD DUMMY do not remove if using ABENDAID
```
Note: In this example, the following:

1. //STEP1 EXEC PGM=GCL00010,REGION=0M is the execution of IMS Cloning Tool main program.
2. The IMS Cloning Tool SGCLLOAD library declared in STEPLIB DD must be authorized.
3. GCLINI is the DD for the GCLINI member of SGCLPARM. The GCLINI member contains the product security license codes and program variables.
4. GCLPRINT displays GCLINI tokens, control parameters, data set names and messages showing the steps and status of the process to stop the databases.
5. ssidACB is the input data set that references the ACB library for the IMS subsystem.
6. ssidMDA is the input data set that references the MDA (dynamic allocation member) library for the IMS subsystem.
7. ssidRECx is the input data set that identifies the RECON data sets for the IMS subsystem.
8. The GCLIN statement defines the control statement input for IMS Cloning Tool.
9. The IMSDBSTOP command indicates to IMS Cloning Tool to stop a database or databases and possibly any indexes.
   - The IMS-SSID(ssid) keyword indicates the IMS subsystem ID where the database(s) should be stopped.
   - The DBD(dbdbname1,dbname2) keyword indicates which databases to stop.
   - The INDEXES keyword indicates any indexes for the primary databases should be stopped.
   - The GLOBAL keyword indicates the IMS DBR command should be issued with the GLOBAL option in order to stop the database on all IMS subsystems in a data sharing environment.
   - The NOFEOV keyword indicates the IMS DBR command should be issued with the NOFEOV option so that an automatic log switch is not done.
   - The WAIT keyword indicates that after issuing the IMS DBR command, IMS Cloning Tool should wait for up to two minutes for the database
to be offline. If any of the databases are not offline after the time limit specified, IMS Cloning Tool will end with the return code specified.

**Step 4: Set up and run the non-IMS Cloning Tool utility to copy the database and index data sets**
Employ the procedures and syntax appropriate for your chosen replication or slow copy tool.

If requested in the precopy job previously executed by the IMSDBREFRESH parameter PRECOPY, IMS Cloning Tool writes out a list of the source and target data set pairs to the GCLCOPY DD. This list can be parsed and used as input to the copy methodology of your choice.

A sample output:
`* 2007-12-15 11:56:36.7 JOBNAME=GCLPREC JOBID=J0044593
*       SOURCE SUBSYSTEM=IM91 TARGET SUBSYSTEM=IM92
*          DATABASE DATA SETS TO BE COPIED
*          SOURCE DATASET=IMS.IM91.DFSIVD1
              TARGET DATASET=IMS.IM92.DFSIVD1
*          SOURCE DATASET=IMS.IM91.DFSIVD1I
              TARGET DATASET=IMS.IM92.DFSIVD1I
*          SOURCE DATASET=IMS.IM91.DFSIVD2
              TARGET DATASET=IMS.IM92.DFSIVD2

Step 5: Optional - Set up and run the job to restart source IMS databases (GCLDBSTR)
One purpose of the GCLBSTRP job is to facilitate copying data sets outside of IMS Cloning Tool. The job is used to make the databases available to the source IMS subsystem after the copy process has completed.

**About this task**

The Start DB job is only needed if the target IMS subsystem is active on a different z/OS image than the source IMS subsystem. The job is used to make the databases online to the target IMS subsystem.

An example of the Start DB JCL for this scenario can be found in the product SGCLJCL library member GCLDBSTR. Details for each step to setup this job and example follows.

**Procedure**

1. Identify the IMS control data sets for the IMS subsystem.
2. Identify what IMS subsystem the database to start is on.
3. Identify the databases to stop to IMS Cloning Tool in the GCLIN control data set.
4. Indicate whether indexes for the databases being started, should be started as well.
5. Indicate any additional options to use when issuing the IMS STA command.
Start DB Job Example

For completeness and to illustrate where JCL parameters and IMS Cloning Tool control statements must match, the following JCL includes sample IMS Cloning Tool control statements. Complete command control statement syntax is documented in GCL.

The Start DB job JCL is shown in the following example. The numbers preceding the JCL correspond to notes, (following this sample JCL) containing an explanation of the line of JCL.

```
//jobcard
/*JOBPARM S=zossys
 /*
//*/
/* Using GCL to STA the databases on an IMS subsystem
/* variables to be filled in ...
/*
/* jobcard - job card
/* zossys - name of zOS image where the IMS subsystem is active
/* hlq? - GCL LOAD library and PARMLIB high level qualifier
/* ssid - IMS subsystem ID
/*
1 //STEP1 EXEC PGM=GCL00010,REGION=0M
2 //STEPLIB DD DISP=SHR,DSN=hlq?.SGCLLOAD
/*
3 //GCLINI DD DISP=SHR,DSN=hlq?.SGCLPARM(GCLINI)
/*
4 //GCLPRINT DD SYSOUT=* 
/*
//SYSUDUMP DD SYSOUT=* 
//ABNLIGNR DD DUMMY do not remove if using ABENDAID
/*
5 //ssidACB DD DISP=SHR,DSN=IMS.ssid.ACBLIB
6 //ssidMDA DD DISP=SHR,DSN=IMS.ssid.MDALIB
7 //ssidREC1 DD DISP=SHR,DSN=IMS.ssid.RECON1
//ssidREC2 DD DISP=SHR,DSN=IMS.ssid.RECON2
//ssidREC3 DD DISP=SHR,DSN=IMS.ssid.RECON3
//*******************************************************************************
/* sample control statements
 mktime control statements
*******************************************************************************
8 //GCLIN DD *
9 IMSDBSTART -
   IMS-SSID(ssid) -
   DBD(dbdname1,dbdname2) -
   INDEXES(Y) -
   GLOBAL
```

**Note:** In this example, the following:

1. //STEP1 EXEC PGM=GCL00010,REGION=0M is the execution of IMS Cloning Tool main program.
2. The IMS Cloning Tool SGCLLOAD library declared in STEPLIB DD must be authorized.
3. /GCLINI is the DD for the GCLINI member of SGCLPARM. The GCLINI member contains the product security license codes and program variables.
4. GCLPRINT displays GCLINI tokens, control parameters, data set names and messages showing the steps and status of the process to stop the databases.
5. ssidACB is the input data set that references the ACB library for the IMS subsystem.

6. ssidMDA is the input data set that references the MDA (dynamic allocation member) library for the IMS subsystem.

7. ssidRECx is the input data set that identifies the RECON data sets for the IMS subsystem.

8. The GCLIN statement defines the control statement input for IMS Cloning Tool.

9. The IMSDBSTART command indicates to IMS Cloning Tool to start a database or databases and possibly any indexes.
   - The IMS-SSID(ssid) keyword indicates the IMS subsystem ID where the database(s) should be started.
   - The DBD(dbdname1,dbdname2) keyword indicates which databases to start.
   - The INDEXES keyword indicates any indexes for the primary databases should be started.
   - The GLOBAL keyword indicates the IMS STA command should be issued with the GLOBAL option in order to start the database on all IMS subsystems in a data sharing environment.

What to do next

Step 6: Set up and run the Post copy job (GCLPOSTC)
The post copy job is comprised of a single step to make the target databases and indexes accessible on the target IMS subsystem. It will optionally start the target databases and indexes.

About this task

An example of the Post Copy job JCL for this scenario can be found in the product SGCLJCL library member GCLPOSTC. Details for each step to setup this job and example follows.

Procedure
1. Identify the IMS control data sets for the source IMS subsystem.
2. Identify the IMS control data sets for the target IMS subsystem. These DD control statements can be removed if the source and target IMS subsystem IDs are the same.
3. Identify the IMS DBDLIB for the target IMS subsystem.
4. Identify the source and target IMS subsystems.
5. Identify the databases that were copied to IMS Cloning Tool in the GCLIN control data set.
6. Indicate whether indexes for the databases were copied as well. It is recommended that the indexes always be copied when the primary database is copied.
7. Indicate whether the databases and indexes should be started on the target IMS subsystem after the information on the target IMS subsystems has been updated.
Post copy job example

For completeness and to illustrate where JCL parameters and IMS Cloning Tool control statements must match, the following JCL includes sample IMS Cloning Tool control statements. Complete command control statement syntax is documented in GCL.

The post copy job JCL is shown in the following example. The numbers preceding the JCL correspond to notes, (following this sample JCL) containing an explanation of the line of JCL.

```plaintext
//jobcard
/*
  /* Database refresh where:
  /* GCL was not used to perform copy operation
  /* variables to be filled in ...
  /*
  /*
  /// EXEC PGM=GCL00010,REGION=0M
  /// STEPLIB DD DISP=SHR,DSN=hlq?.SGCLLOAD
  ///
  /// GCLINI DD DISP=SHR,DSN=hlq?.PARMLIB(GCLINI)
  ///
  /// GCLPRINT DD SYSOUT=* 
  ///
  /// SYSUDUMP DD SYSOUT=* do not remove if using ABENDAID
  ///
  /// ssidsACB DD DISP=SHR,DSN=IMS.ssids.ACLLIB 
  /// ssidsMDA DD DISP=SHR,DSN=IMS.ssids.MDLIB
  /// ssidsREC1 DD DISP=SHR,DSN=IMS.ssids.RECON1 
  /// ssidsREC2 DD DISP=SHR,DSN=IMS.ssids.RECON2
  /// ssidsREC3 DD DISP=SHR,DSN=IMS.ssids.RECON3
  ///
  /// ssidtACB DD DISP=SHR,DSN=IMS.ssidt.ACLLIB
  /// ssidtMDA DD DISP=SHR,DSN=IMS.ssidt.MDLIB
  /// ssidtREC1 DD DISP=SHR,DSN=IMS.ssidt.RECON1 
  /// ssidtREC2 DD DISP=SHR,DSN=IMS.ssidt.RECON2
  /// ssidtREC3 DD DISP=SHR,DSN=IMS.ssidt.RECON3
  ///
  /// IMS DD DISP=SHR,DSN=IMS.ssidt.DOBLIB
  ///
  /// DBRCIN DD DISP=SHR,DSN=hlq2?.DBRCOUT(dbrcinfo)
  ///
  /// IMSDBREFRESH -
  /// IMS-SSID(ssids,ssidt) -
  /// DBD(dbdbname1,dbdbname2) -
  /// INDEXES(Y) -
  /// DATA-MOVER(PGM(NONE)) -
  /// AUTO-START-TARGET-DB(Y) -
  /// POSTCOPY
```
Note: In this example, the following:

1. //STEP1 EXEC PGM=GCL00010,REGION=0M is the execution of IMS Cloning Tool main program.
2. The IMS Cloning Tool SGCLLOAD library declared in STEPLIB DD must be authorized.
3. GCLINI is the DD for the GCLINI member of SGCLPARM. The GCLINI member contains the product security license codes and program variables.
4. GCLPRINT displays GCLINI tokens, control parameters, data set names and messages showing the steps and status of the process to stop the databases.
5. ssidsACB is the input data set that references the ACB library for the source IMS subsystem.
6. ssidsMDA is the input data set that references the MDA (dynamic allocation member) library for the source IMS subsystem.
7. ssidsREC1 is the input data set that identifies the RECON data sets for the source IMS subsystem.
8. ssidtACB is the input data set that references the ACB library for the target IMS subsystem. This DD should be removed if the source and target IMS subsystems are the same.
9. ssidtMDA is the input data set that references the MDA (dynamic allocation member) library for the target IMS subsystem. This DD should be removed if the source and target IMS subsystems are the same.
10. ssidtRECx is the input data set that identifies the RECON data sets for the target IMS subsystem. This DD should be removed if the source and target IMS subsystems are the same.
11. IMS is the target IMS subsystem DBD library. This DD is needed to invoke DBRC to update database and index information in the target IMS RECON data sets.
12. DBRCIN defines the DBRC information that was generated from the PRECOPY step. This data set is only needed if the source ACB, MDA, and RECON data sets are not available to the POSTCOPY job. It also requires that the PRECOPY job was run with a DBRCOUT DD statement.
13. The GCLIN statement defines the control statement input for IMS Cloning Tool.
14. The IMSDBREFRESH command indicates to IMS Cloning Tool which database or databases and possibly any indexes to update.
   - The IMS-SSID(ssid) keyword indicates the source and target IMS subsystems. If the source and target IMS subsystem IDs are the same, the target subsystem can be omitted.
   - The DBD(dbdbname1,dbdbname2) keyword indicates which databases to update.
   - The INDEXES keyword indicates any indexes for the primary databases should be updated.
   - The DATA-MOVER keyword indicates that IMS Cloning Tool did not do the copy operation.
   - The AUTO-START-TARGET-DB parameter can be used to have IMS Cloning Tool issue the IMS STA command after the target DBs have been made accessible.
The POSTCOPY keyword that indicates this IMS Cloning Tool invocation is after the copying the database and index data sets has completed. IMS Cloning Tool will update the information for the target databases and indexes on the target IMS subsystem.

## Refreshing IMS databases

This chapter describes different methods for copying databases and indexes from one IMS subsystem to another using IMS Cloning Tool. The following procedures provide for various situations, such as the data set copy methodology used to copy the databases and indexes.

Choose the appropriate procedure for your situation.

- Copy Procedure 1: FlashCopy/SnapShot setup
  - Using FlashCopy or SnapShot to copy source databases and indexes to the target IMS subsystem.
- Copy Procedure 2: All other copy methodologies on page 115
  - Use this procedure when copy methodologies other than FlashCopy or SnapShot are used to copy source databases and indexes to the target IMS subsystem.

### Copy Procedure 1: FlashCopy/SnapShot setup

Use the following procedure to copy the source databases and indexes to the target IMS subsystem when using FlashCopy or SnapShot.

The following table lists the steps that are necessary to set up FlashCopy/SnapShot to copy the source databases and indexes to the target IMS subsystem.

<table>
<thead>
<tr>
<th>Table 18. FlashCopy/SnapShot Setup Overview</th>
</tr>
</thead>
<tbody>
<tr>
<td>FlashCopy/SnapShot Set Up Steps</td>
</tr>
<tr>
<td>“Step 1: Verify or create the target IMS databases in the target subsystem”</td>
</tr>
<tr>
<td>“Step 2: Optional – Submit the Stop DB job”</td>
</tr>
<tr>
<td>“Step 3: Submit the Copy job” on page 115</td>
</tr>
<tr>
<td>“Step 4: Optional – Submit the Start DB job” on page 115</td>
</tr>
</tbody>
</table>

### Step 1: Verify or create the target IMS databases in the target subsystem

Ensure that the target IMS databases and indexes are defined to the target IMS subsystem. If the databases currently are not defined to the target IMS subsystem, they must be defined prior to running the IMS Cloning Tool jobs to copy the data from another database of an IMS subsystem.

- The DMBs that define any database to be cloned must exist or be created in the target IMS ACBLIB.
- A dynamic allocation member must be defined in the target IMS MDALIB.
- The database, areas (if FP DEDB), partitions (if HALDB), and data sets must be defined to DBRC if the database will be registered to DBRC.
- The DMB, MDA, and DBRC definitions must be created for any indexes to be copied.

### Step 2: Optional – Submit the Stop DB job

This job is only necessary if the source and target IMS subsystems are on different z/OS systems and the target databases and indexes must be stopped.
The IMS DBR DB commands to stop the target databases and indexes must be issued from the same z/OS system where the target IMS subsystem is running so the Stop DB job must be executed on the same z/OS system.

**Step 3: Submit the Copy job**
The copy job does the following:
- Connects to the source IMS subsystem
- Selects the databases and indexes to be replicated from the source IMS subsystem
- Confirms the existence and compatibility of the target databases and indexes
- Stops the source and target databases and indexes. If the target IMS subsystem is on a different z/OS system, then IMS Cloning Tool verifies they are stopped
- Invokes FlashCopy or SnapShot (if available) to replicate the data sets
- Starts the source databases and indexes
- Updates control information for the target databases and indexes
- Starts the target databases and indexes if the target IMS subsystem is in the same Z/OS system

**Step 4: Optional – Submit the Start DB job**
The Start DB job must run on the same z/OS system as the target IMS subsystem. The Start DB job is used to optionally restart the target IMS databases and indexes to make them accessible to IMS.

This completes the database cloning process.

**Copy Procedure 2: All other copy methodologies**
Use the following procedure if you want to copy the source table spaces and index spaces to the target IMS subsystem when you are using a method other than FlashCopy or SnapShot.

The following table lists the steps that are necessary to set up all other copy methodologies to copy the source databases and indexes to the target IMS subsystem.

<table>
<thead>
<tr>
<th>Table 19. Other Methodologies Setup Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Other Methodologies Setup Overview</strong></td>
</tr>
<tr>
<td>&quot;Step 1: Verify or Create the target IMS databases in the target subsystem&quot;</td>
</tr>
<tr>
<td>&quot;Step 2: Submit the precopy job&quot; on page 116</td>
</tr>
<tr>
<td>&quot;Step 3: Optional - Submit the job GCLDBSTP to stop the target IMS databases&quot; on page 116</td>
</tr>
<tr>
<td>&quot;Step 4: Run the non-IMS Cloning Tool utility to copy the database and index data sets&quot; on page 116</td>
</tr>
<tr>
<td>&quot;Step 5: Optional - Submit the job GCLDBSTR to start the source IMS databases&quot; on page 116</td>
</tr>
<tr>
<td>&quot;Step 6: Submit the post-copy job GCLPOSTC to update and start the source and target databases&quot; on page 117</td>
</tr>
</tbody>
</table>

**Step 1: Verify or Create the target IMS databases in the target subsystem**
This step is part of the larger task of copying the source table spaces and index spaces to the target IMS subsystem when you are using a method other than...
FlashCopy or SnapShot. Ensure that the target IMS databases and indexes are defined to the target IMS subsystem. If the databases currently are not defined to the target IMS subsystem, they must be defined prior to running the IMS Cloning Tool jobs to copy the data from another database of an IMS subsystem.

- The DMBs that define any database to be cloned must exist or be created in the target IMS ACBLIB
- A dynamic allocation member must be defined in the target IMS MDALIB
- The database, areas (if FP DEDB), partitions (if HALDB), and data sets must be defined to DBRC if the database will be registered to DBRC
- The DMB, MDA, and DBRC definitions must be created for any indexes to be copied

**Step 2: Submit the precopy job**

This step is part of the larger task of copying the source table spaces and index spaces to the target IMS subsystem when you are using a method other than FlashCopy or SnapShot.

When the COPY command keyword DATA-MOVER(PGM(NONE) is specified, it is assumed that the copy will be done outside of IMS Cloning Tool. IMS Cloning Tool still determines the source and target IMS subsystems, extracts from the source IMS subsystem characteristics for the databases and indexes to be cloned, and confirms the existence of the target database and index definitions. It also checks for incompatibilities between source and target databases and indexes.

To assist the user, IMS Cloning Tool writes the list of source and target data set names on a data set. This information can be used to prepare the non-IMS Cloning Tool copy job.

**Step 3: Optional - Submit the job GCLDBSTP to stop the target IMS databases**

This step is part of the larger task of copying the source table spaces and index spaces to the target IMS subsystem when you are using a method other than FlashCopy or SnapShot.

Existing target databases and indexes must be stopped so that IMS will deallocate the database data sets. This allows them to be replaced.

**Step 4: Run the non-IMS Cloning Tool utility to copy the database and index data sets**

This step is part of the larger task of copying the source table spaces and index spaces to the target IMS subsystem when you are using a method other than FlashCopy or SnapShot.

Any hardware or software replication utility can be used.

**Step 5: Optional - Submit the job GCLDBSTR to start the source IMS databases**

This step is part of the larger task of copying the source table spaces and index spaces to the target IMS subsystem when you are using a method other than FlashCopy or SnapShot.

Once the data sets are replicated (copied) the source databases and indexes are no longer needed by the cloning process. This step is only needed if the POSTCOPY job will run on a different LPAR than the source IMS.
**Step 6: Submit the post-copy job GCLPOSTC to update and start the source and target databases**

This step is part of the larger task of copying the source table spaces and index spaces to the target IMS subsystem when you are using a method other than FlashCopy or SnapShot.

The post-copy job must run on the same z/OS system as the target IMS. The post-copy job updates information for the target database and index data sets in the target IMS subsystem to make them accessible to IMS. The post-copy job can then restart the source and target databases and indexes in the target IMS subsystem.

This completes the database cloning process.
Chapter 5. Using the ISPF interface

IMS Cloning Tool offers an ISPF interface that allows you to create subsystem and table space cloning jobs using interactive panels. The topics in this section describe how to use the ISPF interface for IMS Cloning Tool.

The IMS Cloning Tool ISPF interface

You can use the IMS Cloning Tool ISPF interface to create the JCL and control cards required to clone IMS subsystems and to refresh databases and index spaces. The menu-driven interface allows you to easily create cloning jobs with specific command parameters, and then save that information in profiles that can be used again. In addition, subsystem information can be configured once and then is available to all users of the interface.

Starting the interface

Note: Before attempting to use the ISPF interface, ensure that configuration steps in the Configuration chapter have been completed.

Start the interface using the provided CLIST by using the command TSO GCL on the command line.

The IMS Cloning Tool Primary Option Menu

The IMS Cloning Tool Primary Option Menu is the starting point for all cloning functions. The Primary Option Menu, shown in the following figure, is displayed when you start the IMS Cloning Tool ISPF interface.

<table>
<thead>
<tr>
<th>Option</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>User settings</td>
</tr>
<tr>
<td>1</td>
<td>Clone</td>
</tr>
<tr>
<td>2</td>
<td>Administrator functions</td>
</tr>
<tr>
<td>X</td>
<td>Exit</td>
</tr>
</tbody>
</table>

From the Primary Option Menu, you can perform the following actions by entering the corresponding option number in the Option field and pressing Enter:

0 - User settings
Select this option to specify defaults for command parameters, work data sets, other settings for both subsystem cloning and table space cloning. These defaults are used for creating cloning profiles.

1 – Clone
Select option 1 to create cloning profiles for subsystem or table space cloning.

2 – Administrator functions
Select option 2 to add or configure IMS subsystems to be used as source and targets for the cloning process. IMS subsystems should be configured before creating cloning profiles.
X – Exit
   Select this option to exit the ISPF interface.

About cloning profiles

All the settings required to build the jobs for subsystem cloning and database
refreshing are saved in VSAM profiles. You can create profiles that can be shared
with other users, or you can specify that profiles be read-only or completely
inaccessible by others.

About the ISPF help system

ISPF help panels are available. The help panels list the purpose of the panel,
available commands, and fields and column data that is displayed. Enter HELP or
press PF1 to display a help panel.

Detailed information about command parameters and other valid values on the
panels are listed in the help panels. Except for configuring user settings, the panel
values are not described in detail in these topics. Use the help system or the
command reference topics that follow if you need more information.

- Chapter 8, “Reference: IMS Cloning Tool Commands,” on page 185
- Chapter 9, “Reference: Database refresh commands,” on page 267

Configuring IMS subsystems

The Administrator functions option on the Primary Option Menu allows you to
configure all IMS subsystems that might be used by subsystem or cloning database
refreshing procedures.

You must define the IMS subsystem information for your site on these panels
before attempting to create subsystem or database refresh jobs.

Enter 2 on the IMS Cloning Tool Primary Option Menu menu to access
administrator functions. The Administrator functions panel is displayed, as show
in the following figure:

<table>
<thead>
<tr>
<th>IMS Cloning Tool</th>
<th>Administrator functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option ====&gt;</td>
<td></td>
</tr>
<tr>
<td>1 DB2 subsystems</td>
<td></td>
</tr>
<tr>
<td>2 IMS subsystems</td>
<td></td>
</tr>
</tbody>
</table>

Configuring a subsystem

To create a new subsystem or configure a subsystem that you have already created,
follow these steps.

Procedure

1. On the Administrator functions menu, enter option 1, IMS subsystems.
2. On the IMS subsystems panel, enter C in the Command field. The Enter New
   IMS Subsystem Profile Options window is displayed.
3. On the Enter New IMS Subsystem Profile Options window, enter the IMS
   subsystem ID.
4. Press Enter. The Edit IMS Subsystem panel is displayed.
5. Optional: In the **Description** field, enter a description of the IMS subsystem.

6. Specify started task member names for the subsystem being defined.

7. If the subsystem will be used for subsystem cloning, enter 1 in the Option line to specify information required for cloning IMS subsystems and press Enter.

**Specifying information for subsystem cloning**

To successfully generate JCL that uses this subsystem as a target for subsystem cloning jobs, you must provide the information for the subsystem.

Refer to the product help panel for more detailed information about the fields on this panel.

Enter 1 on the Edit IMS Subsystem menu. The Subsystem cloning information panel is displayed, as shown in the following figure:

```
Use those commands to define/view concatenated data set list.

Commands: R - Set IMS RESLIB  A - Set IMS ACBLIB  P - Set PROCLIB/JCL
          C - Set IMS MACLIB  M - Set IMS MDALIB  D - Set IMS RDDS
          L - Set IMS DBDLIB  RI - Set IMSRSC INDEX  RM - Set IMSRSC MEMBER

SSID ............:
Description ::
Use as Subsystem Cloning Source or Target only . . (SOURCE, TARGET, or blank)
System ID where this IMS normally runs . .
Group name ................ TSTGRP2 (if data sharing)
IMS-SUFFIX ........... 0
IMSPLEX ................
DBRCGRP .............
XRF-CAPABLE ........... (YES, NO, or blank)
RSENAME .............
IMS RDS data set name ....
IMS RDS2 data set name ....
IMS MODBLKS data set name ....
IMS MODBLKSA data set name ....
IMS MODSTAT data set name ....
IMS MODSTAT2 data set name ....
IMS RECON1 data set name ....
IMS RECON2 data set name ....
IMS RECON3 data set name ....
IMS RESLIB data set names ....
IMS ACBLIB data set names ....
IMS MACLIB data set names ....
PROCLIB/JCL data set names ....
IMS MDALIB data set names ....
IMS RDDS data set names ....
IMS DBDLIB data set names ....
IMS RSC Index data set names ....
IMS RSC Member data set names ....
```

**Configuring user settings**

The User Settings option on the Primary Option Menu allows you to specify defaults that are used when creating profiles. Defaults can be set for commands, work data sets, and job cards for both cloning subsystems and refreshing databases.

Defaults are originally derived from the GCLINI PARMLIB member, but can be customized for each user ID using these panels. The defaults are saved in ISPF.
profiles and are specific to each TSO user ID. This allows different users to have different defaults when creating cloning profiles.

Enter 0 on the IMS Cloning Tool Primary Option Menu to access user options. The User Settings panel is displayed, as shown in the following figure:

<table>
<thead>
<tr>
<th>GCLUSERT</th>
<th>User Settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option ====&gt;</td>
<td></td>
</tr>
<tr>
<td>0 User Options</td>
<td></td>
</tr>
<tr>
<td>1 User DB2 subsystem clone settings</td>
<td></td>
</tr>
<tr>
<td>2 User DB2 tablespace clone settings</td>
<td></td>
</tr>
<tr>
<td>3 User IMS subsystem clone settings</td>
<td></td>
</tr>
<tr>
<td>4 User IMS database refresh settings</td>
<td></td>
</tr>
</tbody>
</table>

Setting user defaults (job card and work data sets)
Follow these steps to set general defaults settings that apply to both subsystem clone and database refresh. These include a default job card and default work volumes.

Procedure
1. Enter 0 on the User Settings menu to access user options. The Set Processing Options menu is displayed.
2. On the Set Processing Options panel, enter 1 to specify job card options and press Enter. The Set Batch Job Card Information panel is displayed.
3. Enter job card information for your site.
4. Press PF3 (END) to return to the Set Processing Options panel.
5. On the Set Processing Options panel, enter 2 in the Option field and press Enter. The User Options panel is displayed.
6. Enter default values for the work unit and work volume unit. Press PF3 (END) when you are finished.

Setting subsystem cloning defaults
This topic describes how to specify defaults for subsystem cloning commands and work data sets.

Defaults are originally derived from the GCLINI PARMLIB member, but can be customized for each user ID using these panels. These defaults are then saved in ISPF profiles and are specific to each TSO user ID. This allows different users to have different defaults when creating cloning profiles.

Enter 3 on the User Settings menu to access subsystem cloning defaults. The User IMS subsystem clone settings panel is displayed, as shown in the following figure:
Subsystem clone profile default values

Prefix for work data sets
Enter the prefix you would like to use for work data sets that might be needed when cloning an IMS subsystem.

Work data sets unit device
Enter a valid unit device that will hold the work data sets.

Command defaults
To set default values for each command, enter the appropriate number for the command in the Option field.

COPY command defaults
COPY invokes volume copies via FlashCopy or SnapShot if the DATA-MOVER(PGM(ADRDSSU)) is specified, or invokes volume copies via TimeFinder/Clone mainframe SNAP Facility if the DATA-MOVER(PGM(EMCSNAP)) is specified.

The following values can be set on the subsystem cloning COPY command defaults panel. These values are used strictly as defaults for COPY command parameters when you are creating a new subsystem cloning profile. The parameter values can later be edited in the profile.

TARGET-VOLS-SHOULD-BE-EMPTY
Specify whether a check should be performed during the volume pairing process to ensure the target volumes are empty before issuing FlashCopy or SnapShot. In the event a subsequent RENAME fails and the COPY must be rerun, the target volumes will not be cleaned off if YES was specified for this parameter. Either initialize the target volumes or change this field to NO.

CATWORK-DSN Mask
Specify a mask to be used to derive data set names for catalog backup data sets dynamically allocated during the COPY step. The mask must include an asterisk (*) as one qualifier. Data sets will be created by substituting two eight-byte qualifiers in place of the provided asterisk. Hence, because 17 bytes (8 the dot 8) of the name will be generated, you are responsible for the resolved names not exceeding 44 characters.

For example, a CATWORK-DSN mask of SITENAME.ABC.CATWORK.* will cause data sets to be created such as:
SITENAME.ABC.CATWORK.UCATBKUP.BKP00001
The asterisk in the mask does not need to be the lowest level qualifier. For example, a CATWORK-DSN mask of SITENAME.ABC.CWORK.*.DATA is valid.

**CATWORK-ATTR**

Specify the allocation attributes used when catalog backup data sets are dynamically allocated. Allocation attributes are specified in TSO allocate syntax (e.g., UNIT(SYSDA) SPACE(1 1) TRACKS, etc.). The attributes that can be specified are:

- DATACLAS(data class name)
- MGMTCLAS(management class name)
- SPACE(quantity increment)
- STORCLAS(storage class name)
- TRACKS/CYLINDERS
- UNIT(unit)
- VOLUME(serial)

If an initial attempt running COPY fails because a catalog backup data set exceeds extents, increase the allocation and run again. Once successful, examine the space actually used and decrease if desired. To accommodate a future increase in the size of catalogs, leave the allocation with room to spare.

**COPYCHECK command defaults**

COPYCHECK provides a mechanism to either wait for copies to complete, or to terminate previously established volume relationships.

The following values can be set on the subsystem cloning COPYCHECK command defaults panel. These values are used strictly as defaults for COPYCHECK command parameters when you are creating a new subsystem cloning profile. The parameter values can later be edited in the profile.

**WAIT time**

Specify the maximum time in minutes that COPYCHECK should continue checking at 30-second intervals to see if copy relationships have completed for all volume copies initiated in a corresponding COPY step.

**WAIT RC**

Specify the return code to be used if the specified time limit expires before all copies are complete and COPYCHECK terminates.

**RENAME command defaults**

The RENAME command renames and catalogs the data sets from the COPY command onto target volumes.

The following values can be set on the subsystem cloning RENAME command defaults panel. These values are used strictly as defaults for RENAME command parameters when you are creating a new subsystem cloning profile. The parameter values can later be edited in the profile.

**EXCLUDE-SRCNAME**

This default setting specifies the return code that will be given for data sets that match entries in the EXCLUDE-SRCNAME-MASKS keyword. 0 specifies that a return code of zero will be given for data sets that match entries in the EXCLUDE-SRCNAME-MASKS keyword.

NOTRENAMED-RC specifies that the RC specified in the NOTRENAMED keyword will be given for data sets that match entries in the EXCLUDE-SRCNAME-MASKS keyword. Using RC(0) addresses the
situation where there are known data sets on the volumes that will not be renamed and it is desired to use NOTRENAME(RC(8)) to know if some not known data sets are on the volumes.

**GDG-ALL-MIGRATED**

*GDG-ALL-MIGRATED RETAIN® RC*

These default settings support DFSMSshm, FDR, and CADisk. GDG-ALL-MIGRATED addresses the situation where a GDG matches a RENAME mask and all the source generations have been migrated. Specify SKIP to skip the migrated GDG entry. Specify RETAIN to keep the GDS entries in the GDG base record. If you enter RETAIN, enter a corresponding return code of 0 or 4 in the GDG-ALL-MIGRATED RETAIN RC field.

**Note:** If RETAIN is used, because the migrated generations do not exist under the new name, subsequent access to the generations will fail whether one is accessed specifically or via specification of the base name only. This option is provided to retain relativity.

**GDG-EMPTY**

*GDG-EMPTY RETAIN RC*

These default settings address an empty base GDG that matches a RENAME mask. In the GDG-EMPTY field, enter SKIP to skip GDG entry, or enter RETAIN to add the new base entry to the target user catalog. If you specify RETAIN, enter a corresponding return code of 0 or 4 in the GDG-EMPTY RETAIN RC field.

**GDG-MIGRATED**

*GDG-MIGRATED RETAIN RC*

These default settings address the situation where a GDG matches a rename mask and at least one generation is indeed found on a volume, yet one or more generations are migrated. If you want to treat the migrated generation as an error, enter ERROR in the GDG-MIGRATED field. To keep the GDS entry in the GDG base record, enter RETAIN. If you enter RETAIN, enter a corresponding return code of 0 or 4 in the GDG-MIGRATED RETAIN RC field.

**Note:** If RETAIN is used, because the migrated generation does not exist under the new name, subsequent access to the generation will fail whether it is accessed specifically or via specification of the base name only.

**GDG-TAPE**

*GDG-TAPE RETAIN RC*

These settings address the situation where a GDG matches a rename mask and at least one generation is indeed found on a volume, yet one or more generations are on tape. To treat the tape generation as an error, enter ERROR in the GDG-TAPE field. To keep the GDS entry in the GDG base record, enter RETAIN. If you enter RETAIN, enter a corresponding return code of 0 or 4 in the GDG-TAPE RETAIN RC field.

**Note:** If RETAIN is specified, accessing a target tape GDS will cause a S813 ABEND whether it is accessed specifically or via specification of the base name only. To avoid destroying the relativity of active generations, removing selected generations is not allowed. Retaining non-existent tape generations may be suitable for situations such as overstated GDG limits where older generations may have been created on tape.
ISSUE-VCLOSE
Specify whether a catalog modify command, F
CATALOG,VCLOSE(targetvolser), will be issued as part of the volume
RENAME processing. The Catalog Address Space (CAS) caches VVDS
information. The modify command requests that the VVDS information
cached for the target volume be refreshed. NO specifies that the modify
command will NOT be issued. BEFORE specifies that the modify
command will be issued only before the VVDS is updated. AFTER specifies
that the modify command will be issued only after the VVDS has been
updated. YES specifies that the modify command will be issued both
before the VVDS is updated and after the VVDS has been updated.

ISSUE-VCLOSE SCOPE
If you specify ISSUE-VCLOSE of BEFORE, AFTER, or YES, specify the
scope of the modify command. Enter LOCAL to have the catalog modify
command, F CATALOG,VCLOSE(targetvolser), issued only on the system
that RENAME is running on. Enter SYSPLEX to have the catalog modify
command, F CATALOG,VCLOSE(targetvolser), issued on the local system;
the modify command will also be routed to all the other systems in the
sysplex, via an MVS ROUTE *OTHER command, after the VVDS has been
updated.

MAX-TASKS
Specify the maximum number of subtasks to be used for volume
processing in the RENAME step. The maximum allowed value is 255. At
some point, increasing the number of subtasks will cease to increase
performance, due to resource contention. Specifying a value that is too
large may result in termination due to memory constraints.

MISSINGUCAT
Specify the disposition of target volume data sets where the VVDS catalog
back-pointer is not a catalog in the list supplied to the COPY step.

MISSINGUCAT RC
Specify the return code to be generated for the RENAME command if one
or more target volume data sets contain a VVDS catalog back-pointer not
in the list supplied to the COPY step.

NOTRENAME
Specify the disposition of target volume data sets that are not renamed
because they do not match a rename mask.

NOTRENAME RC
Specify the return code to be generated for the RENAME command if one
or more target volume data sets are not renamed because they do not
match a rename mask.

ORPHANCATENTRY
Specify the disposition of target volume data set catalog entries where in
some circumstances the data set is not found on the volume.

ORPHANCATENTRY RC
Specify the return code to be generated for the RENAME command if one
or more target volume data set catalog entries do not have a corresponding
volume data set.

RECATALOG
Specify YES to replace catalog entries encountered when cataloging target
volume data sets.
RENAM-AUDIT-LOG
Enter YES to specify that an audit log of the data sets being renamed is to be created by RENAME volume processing.

RENAM-AUDIT-LOG SMF
If you specified YES in the RENAME-AUDIT-LOG field, enter the record type in this field. Valid values are 128 through 255 inclusive. SMF must be recording the specified record type. The layout of the records written can be found in member GCLRNSMF of the IMS Cloning Tool JCL library.

RENAM-ERROR
This option specifies how processing proceeds when a RENAME error is encountered. Enter ABORT to terminate with an RC=8 after the first error to preserve integrity. ABORT is recommended. Enter CONTINUE to continue processing after most errors; the RENAME command will complete with the specified return code unless an error not handled by the CONTINUE logic is encountered.

CAUTION:
The use of CONTINUE can cause inconsistencies between the contents of the volumes and catalogs. If CONTINUE is specified, IMS Cloning Tool will not guarantee integrity and the given results will not be fixed by IMS Cloning Tool.

RENAM-ERROR CONTINUE RC
Specify the return code to be used if RENAME-ERROR CONTINUE is specified.

RENAM-LIST
Specify whether a list of the renamed data sets is to be produced by RENAME volume processing.

RENAM TYPE
Enter SAFE to allow a rerun of the RENAME command by backing up critical volume structures that are changed during the volume processing - the VTOC, VTOCIX, and VVDS. This backup data is used on a rerun to restore any volumes changed to the state they were in following the COPY step. This adds some slight execution time for RENAME to capture the portions of target volumes modified by RENAME. Incorrect rename masks may be a reason for needing to rerun the RENAME step. If multiple and complicated masks are required, this option is recommended. Also affecting the renaming is whether the data set naming conventions used by the application are fairly static or subject to frequent change - inferring that rename masks need to be watched.

To specify SAFE, you must also specify a DD name in the VOLBKUP-DDN field. The VOLBKUP data set must not be deleted before a rerun of RENAME. If the VOLBKUP data set is lost, the COPY step will need to be run again, provided that the opportunity for correct point-in-time images has not been lost.

If source volume access is not resumed until the entire process is complete (implying that the same point-in-time images can be re-copied), the time to rerun the COPY step may be insignificant compared to adding some overhead with the SAFE option for every cycle.

SPEED is the opposite of SAFE. The RERUN option for the RENAME step will be rejected if attempted. Correction of any errors will require the COPY and RENAME step to be run again.
TEMPDSN
Specify the disposition of temporary data sets found on target volumes.

TEMPDSN RC
Specify the return code to be generated for the RENAME command if one or more temporary data sets are found on target volumes.

UPDATE-IAM-ASSOCIATIONS
Specify whether IAM data set associations are to be updated as part of RENAME processing. IAM must be active on the system for the updates to happen. This option addresses the situation where there are IAM data sets that are being cloned that include AIXes and PATHs, and it is desired to update the associations to correspond with the new data set names. The association information for IAM data sets will be determined and updated by internally using IDCAMS LISTCAT and IDCAMS DEFINE RECATALOG commands.

VALIDATE-SMS-CLASSES
Specify whether the SMS class names specified in the DATACLAS, DATACLAS-PAIRS, MGMTCLAS, MGMTCLAS-PAIRS, STORCLAS, and STORCLAS-PAIRS keywords will be validated as being defined to SMS (YES) or not (NO). This option addresses the situation where the target SMS class names are not defined on the system where RENAME is run.

VOLBKUP-DDN
Specify the DD name for the backup data set to be used for backing up target volume VTOCs, VTOCIXs, and VVDSs, to be used in the event of a rerun of the RENAME step. You must also enter SAFE in the RENAME TYPE field to use this parameter.

IMSSTART command defaults
The IMSSTART command is used to start an IMS subsystem, via a z/OS START command, as part of cloning an IMS subsystem.

The following values can be set on the subsystem cloning IMSSTART command defaults panel. These values are used strictly as defaults for IMSSTART command parameters when you are creating a new subsystem cloning profile. The parameter values can later be edited in the profile.

IMS-ALREADY-RUNNING RC
Specify the return code that will be used if the IMS subsystem is already running.

WAIT TIME
Enter the maximum time in minutes that IMSSTART should wait for the IMS subsystem to start.

WAIT RC
Enter the return code to be used if the specified time limit expires before the IMS subsystem has started.

RESTART-CMD
Specify the IMS restart command and restart options to be issued during the restart of the IMS subsystem. The value issued during the restart of the IMS subsystem. The value entered for the RESTART-CMD is the exact value used when issuing the command to IMS. The IMS RESTART command and options are defined in the IMS Command Reference Guide.

STARTCMD
Enter the command to be used to when starting the IMS subsystem.
STARTIRLM
This optional keyword indicates that the IRLM address space should be
started by the IMSSTART command. Supply the command and parms to
start the associated IRLM address space.

STARTCSL
This optional keyword indicates that the CSL (Common Service Layer)
address space should be started by the IMSSTART command. Supply the
command and parms to start the associated SCI address space.

STARTCQS
This optional keyword indicates that the CQS (Common Queue Server)
address space should be started by the IMSSTART command. Supply the
command and parms to start the associated CQS address space.

STARTODBM
This optional keyword indicates that the ODBM (Open Database Manager)
address space should be started by the IMSSTART command. Supply the
command and parms to start the associated ODBM address space.

STARTOM
This optional keyword indicates that the OM (Operations Manager)
address space should be started by the IMSSTART command. Supply the
command and parms to start the associated OM address space.

STARTRM
This optional keyword indicates that the RM (Resource Manager) address
space should be started by the IMSSTART command. Supply the command and parms to start the associated RM address space.

STARTRS
This optional keyword indicates that the RS (Repository Server) address
space should be started by the IMSSTART command. Supply the command and parms to start the associated RS address space.

WAITONLY
This optional keyword indicates that the command to start any of the IMS
address spaces will not be used by this job step. The job step will only
verify that the IMS address spaces are active, or wait until the IMS address
spaces have been manually started.

IMSSTOP command defaults
The IMSSTOP command is used to stop an IMS subsystem, via the IMS /CHE
command, as part of cloning a IMS subsystem.

The following values can be set on the subsystem cloning IMSSTOP command
defaults panel. These values are used strictly as defaults for IMSSTOP command
parameters when you are creating a new subsystem cloning profile. The parameter
values can later be edited in the profile.

IMS-ALREADY-STOPPED RC
Specify the return code that will be used if the IMS subsystem is already
stopped.

MODE
Specify the MODE value to determine the IMS shutdown variation. An
IMS /CHECKPOINT command will be issued with the specified mode as the
parameter. If DUMPQ is specified, and the subsystem is a DBCTL
system, the command with the default option of PURGE will be used.
WAIT Specify the number of minutes that the IMSSTOP command should wait for the IMS subsystem to complete termination. If the time limit expires before the IMS termination has completed, IMSSTOP will terminate with the return code specified in WAIT RC.

WAIT RC Enter the return code to be used if the specified time limit expires before the IMS subsystem has stopped.

STOPIRLM Optional keyword that will stop the IRLM address space after the IMS subsystem has terminated.

STOPCSL Optional keyword that will stop the CSL address spaces after the IMS subsystem has terminated. If LOCAL is specified, the address spaces associated with the CSL on a single z/OS image. Specify PLEX as the second parameter for this keyword if all CSL addresses with an IMSplex are to be shut down.

STOPCQS Optional keyword that will stop the CQS (Common Queue Server) address space after the IMS subsystem has terminated.

STOPODBM This optional keyword indicates that the ODBM (Open Database Manager) address space should be started by the IMSSTART command. Supply the command and parms to start the associated ODBM address space.

STOPOM Optional keyword that will stop the ODBM (Open Database Manager) address space after the IMS subsystem has terminated.

STOPRM Optional keyword that will stop the RM (Resource Manager) address space after the IMS subsystem has terminated.

STOPRS Optional keyword that will stop the RS (Repository Server) address space after the IMS subsystem has terminated.

WAITONLY Optional keyword that indicates that the command to shut down any of the IMS address spaces will not be used. Only verify that the IMS address spaces are not active, or wait until the IMS address spaces have been manually stopped.

IMSUPDATE command defaults
The IMSUPDATE command is used to make some of the changes within IMS to reflect the data sets that are renamed during a subsystem cloning.

The following values can be set on the subsystem cloning IMSUPDATE command defaults panel. These values are used strictly as defaults for IMSUPDATE command parameters when you are creating a new subsystem cloning profile. The parameter values can later be edited in the profile.

ACB-NOT-FOUND RC Optional keyword that supplies the return code to be used if a DMB is not found in the ACBLIB for any database defined to an IMS subsystem.

DSNAME-ERROR-DBRC-SYMBOLS Optional keyword that specifies the action to take when a resulting target
data set name is more than the allowable 44 characters and the data set names contain DBRC symbolic keywords. ERROR indicates that this condition will cause an error message to be displayed and the data set name will not be updated. WARN indicates that this condition will cause a warning message to be displayed but the data set name will still be updated. IGNORE indicates that this condition will not trigger a message and the data set name will be updated.

**NOT-RENAMED-JCLPDS-LIST**
Optional keyword that specifies whether IMSUPDATE JCLPDS processing produces a list of the data sets not renamed.

**MDA-NOT-UPDATED RC**
Optional keyword that specifies the return code to be used if any member of the MDALIB data sets, for a database defined to the source IMS subsystem, contained a data set name that did not match a source data set name.

**RDDS-NOT-UPDATED RC**
Optional keyword that specifies the return code to be used if any of the RDDS data sets contained an SSID that did not match a source SSID.

**RECON-NOT-UPDATED RC**
Optional keyword that specifies the return code to be used if any of the records in the RECON data sets contained either an SSID, data set name, or volume serial that did not match a source SSID, data set name, or volume serial.

**REPO-NOT-UPDATED RC**
Optional keyword that specifies the return code to be used if any of the repository data sets contained a data set name that did not match a source data set name.

**RENAME-ARCHIVE-LOGS**
Optional keyword that specifies that if the IMS archive logs are on the source DASD volumes and were copied to the target volumes, this keyword will change the data set names and VOLSERS of the IMS archive logs in the RECON data sets.

**RENAME-CAS**
Optional keyword that specifies that if the Change Accumulation data sets are on the source DASD volumes and were copied to the target volumes, this keyword will change the data set names and VOLSERS of the Change Accumulation records in the RECON data sets.

**RENAME-ICS**
Optional keyword that specifies that if the Image Copy data sets are on the source DASD volumes and were copied to the target volumes, this keyword will change the data set names and VOLSERS of the Image Copy records in the RECON data sets.

**ALLOW-RENAME-SIM**
Optional keyword that indicates that the IMSUPDATE command can update IMS data sets even if the previous RENAME command was run with SIMULATE. This keyword can be used in cases in which IMS Cloning Tool did not perform the copy and rename of the target data sets but the target data sets still need to be updated with the information for the target IMS.
Setting database refresh defaults

This topic describes how to specify defaults for database refresh commands, DDs, and other defaults.

Defaults are originally derived from the GCLINI PARMLIB member, but can be customized for each user ID using these panels. These defaults are then saved in ISPF profiles and are specific to each TSO user ID. This allows different users to have different defaults when creating cloning profiles.

Enter 4 on the User Settings menu to access database refresh defaults. The User IMS database refresh settings panel is displayed:

<table>
<thead>
<tr>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 DD Specification</td>
</tr>
<tr>
<td>2 IMSDBREFRESH Command</td>
</tr>
<tr>
<td>3 IMSDBSTOP Command</td>
</tr>
<tr>
<td>4 IMSDBSTART Command</td>
</tr>
<tr>
<td>5 IMSDBCLEAN Command</td>
</tr>
</tbody>
</table>

Command defaults

To set default values for each command, enter the appropriate number for the command in the Option field.

Setting default DD specifications for database refreshing

The IMS database refresh DD Specification panel lets you enter default DD specifications for the DDs required for database refreshing and for optional user DDs. These DDs may be used in one or more of the source or target.

Note: You must allocate any data sets that do not exist before attempting to execute the database refresh jobs.

DD defaults can be customized for each user ID using these panels. These defaults are then saved in ISPF profiles and are specific to each TSO user ID. This allows different users to have different defaults when creating cloning profiles.

Enter 1 on the User IMS database refresh settings menu. The IMS database refresh DD Specification panel is displayed:

<table>
<thead>
<tr>
<th>DD Name</th>
<th>DD</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCLIN</td>
<td>+</td>
</tr>
<tr>
<td>GCLPRINT</td>
<td>SYSOUT=</td>
</tr>
<tr>
<td>GCLINI</td>
<td>DISP=SHR,DSN=GCL.TWUSER.PARMLIB(GCLINI)</td>
</tr>
<tr>
<td>GCLCOPY</td>
<td>DISP=SHR,DSN=TWUSER.LISTDSNS(LSTOMBR)</td>
</tr>
<tr>
<td>DBRCOUT</td>
<td>DISP=SHR,DSN=TWUSER.DBRCOUT(LSTOMBR)</td>
</tr>
<tr>
<td>GCLMASKDF</td>
<td>DISP=SHR,DSN=TWUSER.MASKDEF(LSTOMBR)</td>
</tr>
<tr>
<td>JOURNAL</td>
<td>DISP=SHR,DSN=TWUSER.DBCLEAN.JRNL</td>
</tr>
</tbody>
</table>

Row 1 of 7
Required DD names are pre-selected with SEL next to of the DD name and will be included in one or more of the three IMS Cloning Tool jobs (source, target, or TCP/IP server).

For most DD names, you can modify the data set specifications such as DISP or the SYSOUT location. Some DD names are not required, but when specified must have a particular DD name. These DD names cannot be modified.

Refer to the information that follows to determine which DDs to include in your table space cloning jobs.

**Editing DD names and specifications**

Where allowed, you can change the DD names and specifications to meet your site's requirements. You can type directly over the current values in the fields.

**Using the Control DD defaults fields to edit DD specifications**

The Control DD fields can be used to easily set the high level qualifiers and member names for all the DDs on the panel that can be modified.

1. Specify a default high level qualifier in the HLQ field and a default member name in the Member field.
2. Enter D in the Command field
3. When you press Enter, the DD name fields are populated with the specified HLQ and member name.

To clear the DD specifications, enter C in the Command field.

**Attention:** if you use the C command, all specifications that will be modified will be cleared.

**Selecting or deselecting a DD for inclusion in JCL**

Use the S line command as a toggle to select or deselect a DD. If the DD will be included, SEL is displayed next to the DD name. If a DD is not selected, it will not be included by default in the database refresh profile, but can be added later when creating a database refresh profile.

**Adding user DDs**

You can enter your own user-defined DD names and specifications on a separate panel. Enter the U command in the Command field. When you press Enter, the following panel is displayed:

```
GCL1EDUD  IMS database refresh DD Specification
Command ==> A - Add Line  P - Product DD Specification
Line commands: S - Select/Unselect  D - Delete Line

DD Name  DD
```

This panel allows you to enter default DD specifications for user DDs that you may want to include in database refresh jobs.

To add DDs to this panel:
1. Enter A in the Command line and press Enter.
2. In the lines that are displayed in the input area, enter the DD name and desired data set specifications.
3. Enter S next to the DD name to select the DD for inclusion in jobs.

Use the S line command as a toggle to select or deselect a DD for inclusion. If a DD is not selected, it will not be included by default in the profile, but can be added later when creating a database refresh profile.

To remove a DD, enter D next to the DD and press Enter.

To return to specifying database refresh DDs, enter P in the command line.

**Database refresh DD descriptions:**

The database refresh DDs provided by IMS Cloning Tool on the Database refresh DD Specification panel are identified in this topic.

The following table describes the database refresh DDs.

<table>
<thead>
<tr>
<th>DD</th>
<th>Required?</th>
<th>Usage</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCLIN</td>
<td>Yes</td>
<td>In the source job, the GCLIN DD identifies source (local) and target IMS subsystem names, identifies DDs passed to ADRDSSU for data set allocations, and contains other commands related to the source and target subsystems. The GCLIN DD also contains the COPY command and its options, and various SET commands.</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>In the target job, the GCLIN DD contains the input parameters for the target job.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>In the TCP/IP server job, the GCLIN DD contains the input parameters for the target job in the form of SET commands.</td>
<td></td>
</tr>
<tr>
<td>GCLPRINT</td>
<td>Yes</td>
<td>In the source job, GCLPRINT displays GCLINI tokens, control parameters, data set names and associated IMS table spaces and index spaces, IMS start and stop space command status, and DFSMSdss program ADRDSSU commands and status.</td>
<td>$SYSOUT **</td>
</tr>
<tr>
<td></td>
<td></td>
<td>In the target job, GCLPRINT displays GCLINI tokens, GCLIN control parameters, execution status, and START IMS command status for each data set processed.</td>
<td></td>
</tr>
<tr>
<td>GCLINI</td>
<td>Yes</td>
<td>GCLINI is the product PARMLIB member that is set up during installation. Used in the source and the target jobs, the GCLINI member contains program variables.</td>
<td>The PARM library where the PARMLIB member in GCLINI is located.</td>
</tr>
<tr>
<td>GCLCOPY</td>
<td>No</td>
<td>If PRECOPY is specified, IMS Cloning Tool writes a list of the source and target data set pairs to the GCLCOPY DD. This list can be parsed and used as input to the copy methodology of your choice.</td>
<td></td>
</tr>
</tbody>
</table>
Table 20. Database refresh DD descriptions on the IMS database refresh DD Specification panel (continued)

<table>
<thead>
<tr>
<th>DD</th>
<th>Required?</th>
<th>Usage</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>DBRCOUT</td>
<td>No</td>
<td>The output data set where IMS Cloning Tool will put DBRC information that will be passed to the POSTCOPY step. This data set is needed if the source ACB, MDA, and RECOND libraries are not added to the POSTCOPY job.</td>
<td></td>
</tr>
<tr>
<td>GCLMSKDF</td>
<td>Yes, if data masking will be used</td>
<td>GCLMSKDF is used in the source job to hold the masking rules to be applied and the tables to be masked. It is passed to the target job as an input to the data masking processor.</td>
<td>DISP=SHR, DSN=hlq-field, MASKDEF(member-field)</td>
</tr>
<tr>
<td>JOURNAL</td>
<td>No</td>
<td>This is an optional DD to specify a JOURNAL for IMSDBREFRESH. The JOURNAL can be used for the following scenarios:</td>
<td>SYSOUT**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Data masking is being performed for one or more of the databases being refreshed and you would like the database refresh to be restartable in the event of an error.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• A previous IMSDBREFRESH command failed and you would like to restart the previous command from the point of failure.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• To save the list of target database data sets that are refreshed so that a subsequent IMSDBCLEAN command can be used to delete the target databases.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>To define a JOURNAL file to be used by the IMSDBREFRESH command, refer to GCLDBJRN in SGCLJCL.</td>
<td></td>
</tr>
</tbody>
</table>

**IMSDBREFRESH command defaults**

The IMSDBREFRESH command is used to find data set names from database names, verify the compatibility of the source and target databases, optionally stop the target databases, stop the source databases, optionally perform the data set copies, and optionally start the source and target databases after the copies have been performed and the target DBRC has been updated.

The following values can be set on the subsystem cloning IMSDBREFRESH command defaults panel. These values are used strictly as defaults for IMSDBREFRESH command parameters when you are creating a new subsystem cloning profile. The parameter values can later be edited in the profile.

**DATA-MOVER PGM**

Optional keyword that specifies the program to be used to initiate copies and copy options.

**FASTREP**

Indicates whether fast replication is preferred (PREF), required (REQ), or not required (NONE).

**FCTOPPRCPRIMARY**

Indicates that a FlashCopy target volume can also be a PPRC primary volume. This applies to ESS devices only. Specify one of the following:

- PRESMIRREQ: Require the use of Preserve Mirror. If a Preserve Mirror operation cannot be accomplished, the FlashCopy operation will not be completed.
• PRESMIRPREF: Prefer the use of Preserve Mirror. If a Preserve Mirror operation cannot be accomplished, the FlashCopy operation is still performed.
• PRESMIRNONE: Do not use Preserve Mirror.

AUTO-START-SOURCE-DB
Optional keyword that indicates whether the source databases should be started after the copy process is complete.

AUTO-START-TARGET-DB
Indicates whether to start each target IMS database after the copy process is complete.

AUTO-STOP-TARGET-DB
Indicates whether the database refresh job should stop (DBR) each target IMS database prior to the copy process starting.

COPY-IF-NO-IMS-TARGET-DB
Optional keyword that indicates whether IMS Cloning Tool defines elements for target databases on the target IMS if they do not currently exist.

STOPCSL
Optional keyword that will stop the CSL address spaces after the IMS subsystem has terminated. If LOCAL is specified, the address spaces associated with the CSL on a single z/OS image. Specify PLEX as the second parameter for this keyword if all CSL addresses with an IMSplex are to be shut down.

DATA-MASKING
Optional keyword that specifies whether data masking will be applied.

DBRC-ACTION
Optional keyword that indicates the DBRC action to perform for the target databases after they are refreshed. If REORG is specified, a NOTIFY.REORG will be performed for all database data sets that were refreshed. If REDEFINE is specified, a LIST.DB is performed to provide a reference for current DBRC definitions, followed by a DELETE.DB, INIT.DB, and any INIT.DBDS, INIT.PART, and INIT.AREA commands to redefine the target database.

ALLOW-PARTIAL
Optional keyword that indicates whether the source job can optionally start each source IMS database after the copy process is complete. When Y (YES) is specified, IMS Cloning Tool continues processing other databases if an error is encountered with one or more databases. When N (NO) is specified, IMS Cloning Tool stops the IMSDBREFRESH process if an error is encountered with any of the databases.

ACCESS
Optional keyword that indicates the ACCESS mode that the databases are to be started with.

FUZZY-COPY
Optional keyword that indicates whether the source databases should be stopped prior to be replicated. If used with DATA-MOVER(PGM(ADRDSSU)), it indicates that ADRDSSU should be invoked with TOLERATE(ENQFAILURE). If used with DATA-MOVER(PGM(NONE)) and the PRECOPY keyword, the source database is not stopped.
LOG-APPLY
Optional keyword that indicates whether to apply log updates from the source databases to the target databases after copying the source databases.

SWITCH-OLDS
Optional keyword that indicates whether to issue a /SWI OLDS command to the source IMS system after refreshing the target data sets and before updating log apply.

ARCHIVE-WAIT time
Optional keyword that indicates how many minutes to wait for an online log data set to be archived before the IMSDBREFRESH job should be abnormally terminated.

ARCHIVE-WAIT RC
The return code to be used when the specified ARCHIVE-WAIT time has elapsed. Must be a numeric value between 0-4095.

VERIFY-NO-UPDATERS
Specify whether the IMSDBREFRESH command should verify that the source database does not have any updaters prior to refreshing the database. If YES is specified, you must also specify a return code to be used in the VERIFY-NO-UPDATERS RC field.

INDEXES
Optional keyword which indicates whether any related indexes should be copied as well.
- N: only the specified DBDs will be copied.
- Y: any related primary or secondary indexes will also be started.
- P: the primary index, if one exists, will also be copied but any related secondary indexes will not be copied.

LOGICALLY-RELATED
Optional keyword that indicates whether a database should be copied if not all logically related databases are copied in the same command. If YES is specified, a database is copied only if all logically related databases are also being copied in the same command. If NO is specified, the specified databases are copied even if not all logically related databases will be copied.

NOAUTH-TARGETS
Optional keyword that specifies whether the IMSDBREFRESH command should set PROHIBIT AUTH=ON in the target RECONs for the target databases prior to starting the data set copy process. If Y (yes) is specified, other IMS jobs will be prevented from authorizing the target databases until the database refresh process is complete. If IMS Cloning Tool sets PROHIBIT AUTH=ON, this flag will be reset after the data set copy process is complete. The default is No, which will not set PROHIBIT AUTH=ON.

REPLACE-TARGET-DS
Optional keyword that indicates whether overwrite the target data sets if they exist. If NO is specified and the target data sets exist, the copy will fail.

NOFEOV
Optional keyword that specifies that when stopping databases, the /DBR DB command will be issued with the NOFEOV parameter.
GLOBAL
Optional keyword that specifies that the /DBR DB and /START DB commands will be issued with the GLOBAL parameter. The GLOBAL keyword is not valid if the ACCESS keyword is specified.

WAIT
Optional keyword that specifies the number of minutes that the IMSDBREFRESH command should wait to get exclusive access to the database data sets. If the specified time limit expires before the databases have been stopped, the specified return code is used.

STOP-COMMAND
Optional keyword that indicates the IMS command to be used to stop the source databases. When DBR is specified, the DBRECOVER command is used, and all access to the source databases will be stopped. When DBD is specified, the DBDUMP command is used, and the full function source databases will be put into read-only mode, and a DBRECOVER will be issued for DEDBs. When QUIESCE is specified, an UPDATE DB QUIESCE command will be used and IMS will only pause access to the source databases for the duration of the copy.

IMSPLEX
Optional keyword that indicates the IMSPLEX name for the source IMS CSL components. The IMSPLEX name is used to issue IMS Type-2 commands such as the UPDATE DB QUIESCE command.

IMSDBSTOP command defaults
The IMSDBSTOP command is used stop the target IMS database from online access prior to initiating a database refresh if the target databases are on another LPAR.

The following values can be set on the subsystem cloning IMSDBSTOP command defaults panel. These values are used strictly as defaults for IMSDBSTOP command parameters when you are creating a new subsystem cloning profile. The parameter values can later be edited in the profile.

INDEXES
Optional keyword that indicates whether any related indexes should be stopped as well. When NO is specified, only the specified DBDs will be stopped. When YES is specified, any related primary or secondary indexes will also be stopped. When P is specified, the primary index, if one exists, will also be stopped but any related secondary indexes will not be stopped.

NOFEOV
Optional keyword that specifies whether to issue the /DBR DB command with the NOFEOV parameter.

GLOBAL
Optional keyword that specifies whether to issue the /DBR DB command with the GLOBAL parameter.

WAIT time, RC
Optional keyword that specifies the number of minutes that the IMSDBSTOP command should wait to get exclusive access to the database data sets. If the specified time limit expires before the database has been stopped, IMSDBSTOP will terminate with the specified return code.

STOP-COMMAND
Optional keyword that indicates the IMS command to be used to stop the source databases. When DBR is specified, the DBRECOVER command is
used, and all access to the source databases will be stopped. When DBD is specified, the DBDUMP command will be issued and the full function source databases will be put into read-only mode, and a DBRECOVER will be issued for DEDBs. When QUIESCE is specified, an UPDATE DBQUIESCE command will be used and IMS will only pause access to the source databases for the duration of the copy.

**IMSPLEX**
Optional keyword that indicates the IMSPLEX name for the source IMS CSL components. The IMSPLEX name is used to issue IMS Type-2 commands.

**IMSSDSTART command defaults**
The IMSSDSTART command can be used to start an IMS database for online access after a database refresh process has been completed.

The following values can be set on the subsystem cloning IMSSDSTART command defaults panel. These values are used strictly as defaults for IMSSDSTART command parameters when you are creating a new subsystem cloning profile. The parameter values can later be edited in the profile.

**ACCESS**
Optional keyword that indicates the ACCESS mode that the database is to be started with. Valid values include RO, RD, UP, or EX. For more information, see the IMS Command Reference.

**INDEXES**
Optional keyword that specifies whether any related indexes should be started as well. NO indicates that only the specified DBDs will be started. YES indicates that any related primary or secondary indexes will also be started. P indicates that the primary index, if one exists, will also be started, but any related secondary indexes will not be started.

**GLOBAL**
Optional keyword that specifies whether to issue the /START DB command with the GLOBAL parameter.

**IMSSDBCLEAN command defaults**
The IMSSDBCLEAN command can be used to delete target data sets that were previously refreshed with the IMSSDBREFRESH command.

The following values can be set on the subsystem cloning IMSSDBCLEAN command defaults panel. These values are used strictly as defaults for IMSSDBCLEAN command parameters when you are creating a new subsystem cloning profile. The parameter values can later be edited in the profile.

**JOBNAME**
Optional keyword used to restrict the data sets to just those database data sets that were refreshed by the jobname specified. If JOBNAME is not specified, then all data sets recorded in the JOURNAL data set for the target IMS SSID will be deleted.

**DATA-MASKING**
Optional keyword used to indicate whether data set cleanup should be performed on databases that also have an active journal entry associated with an IMSSDBREFRESH job that performed data masking. When IMSSDBREFRESH is executed with DATA-MASKING(Y), the journal entries are created so that the job can be restarted if an error occurs. The DATA-MASKING keyword specifies whether IMSSDBCLEAN deletes any
data sets associated with data masking. If DATA-MASKING(NO) is specified, and IMSDBCLEAN attempts to delete any data sets that are associated with databases that were processed on a prior data masking process, the deletion will fail. The default is NO.

BUILDJCL-ONLY
Optional keyword used to indicate whether to build the JCL to invoke IDCAMS to delete the target database data sets, or to delete the target database data set. If NO is specified, IMSDBCLEAN will delete the target database data sets. If YES is specified, IMSDBCLEAN will not delete the target database data sets.

Creating cloning jobs using the interface

This topic describes some basic procedures for subsystem cloning and database refreshing using the ISPF interface.

Before you begin

Before you begin creating subsystem or database refresh jobs using the ISPF interface:
• You must ensure that the subsystems that you want to use as source and target subsystems have been added and configured using the Administrator functions portion of the interface.
• You should verify that the user configuration settings are appropriate for your needs.

Basic procedure

The basic procedure to create jobs for cloning subsystems and refreshing databases:
1. Create a profile.
2. Select the menu options to specify the type of cloning, the DDs, command settings, and other options.
3. Build the profile. Building the profile creates the series of jobs that will perform the cloning.
4. Review the generated jobs to ensure the output is as desired.
5. To invoke the cloning process, submit the generated jobs. The member names are generated alphanumerically; simply submit the jobs in order.

Creating a profile

To create a new subsystem or database refresh profile, follow these steps.

About this task

The process of creating a profile is the same for subsystem cloning and database refresh.

Procedure
1. On the Primary Option menu, enter option 1.
2. On the Clone menu, enter option 3 for subsystem cloning or 4 for database refresh.
3. On the Enter Clone Profile Selection Criteria window, enter selection criteria (if desired). Standard ISPF wildcarding is allowed.
4. On the IMS Subsystem Clone Profile Display or the IMS Database Refresh Profile display, enter C in the Command field. The Enter New IMS Subsystem Clone Profile Options or Enter New IMS Database Refresh Profile Options window is displayed.

5. Enter a profile name and share option and press Enter. The Edit IMS Subsystem Clone Profile menu or the Edit IMS Database Refresh Profile menu is displayed.

6. Select the options off the menu to set up the cloning profile.

**Results**

Once a profile has been created, it can be edited, renamed, viewed, copied or deleted.

---

**Subsystem cloning**

This section describes the basic steps for subsystem cloning using the ISPF interface.

Start the ISPF interface and create a subsystem cloning profile. After the cloning profile has been created, the Edit IMS Subsystem Clone Profile menu is displayed, as shown in the following figure:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCLIEICP</td>
<td>Edit IMS Subsystem Clone Profile</td>
</tr>
<tr>
<td>Creator . . . : TWUSER Name . . . : PDMURRB</td>
<td></td>
</tr>
<tr>
<td>Share Option . : UPDATE Description . :</td>
<td></td>
</tr>
</tbody>
</table>

1. Select Source and Target IMS subsystems
2. Select Source and Target Volume Pairing
3. Select Source and Target ICF catalogs
4. Select Rename masks
5. Select other parameters

---

**Subsystem cloning steps summary**

The general steps for using the ISPF interface to clone an IMS subsystem are described in this topic.

**Procedure**

1. Ensure the source and target subsystems have been added and properly configured under the Administrative Options option.
2. Create a subsystem cloning profile.
3. Select the source and target subsystems and specify cloning type. (Opt. 1 on Edit IMS Subsystem Clone Profile.)
4. Verify/enter source and target HLQs. (Option 1 on Edit IMS Clone Profiles).
5. Specify source/target volume pairings (option 2 on Edit IMS Subsystem Clone Profile).
6. Specify source and target ICF catalogs. (option 3 on Edit IMS Subsystem Clone Profile).
7. Specify rename masks (option 4 on Edit IMS Subsystem Clone Profile).
8. Build the profile.
9. Submit the jobs (in order).
Select source and target subsystems
You must first select the source and target subsystems and specify offline or online cloning.

Select source and target subsystems
You must first select the source and target subsystems and specify offline or online cloning.

For data sharing source subsystems
Select the source and target subsystems and specify offline or online cloning. In addition, for source subsystems that are data sharing, you must specify the data sharing attributes of the target subsystem.

Procedure
1. On the Edit IMS Subsystem Clone Profile menu, enter option 1.
2. On the Select Source and Target IMS Subsystems menu, enter A in the Command field.
3. On the Select Source IMS Subsystem panel, select the source subsystem and press Enter.
4. On the Select Cloning Type panel, enter ONLINE or OFFLINE in the Type of cloning field.
5. Enter SAME, FEWER, or NONDS in the Data sharing attributes of target field. Specify SAME when the target will be a data sharing group with the same number of members as the source. Specify FEWER if the target will be a data sharing group with fewer members than the source. Enter NONDS when the target will not be a data sharing group.
6. The Select source members to clone panel is displayed. This panel lists all data sharing group members in the source data sharing group. The data sharing group member that you selected as a source subsystem on the Select Source IMS Subsystem panel is automatically selected. You can select one or more additional data sharing group members to clone.
7. When you have selected all the members to be cloned, press Enter.

Specifying the target subsystem for data sharing source members:
You must specify which members of the target data sharing group are to be used as targets.

If the target data sharing group will have the SAME number of members
1. The Select Target IMS member panel is displayed. On this panel, select the target subsystems to be paired with source subsystems. The target subsystem you select will be paired with the source member listed near the top of the panel.
2. Select a target by entering S next to the target. When you press Enter, if there are more source subsystems that need to be paired with targets, the panel will be displayed again.
3. Continue to pair target subsystem with source subsystems until all source and targets have been paired; when you press Enter, the Edit IMS Cloning values panel is displayed.
If the target data sharing group will have FEWER members

If the target is a data sharing group that will have fewer members than when built, then you must specify which target members will be the “surviving members”. For example, if you plan to clone one subsystem to a target data sharing group that has two members, then you will need to specify which target group member will be the surviving member.

1. The Select Target IMS member panel is displayed. On this panel, select the target subsystems to be paired with source subsystems. The target subsystem you select will be paired with the source member listed near the top of the panel.
2. Select a target by entering S next to the target. When you press Enter, if there are more source subsystems that need to be paired with targets, the panel will be displayed again. Continue to pair target subsystem with source subsystems until all source and targets have been paired.
3. The Manage surviving target IMS members panel is displayed. On this panel, you can add or delete the surviving member(s) for the target data sharing subsystem. Add a surviving target member by entering A in the Command line and press Enter.
4. The Select surviving target IMS members panel is displayed. Select the surviving member by entering S in the line command area next to the target subsystem. Or select all listed members by entering A in the command line. Press Enter.
5. To save changes, press Enter, then PF3. The Enter IMS cloning values panel is displayed.

If the target subsystem will not be a data sharing group (NONDS)

1. The Select Target IMS member panel is displayed. On this panel, select the target subsystems to be paired with source subsystems. The target subsystem you select will be paired with the source member listed near the top of the panel.
2. Select a target by entering S next to the target. When you press Enter, if there are more source subsystems that need to be paired with targets, the panel will be displayed again. Continue to pair target subsystem with source subsystems until all source and targets have been paired.
3. When you press Enter, the Select surviving target IMS member panel is displayed. This panel lists the target subsystem you selected. Since the target will be non-data sharing, this is the only subsystem that will be a surviving member. Enter S in the line command area to select the surviving member.
4. When you press Enter, the Edit IMS Cloning values panel is displayed.

Specify source and target volume pairings

Specify the input volumes to be copied and the target volumes to which they will be copied.

Procedure

1. On the Edit IMS Subsystem Clone Profile menu, enter option 2 (Select Source and Target Volume Pairing).
2. On the Select Source and Target Volume Pairing panel, enter one of the following:
   - 1 to select a specify a source SMS storage group or mask that contains the input volumes to be copied.
• 2 to specify input volumes using volcers or volser masks.
• 4 to specify one or more SMS storage groups or masks as targets that will be paired with input volumes.
• 5 to specify the target volumes via volcers or volser masks that will be paired with input volumes.

Specify source and target ICF catalogs
Specify the source catalogs that data sets from source (from) volumes are cataloged in, and the corresponding target catalogs that renamed volume data sets are to be cataloged in.

About this task
For each renamed data set, source and target catalog pairs are searched for the ICF catalog the source volume data set was cataloged in. The renamed data set is cataloged in the corresponding target catalog.

Procedure
1. On the Edit IMS Subsystem Clone Profile menu, enter option 3 (Select Source and Target ICF catalogs).
2. On the Select Source and Target ICF catalogs panel, specify the source catalogs that data sets from the source volume are cataloged in, and the corresponding target catalog that renamed data sets on the target volume are to be cataloged in.

Specify rename masks for source and target data sets
The data sets from the COPY step can be renamed onto the target volumes.

About this task
For each renamed data set, source and target catalog pairs are searched for the ICF catalog the source volume data set was cataloged in. The renamed data set is cataloged in the corresponding target catalog.

Procedure
1. On the Edit IMS Subsystem Clone Profile menu, enter option 4 (Select rename masks).
2. On the Select rename masks panel, enter one of the following:
   • 1 to specify source and target rename masks. On the Rename Masks panel, specify the source and target data set rename masks. The RENAME uses these masks to rename and catalog the data sets from the COPY step onto the target volumes.
   • 2 to exclude data sets from the rename process. The Exclude Masks panel allows you to specify a list of source data set names or masks that will NOT be renamed.

Build the cloning jobs from a profile
Once the profile has been created, build the profile to produce the cloning jobs.
About this task

Begin building the profile on the IMS Subsystem Clone Profile Display, shown in the following figure:

```
GCL1ISPR  IMS Subsystem Clone Profile Display
Command ===> Scroll ===> CSR

Commands: C - Create
Line Commands: B - Build  D - Delete  E - Edit  R - Rename  V - View  C - Copy

Profile Like ... *
Creator Like . . TWUSR*

Cmd Name  Creator  Share Option Description
TEST      TWUSR   NO ACCESS
TEST2     RING    TWUSRA UPDATE  TEST2
```

Procedure

1. On the IMS Subsystem Clone Profile Display, enter B next to the profile that you want to build.
2. On the Build IMS Subsystem Clone jobs panel, enter the data set into which the jobs are to be placed, and specify processing options.
3. Press Enter. The cloning jobs are generated into the specified data set.
4. If you selected the processing option to edit the JCL data set, a panel is displayed listing the jobs that have been generated, as shown in the following figure. You can edit or view the jobs using line commands.

```
Edit TWUSR.GCL.JCLLIB4
Command ===> Scroll ===> CSR

Line Commands: E - Edit  V - View

Cmd Name  Created  Changed  ID
ST01C7A1  2012/08/25  2012/08/25  08:59:50 TWUSR
ST01D8A   2012/08/25  2012/08/25  08:59:53 TWUSR
ST02      2012/08/25  2012/08/25  08:59:52 TWUSR
ST03C7A1  2012/08/25  2012/08/25  08:59:50 TWUSR
ST03D8A   2012/08/25  2012/08/25  08:59:53 TWUSR
ST04      2012/08/25  2012/08/25  08:59:52 TWUSR
ST05      2012/08/25  2012/08/25  08:59:53 TWUSR
ST06D9A3  2012/08/25  2012/08/25  08:59:50 TWUSR
ST06TI2   2012/08/25  2012/08/25  08:59:53 TWUSR
ST08D9A3  2012/08/25  2012/08/25  08:59:51 TWUSR
ST09D9A3  2012/08/25  2012/08/25  08:59:51 TWUSR
ST12D9A3  2012/08/25  2012/08/25  08:59:51 TWUSR
ST14TI2   2012/08/25  2012/08/25  08:59:55 TWUSR
```

Submit the jobs

After the subsystem cloning jobs have been generated, submit the jobs in order.
**About this task**

Jobs are built with members names of STxx, where xx is an indicator of the order in which the jobs should be submitted. Jobs with the same xx number can be submitted simultaneously. For instance, jobs ST06D9A3 and ST06D9B3 can be run at the same time.

---

**Refreshing databases**

This section describes the basic steps for database refresh using the ISPF interface.

**Note:** Be sure the DDs required for refreshing databases have been created before attempting to build a database refresh profile.

Start the ISPF interface and create a database refresh profile. After the cloning profile has been created, the Edit IMS Database Refresh Profile menu is displayed, as shown in the following figure:

![GCL1EDRP Edit IMS Database Refresh Profile](image)

### Database refresh steps summary

The general steps for using the ISPF interface to refresh an IMS database are described in this topic.

**Procedure**

1. Ensure the source and target subsystems have been added and properly configured under the Administrative Options option.
2. Create a database refresh profile.
3. Edit the source job.
4. Verify the target job settings.
5. Verify the report job settings.
6. Build jobs using the database refresh profile.
7. Submit the jobs.

**Edit the source job**

If defaults were specified in the database refresh default specifications panels under User Settings, a database refresh profile can be created simply by verifying the source and target subsystems.

**About this task**

On the Edit IMS Database Refresh Profile menu, select option 1 (Job card and qualifiers). The Setup IMS Database Refresh Job Card panel is displayed, as shown in the following figure:
Procedure

1. Review the job card and qualifiers. The job cards for the target job may have already been specified in the user defaults; verify that the settings are correct on the Setup IMS Database Refresh Job Card panel, add any necessary lines using the A (Add Line) command.

2. Press PF3 (END) to exit.

3. Review the DD specification. Select option 2, DD Specification, from the Edit IMS Database Refresh Profile panel. The DDs for the target job may have already been specified in the user defaults; verify that the settings are correct, and make any necessary changes.

4. Specify IMSDBREFRESH options:
   a. On the Edit IMS Database Refresh Profile menu, enter 3 (IMSDBREFRESH command). The IMSDBREFRESH command panel is displayed.
   b. In the SOURCE IMS SSID field, specify the source subsystem IDs. To select a subsystem from a list, type an asterisk in the SOURCE IMS SSID field and press enter. When the list of subsystems is displayed, type an S next to the desired subsystem and press Enter to return to the IMSDBREFRESH command panel.
   c. In the TARGET IMS SSID field, specify the target subsystem IDs. To select a subsystem from a list, type an asterisk in the TARGET IMS SSID field and press enter. When the list of subsystems is displayed, type an S next to the desired subsystem and press Enter to return to the IMSDBREFRESH command panel.
   d. Set source and target DBD names, rename masks, and any data masking options that you want to use on the IMSDBREFRESH command panel.
   e. Press PF3 (END) to exit.

5. Specify IMSDBSTOP options:
   a. On the Edit IMS Database Refresh Profile menu, enter 4 (IMSDBSTOP command). The IMSDBSTOP command panel is displayed.
   b. Specify the IMS subsystem ID (required), and any additional IMSDBSTOP parameters you want to specify.
   c. Press PF3 (END) to exit.

6. Specify IMSDBSTART options:
   a. On the Edit IMS Database Refresh Profile menu, enter 5 (IMSDBSTART command). The IMSDBSTART command panel is displayed.
   b. Specify the IMS subsystem ID (required), and any additional IMSDBSTART parameters you want to specify.
   c. Press PF3 (END) to exit.
7. Specify IMSDBCLEAN options:
   a. On the Edit IMS Database Refresh Profile menu, enter 6 (IMSDBCLEAN command). The IMSDBCLEAN command panel is displayed.
   b. Specify the IMS subsystem ID (required), and any additional IMSDBCLEAN parameters you want to specify.
   c. Press PF3 (END) to exit.
8. When finished, press PF3 (END) to exit, then press PF3 again. The Edit Database refresh Profile is displayed.

**Build the database refresh jobs from a profile**

Once the profile has been created, build the profile to produce the database refresh jobs.

**Before you begin**

Be sure the DDs required for database refresh have been created before attempting to build a database refresh profile.

**About this task**

Begin building the profile on the IMS Database Refresh Profile display, as shown in the following figure:

```
GCL1IDPR IMS Database Refresh Profile display
Command ===> Scroll ===> CSR
Commands: C - Create
Line Commands: B - Build D - Delete E - Edit R - Rename V - View C - Copy
Profile Like . . . *
Creator Like . . . *
Row1 of 1
```

**Procedure**

1. On the IMS Database Refresh Profile display, enter B next to the profile that you want to build.
2. On the Build IMS Database Refresh jobs menu, enter 1 to generate database refresh jobs and press Enter. The Generate Database Refresh job panel is displayed.
3. Specify the data set and member names for the database refresh jobs.
4. If desired, select one or more processing options.
5. Press PF3 (END) to continue. If you specified to review the jobs, they are displayed in an ISPF edit session.
6. Press PF3 (END) until you return to the Build IMS Database Refresh jobs menu.
7. If you want to generate the stop job, enter 2 and press Enter. The Generate Database Stop job panel is displayed.
8. Specify the data set and member name for the stop job.
9. If desired, select one or more processing options.
10. Press PF3 (END) to continue. If you specified to review the job, it is displayed in an ISPF edit session.
11. Press PF3 (END) until you return to the Build IMS Database Refresh jobs menu.
12. If you want to generate the start job, enter 3 and press Enter. The Generate Database Start job panel is displayed.
13. Specify the data set and member name for the start job.
14. If desired, select one or more processing options.
15. Press PF3 (END) to continue. If you specified to review the job, it is displayed in an ISPF edit session.
16. Press PF3 (END) until you return to the Build IMS Database Refresh jobs menu.
17. If you want to generate the database clean job, enter 4 and press Enter. The Generate Database Clean job panel is displayed.
18. Specify the data set and member name for the clean job.
19. If desired, select one or more processing options.
20. Press PF3 (END) to continue. If you specified to review the job, it is displayed in an ISPF edit session.
21. Press PF3 (END) until you return to the Build IMS Database Refresh jobs menu.

Results

The jobs have been generated and are in the data sets specified. You can now submit the database refresh jobs to perform the refresh.

Submit the jobs

After the jobs have been generated, submit the jobs in the correct order.

Procedure

1. Run the database refresh job.
2. Run the stop job.
3. Run the start job.
4. Run the clean job.

Results

The database refresh is now complete.
Chapter 6. Masking data while refreshing databases

IMS Cloning Tool's data masking feature provides you with the opportunity to protect sensitive data, (for example, credit card numbers, Social Security numbers, names, and addresses) by masking data while refreshing your IMS databases.

IMS Cloning Tool masks data by modifying it during the refresh process, leaving the data in the source database in its original state, but modifying it before it is moved to the target database. Any changes made to the data are determined by user-specified masking rules applied during the copy.

You can apply data masking by using the batch interface commands and DD, or by using the ISPF interface.

The masking support will allow for masking of a segment, a field, or any positions within the segment. For field-level masking, you can include the FIELD() keyword for any fields defined in the DBD or the START() and BYTES() keywords to specify the starting position and length of the data to be masked.

When a database is masked, the output of the IMSDBREFRESH command is an IMS unload file. This unload file must then be used to reload the database on the target system. Normal (non-masked) IMSDBREFRESH processing will cause the IMS database on the target system to be updated. When an IMS database is masked using IMSDBREFRESH, the source database is first unloaded using the IMS HD reorganization unload utility (DFSURGU0). The data masking interface then reads this file and creates a new unload file that has been modified to perform masking. If the IMSDBREFRESH command and data masking is successful, in order to update the IMS database on the target system, this masked unload file must be used as input to the IMS HD reorganization reload utility (DFSURGL0). Once the database has been reloaded, all indices associated with the database must also be rebuilt.

Restriction: Data masking is not supported for segments that are involved in a logical relationship.

How to process indexes when using data masking

When specifying data masking for a database, the best practice is to assume all indexes on that database must be rebuilt. Instead of copying the indexes for masked databases, omit the indexes from the DBD parameter and ensure that the INDEXES keyword specifies N explicitly to prevent all indexes from being included in copy processing. After executing the IMSDBREFRESH job and reloading the target database, rebuild all of the indexes that were omitted from the database refresh.

Overview: Masking data with IMS Cloning Tool

About this task

SGCLJCL(GCLCOPY2) contains a sample job for performing IMSDBREFRESH with data masking.
**Procedure**

1. Add the `DATA-MASKING(Y)` keyword to the IMSDBREFRESH command. For more information, see "IMSDBREFRESH" on page 273.

2. Create a MASKDEF data set to contain the MASKDEF command and keywords that identify the database, segment, or field and data to be masked and define the mask rule.

   **Note:** SGCLJCL(GCLMSKDF) contains a sample MASKDEF command for masking the IVPDB1 database.

3. In the IMSDBREFRESH job, add the GCLMSKDF DD that points to the MASKDEF data set:

   ```
   GCLMSKDF DD DISP=SHR,DSN=hlq.MASKDEF(member)
   ```

4. Submit the IMSDBREFRESH job. The IMSDBREFRESH job creates an unload file for each of the source database that has one or more valid MASKDEF entries in the GCLMSKDF data set. This unload file will be a copy of the database with the specified data masked.

5. Reload target database with the unload data set, and rebuild any associated indexes. Any source databases that did not have a MASKDEF entry are refreshed with standard IMSDBREFRESH processing.

---

**Step 1: Add the DATA-MASKING keywords to IMSDBREFRESH**

**Procedure**

1. Add the `DATA-MASKING(Y)` keyword to the IMSDBREFRESH command. For more information, see "IMSDBREFRESH" on page 273.

2. Specify additional data masking keywords:

   **DATA-MASKING(Y,[RESTART | RERUN])**
   
   An IMSDBREFRESH job that is masking some data may be restartable if a JOURNAL DD is included in the original IMSDBREFRESH job. If the previous IMSDBREFRESH failed, then DATA-MASKING(Y,RESTART) can be specified to restart the IMSDBREFRESH process and skip any processing that was successful on the previous run. If the previous IMSDBREFRESH job failed and you want to start the database refresh job from the beginning, specify:

   ```
   DATA-MASKING(Y, RERUN)
   ```

   **UNLOAD-FROM(TEMP | SOURCE)**
   
   Indicates whether to unload from the original source database or to create a temporary copy of the source database then create the unload from that copy. Performing the unload from a temporary copy of the database will reduce the impact on the source database. The default is TEMP.

   **TEMP-DB-HLQ(USERID | xxxx)**
   
   (This keyword is only applicable if UNLOAD-FROM(TEMP) is specified.) Specifies the high-level qualifier to use to allocate the temporary database data sets when UNLOAD-FROM(TEMP) is specified. This value can be up to 26 bytes. When USERID (the default) is specified, the user ID associated with the job performing the IMSDBREFRESH process is used. IMS Cloning Tool appends ‘database name.ddname’ to this value to create the data set name for the temporary database data sets. This temporary copy is deleted once the unload file is created.
Because the data being masked may be sensitive, secure the data set name using RACF to prevent undesired access to the data.

IMS Cloning Tool creates a temporary unload file for each source database that is being masked. If the masking process is successful, this data set is deleted. If masking fails, then this data set remains allocated and cataloged so that you can perform RESTART processing if desired. The following parameters are used to specify the allocation parameters to use when allocating the temporary unload file:

**TEMP-UNLOAD-HLQ(USERID | xxxxx)**
- Specifies the high-level qualifier to use to allocate the temporary unload file to create during the IMSDBREFRESH job. This value can be up to up to 33 bytes. When USERID (the default) is specified, the user ID associated with the job performing the IMSDBREFRESH process is used. IMS Cloning Tool appends ‘database name.T’ to this value to create the data set name for the temporary unload file. Since the data being masked may be sensitive, be sure that the data set name created is secured using RACF to prevent undesired access to the data.

**TEMP-UNLOAD-UNIT(xxxxxxxxx)**
- Specifies the UNIT to use when allocating the temporary unload file. There is no default.

**TEMP-UNLOAD-VOLUME(xxxxxxxxx)**
- Specifies the volume serial to use when allocating the temporary unload file. There is no default.

**TEMP-UNLOAD-STORCLAS(xxxxxxxxx)**
- Specifies the SMS Storage Class to use when allocating the temporary unload file. There is no default.

**TEMP-UNLOAD-DATACLAS(xxxxxxxxx)**
- Specifies the SMS Data Class to use when allocating the temporary unload file. There is no default.

**TEMP-UNLOAD-MGMTCLAS(xxxxxxxxx)**
- Specifies the SMS Management Class to use when allocating the temporary unload file. There is no default.

IMS Cloning Tool creates a permanent unload file for each source database that is being masked. If the masking process is successful, this data set remains allocated and cataloged and should be used to reload the target database. The following parameters are used to specify the allocation parameters to use when allocating the permanent unload file.

**PERM-UNLOAD-HLQ(USERID | xxxxx)**
- Specifies the high-level qualifier to use to allocate the permanent unload file to create from the IMSDBREFRESH job. This value can be up to up to 33 bytes. When USERID (the default) is specified, the user ID associated with the job performing the IMSDBREFRESH process is used. IMS Cloning Tool appends ‘database name.P’ to this value to create the data set name for the permanent unload file.

**PERM-UNLOAD-UNIT(xxxxxxxxx)**
- Specifies the UNIT to use when allocating permanent unload file. There is no default.

**PERM-UNLOAD-VOLUME(xxxxxxxxx)**
- Specifies the volume serial to use when allocating permanent unload file. There is no default.
PERM-UNLOAD-STORCLAS(xxxxxxxx)
  Specifies the SMS Storage Class to use when allocating permanent
  unload file. There is no default.

PERM-UNLOAD-DATACLAS(xxxxxxxx)
  Specifies the SMS Data Class to use when allocating permanent unload
  file. There is no default.

PERM-UNLOAD-MGMTCLAS(xxxxxxxx)
  Specifies the SMS Management Class to use when allocating permanent
  unload file. There is no default.

---

Step 2: Create a MASKDEF member containing MASKDEF commands
  and keywords

The member is to contain MASKDEF commands that identify the database and
fields or segments to be masked, and to define the masking rule. Multiple
MASKDEF commands can be included in the member and can be for the same
database or for different databases. Multiple MASKDEF commands are supported
for the same database and segment.

Procedure
1. Create a new MASKDEF data set, hlq.MASKDEF(member name), to contain the
  MASKDEF commands.

  Note: SGCLJCL(GCLMSKDF) contains a sample MASKDEF command for
  masking the IVPDB1 database.

2. In the new MASKDEF data set, add MASKDEF commands. The format of the
data set depends on the commands being used. For example, a MASKDEF
member containing the FIELD command would be formatted as follows:

   MASKDEF
     DATABASE(dbdname)
     SEGMENT(segment name)
     DATATYPE(data type[,parameters])
     FIELD(fieldname)
     MASKRULE(maskrule)

   A MASKDEF member containing the START and BYTES commands would be
   formatted as follows:

   MASKDEF
     DATABASE(dbdname)
     SEGMENT(segment name)
     DATATYPE(data type[,parameters])
     START(starting position)
     BYTES(#bytes to mask)
     MASKRULE(maskrule)

DATABASE(dbdname)
  (Required) Specify the name of the source database that contains the
  segment or field to be masked.

SEGMENT(segment name)
  (Required) Specify the name of the segment within the source database
  that contains the segment or field to be masked. If FIELD or START,
  and BYTES are not specified, the entire segment is masked, and the
  length of the segment is determined by the BYTES= parameter on the
  SEGMENT statement in the DBD.

DATATYPE(data-type[,parameters])
  (Required) Specify the data type of the positions to be masked. Each
data type also has an inherent length or range and will be verified. Valid data types and the length/ranges allowed are:

- **BINARY** – length can be from 1 to the maximum segment size
- **CHAR** – length can be from 1 to the maximum segment size
- **BIT** – length is 1 byte
- **BYTE** – length is 1 byte
- **SHORT** – length is 2 bytes (halfword)
- **INT** – length is 4 bytes (fullword)
- **LONG** – length is 8 bytes (doubleword)
- **DECIMAL** – length can be from 1-100 bytes for ZONED and from 1-50 bytes for PACKED
- **FLOAT** – length is 4 bytes (fullword)
- **DOUBLE** – length is 8 bytes (doubleword)
- **TIME** – length depends what time-subtype will be chosen
- **DATE** – length depends what date-subtype will be chosen
- **TIMESTAMP** – length depends what timestamp-subtype will be chosen

When a data type of DECIMAL, DATE, TIME or TIMESTAMP is specified, there are additional parameters that are required in order to indicate the format of the data:

**DATATYPE(DECIMAL, scale, decimal-subtype, sign)**

In the following description, the term ‘precision’ is the total number of decimal digits, and ‘scale’ is the number of digits after a decimal point. The decimal point is not stored in the field, it is only part of information about data type. Scale is explicitly defined by the user in the DATATYPE() parameter and must be non-negative value not greater than precision. Precision is implicitly calculated from the actual field length and must be positive value not greater than 99. For example:

- **packed, unsigned**: precision = field length * 2 (every byte stores 2 digits).
- **packed, signed**: precision = field length * 2 - 1 (every byte stores 2 digits, but second nibble of the last byte stores sign).
- **zoned, unsigned**: precision = field length (every byte stores 1 digit in second nibble).
- **zoned, signed_trailing and signed_leading**: precision = length (every byte stores 1 digit, and one byte - last or first - stores sign in first nibble).
- **zoned, signed_trailing_separate and signed_leading_separate**: precision = length - 1 (1 separate byte - last or first - stores sign only, and every other byte stores 1 digit).

Decimal values in mask rule must meet the following requirements:

- Sign is not allowed for unsigned types.
- The total number of digits before a dot must be not greater than (precision - scale).
- The total number of digits after a dot must be equal to (scale). You can use full form of number ("1234.5678"), or
omit integer part (".1234", if you have non-zero scale), or
omit fractional part ("1234", if you have zero scale).

When a data type of DECIMAL is specified, there are three
additional parameters to indicate the format of the data:

scale (Required) Valid values are from 0 to the field
precision.

decimal-subtype (Optional) This parameter is used to indicate the
internal format of the data. Valid values are:
• PACKED: (default) each byte of data stores two
decimal digits.
• ZONED: each byte of data stores one decimal digit.

sign (Optional) This parameter is used to indicate the way
in which sign is stored.
• When decimal-subtype is PACKED, valid sign values
are SIGNED (sign is stored in the last byte), and
UNSIGNED (no sign is stored). The default is
SIGNED.
• When decimal-subtype is ZONED, valid sign values
are SIGNED_TRAILING (sign is stored in the last
byte together with the last digit), SIGNED_LEADING
(sign is stored in the first byte together with the first
digit), SIGNED_TRAILING_SEPARATE (sign is
stored in the last byte after the last digit),
SIGNED_LEADING_SEPARATE (sign is stored in the
first byte before the first digit), and UNSIGNED (no
sign is stored). The default is SIGNED_TRAILING.

For example:

Signed DECIMAL PACKED with scale=12 would be:
DATATYPE(DECIMAL, 12), DATATYPE(DECIMAL, 12,
PACKED) or DATATYPE(DECIMAL, 12, PACKED,
SIGNED).

Unsigned DECIMAL PACKED with scale=0 would be:
DATATYPE(DECIMAL, 0, PACKED, UNSIGNED).

Signed DECIMAL ZONED, storing sign in the last byte
together with the last digit with scale=5 would be:
DATATYPE(DECIMAL, 5, ZONED) or
DATATYPE(DECIMAL, 5, ZONED,
SIGNED_TRAILING).

Signed DECIMAL ZONED, storing sign in the first byte
before the first digit with scale=5 would be:
DATATYPE(DECIMAL, 5, ZONED,
SIGNED_LEADING_SEPARATE).

Unsigned DECIMAL ZONED with scale=1 would be:
DATATYPE(DECIMAL, 1, ZONED, UNSIGNED).

DATATYPE(TIME,time-subtype,format-of-time)

time-subtype (Required) This parameter is used to indicate the
internal format of the data. Valid values are:
• HEX – data is internal, hexadecimal format such as x’153030’ for 15:30:30. Length is 1-3 bytes.
• CHAR – data is in character (i.e. externally readable) format such as 15.30.30 or 15:30:30. Length is from 2-8 bytes.

**format-of-time**
(Required) This parameter is used to specify the format or layout of the fields within the time. For time portions of the fields, HH indicates hours, II indicates minutes, and SS indicates seconds.

For CHAR time-subtype any printable single characters except those used for field definition (Y, M, D, H, T, S or P) can be used as delimiters at any position between fields, but not at the first or last position of format-of-time.

For example:
Hex time x’153030’: DATATYPE(TIME,HEX,”HIISS”).
Character time 15:30:30:
DATATYPE(TIME,CHAR,”H.II.SS”).
Character time 15*30+30:
DATATYPE(TIME,CHAR,”HH*II+SS”).

**DATATYPE(DATE,date-subtype,format-of-date)**

**date-subtype**
(Required) This parameter is used to indicate the internal format of the data. Valid values are:
• HEX – data is internal, hexadecimal format such as x’20121004’ for October 4, 2012. Length is 1-4 bytes.
• CHAR – data is in character (i.e. externally readable) format such as 10/21/2012 for October 21, 2012. Length is from 2-10 bytes.

**format-of-date**
(Required) This parameter is used to specify the format or layout of the fields within the date that it can be correctly processed. For date portions of the fields, YYYY indicates a 4 digit year, YY indicates a 2 digit year, MM indicates the month, and DD indicates the day.

For CHAR date-subtype any printable single characters except those used for field definition (Y, M, D, H, T, S or P) can be used as delimiters at any position between fields, but not at the first or last position of format-of-date.

For example:
Hex date x’20121231’:
DATATYPE(DATE,HEX,”YYYYMMDD”)
Character date 12/31/2012:
DATATYPE(DATE,CHAR,”MM/DD/YYYY”)

Chapter 6. Masking data while refreshing databases  157
Character date 31-12:12: DATATYPE(DATE,CHAR,"DD-MM:YY")

DATATYPE(TIMESTAMP,timestamp-subtype,format-of-timestamp)

**timestamp-subtype**
(Required) This parameter is used to indicate the internal format of the data. Valid values are:

- **HEX** – data is internal, hexadecimal format such as x'20121004153030123456789012' for October 4, 2012, 15:30:30 and 123456789012 picoseconds. Length is 1-13 bytes.
- **CHAR** – data is in character (i.e. externally readable) format such as 2012.10.04.15.30.30.123456789012 for October 4, 2012, 03:30:30 pm and 123456789012 picoseconds. Length is 2-32 bytes.

**format-of-timestamp**
(Required) This parameter is used to specify the format or layout of the fields within the timestamp that it can be correctly processed. For timestamp portions of the fields, YYYY indicates a 4 digit year, YY indicates a 2 digit year, MM indicates the month, DD indicates the day, HH indicates hours, II indicates minutes, SS indicates seconds, PP... can be used to further qualify the timestamp (P can be repeated up to 12 characters to complete the time as it exists).

For **CHAR** timestamp-subtype any printable single characters except those used for field definition ('Y', 'M', 'D', 'H', 'I', 'S' or 'P') can be used as delimiters at any position between fields, but not at the first or last position of format-of-timestamp.

For example:
Character timestamp 2012/12/31-15:30:30.123456789012 would be: DATATYPE(TIMESTAMP,CHAR,"YYYY/MM/DD-HH:II:SS.PPPPPPPPPPPPPPPPPPP")
Hex timestamp x'20121231153030999999999999' would be: DATATYPE(TIMESTAMP,HEX,"YYYYMMDDHHIISSPPPPPPPPPPPPPPPP")

**FIELD(field name)**
(Optional) Specify the name of the field within the source database segment to be masked. This parameter is valid only for those fields which are defined in the DBD. If FIELD is specified, then the entire field will be masked. The starting position and bytes are obtained from the START= and BYTES= parameters on the FIELD statement in the DBD definition. FIELD is mutually exclusive with START and BYTES.

**START(starting position)**
(Optional) Specify the numeric starting position of the data to be masked within the segment in the source database. If START is specified, BYTES is also required. START and BYTES are mutually exclusive with FIELD.
BYTES(length)
(Optional) Specify the numeric length of the data to be masked. This parameter is required if START is specified. START and BYTES are mutually exclusive with FIELD.

MASKRULE(maskrule)
(Required) Specify the mask rule to be applied to the specified data to be changed. For more information on MASKRULE values, see "Command and keyword syntax for the MASKRULE command." A list of the supported mask rules by datatypes follows:

- BINARY: scramble, user exit
- CHAR: static, scramble, mask, pattern, current user, user exit
- BIT: static, random, user exit
- BYTE: static, scramble, random, sequence, user exit
- SHORT: static, scramble, random, sequence, user exit
- INT: static, scramble, random, sequence, user exit
- LONG: static, scramble, random, sequence, user exit
- DECIMAL: static, scramble, random, user exit
- FLOAT: static, scramble, user exit
- DOUBLE: static, scramble, user exit
- DATE: static, scramble, random, current date, user exit
- TIME: static, scramble, random, current time, user exit
- TIMESTAMP: static, scramble, current timestamp, user exit, random

Tip: You can include multiple MASKDEF commands in the MASKDEF data set.

Command and keyword syntax for the MASKRULE command

IMS Cloning Tool applies data masking to fields based on the mask rule (MASKRULE keyword) that you specify in the MASKDEF command.

The MASKRULE(maskrule) keyword is specified in step 2 on page 152 of "Overview: Masking data with IMS Cloning Tool" on page 151. MASKRULE is required and specifies the mask rule that will be applied to data during the refresh.

MASKRULE keywords

The keyword you specify in the MASKRULE command determines the mask rule that is applied to the source data. The following MASKRULE keywords are available:

- STATIC modifies data by replacing it with a constant value.
- MASK modifies data by replacing it with a customized pattern or static value.
- PATTERN modifies data by replacing it with a pattern; allowing you to specify the pattern based on the existing value of the data.
- RANDOM modifies data by replacing it with random numeric or date/timestamp data, optionally within a certain range.
- USEREXIT allows the user to specify their own user exit (user-created program) that contains data masking rules.
- SEQUENCE modifies data by replacing it with a generated sequence of numeric values with a specified increment.
- SCRAMBLE applies a static scrambling algorithm to the data.
• **CURRENT**
  - CURRENT DATE: replaces the column values with the current date.
  - CURRENT TIME: replaces the column values with the current time.
  - CURRENT TIMESTAMP: replaces the column values with the current timestamp.
• **CURRENT USER** replaces the column values with the current user ID of the owner of the process when it is run.

**Continuation characters**

A rule that requires continuation must only use one continuation character. For example:

```
RULE(STATIC, "long_string_3456789B123456789C123456789D123456789E1-23456789F123456789G123456789H123456789I123456789J123456789K123456789")
```

More than one continuation character is not allowed, such as:

```
RULE(STATIC, - "long_string_3456789B123456789C123456789D123456789E1-23456789F123456789G123456789H123456789I123456789J123456789K123456789")
```

**Masking data with a constant value using the STATIC keyword**

The STATIC keyword defines a constant value to be used to mask data.

The constant value must be placed between quotation marks for DATE, TIME, TIMESTAMP, and CHAR data types. For NUMERIC data types (BIT, BYTE, SHORT, INT, LONG, DECIMAL, FLOAT, and DOUBLE), the value must be entered without quotation marks. The keyword STATIC can be defined in upper or lower case.

This rule can be used for the following column data types:

- CHAR
- BIT
- BYTE
- SHORT
- INT
- LONG
- DECIMAL
- FLOAT
- DOUBLE
- DATE
- TIME
- TIMESTAMP

**STATIC mask syntax**

```
MASKRULE(STATIC, numeric | “date_or_time” | “string”)
```

**STATIC mask parameters**

- **numeric**
  - This value can be any of the following types:
A binary integer (small integer, integer, or big integer)

A decimal number

A floating point number (real, double, or decimal)

date or time

This value can be a time, date, or timestamp.

string

This value can be any alphanumeric string.

**STATIC mask samples**

<table>
<thead>
<tr>
<th>MASKRULE(STATIC, 10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MASKRULE(STATIC, -100)</td>
</tr>
<tr>
<td>MASKRULE(STATIC, -7.2e+75)</td>
</tr>
<tr>
<td>MASKRULE(STATIC, &quot;2009-02-04&quot;)</td>
</tr>
<tr>
<td>MASKRULE(STATIC, &quot;2008-12-01-15.30.30&quot;)</td>
</tr>
<tr>
<td>MASKRULE(STATIC, &quot;2010-10-31-23.59.59.0000000000&quot;)</td>
</tr>
<tr>
<td>MASKRULE(STATIC, &quot;123 Division Street&quot;)</td>
</tr>
</tbody>
</table>

**Masking data with a specified pattern or static value with the MASK mask rule**

This mask rule modifies values by replacing positions within an existing value with the specified pattern or static value.

Non-alphanumeric characters can be generated by enclosing them with a backslash (\) when they are specified. For example, \%\ generates %. The keyword MASK can be defined in upper or lower case. This rule can be used for the following column data types:

- CHAR

**MASK mask syntax**

MASKRULE(MASK, "pattern", start, end)

**MASK mask parameters**

**pattern**

Use this variable to specify the value to be placed in the position specified in the start and end fields. You can also type a pattern to be evaluated, then placed in the specified position or positions. Patterns can be specified in three ways: character generation, string selector, or static value.

- Character generation: Characters that are enclosed in square brackets force a random selection of one of the enclosed characters. Ranges of characters can be established by using the dash. Ranges can only include alphanumeric characters. The following table shows the determination of how many times an expression can be repeated according to the quantification after a symbol or group of symbols:

<table>
<thead>
<tr>
<th>Table 21. Declaration examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Declaration</strong></td>
</tr>
<tr>
<td>[n]</td>
</tr>
<tr>
<td>[m,n]</td>
</tr>
</tbody>
</table>

In combination with repeated templates, a set of characters can establish a correspondence with real text, such as digit columns, phone numbers, zip codes, HTML page elements, and so on.
A set of possible symbols must be defined in brackets. For example, \([abc]\) allows one of those three characters to appear in the text. \([1234567890]\) allows any of those digits to be used. The following table shows the evaluation of a specified character or group of characters:

**Table 22. Character generation examples**

<table>
<thead>
<tr>
<th>Character specification</th>
<th>Evaluates to</th>
</tr>
</thead>
<tbody>
<tr>
<td>([Aa])</td>
<td>A or a</td>
</tr>
<tr>
<td>[abcde] or [a-e]</td>
<td>Any character between a and e, inclusive</td>
</tr>
<tr>
<td>([0-9])</td>
<td>Any single-digit number</td>
</tr>
<tr>
<td>([0-9a-z])</td>
<td>Any single-digit number or any lowercase letter</td>
</tr>
<tr>
<td>([A-Z])[3]</td>
<td>Any three-character uppercase string</td>
</tr>
<tr>
<td>([24%-&amp;])</td>
<td>One of the following: 2, 4, %, -, or &amp;.</td>
</tr>
<tr>
<td>[AaBb][5]</td>
<td>Any five-character string containing any combination of the four specified letters. For example: AAbaA or abbBA or AbAbB</td>
</tr>
<tr>
<td>[Aab2][1,17]</td>
<td>A string from one to 17 characters in length made up of any combination of the four specified letters. For example: a2baab2A or A or a2baabAbAa2bAb2A</td>
</tr>
</tbody>
</table>

- String selector: Strings that are enclosed in parentheses and delimited by the vertical bar ( | ) character perform a random selection of one of the strings. Character generators can be included in a string selector. Both alphanumeric and non-alphanumeric characters can be generated. Non-alphanumeric characters can be generated by dereferencing them (using a \) when they are specified. The following table lists examples of string selector characters and their evaluations:

**Table 23. String selector examples**

<table>
<thead>
<tr>
<th>Character specification</th>
<th>Evaluates to</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Mrs</td>
<td>Mr</td>
</tr>
<tr>
<td>(C[ATO]</td>
<td>A[KLR])</td>
</tr>
</tbody>
</table>

- Static Value: Any string of characters that is not enclosed in brackets (for character generation) or parentheses (for string selection), is considered a static value and is concatenated in the order of appearance. The following table includes an example of a non-alphanumeric character preceded by a backslash (\) and its evaluation:

**Table 24. Static value examples**

<table>
<thead>
<tr>
<th>Character specification</th>
<th>Evaluates to</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Sir\The\Great\Mr) Bill</td>
<td>Sir Bill, The Great Bill, or Mr Bill</td>
</tr>
</tbody>
</table>

**start, end**

Type an inclusive range of the positions in the source data that are to be replaced.

**MASK mask samples**

MASKRULE(MASK, "[abc]{1}", 1, 2)
MASKRULE(MASK, "[b]{1}" , 1, 2)
MASKRULE(MASK, "[0-9]{10}" , 1, 10)
Masking data with a pattern generated by the PATTERN mask rule

The pattern rule allows you to specify a pattern to be used to generate a value. A variety of patterns can be generated by specifying a formula for the pattern.

The keyword PATTERN can be defined in upper or lower case.

This rule can be used for the following column data types:
- CHAR

**PATTERN mask syntax**

MASKRULE(PATTERN, "pattern", "use_sources")

**PATTERN mask parameters**

**pattern**

This parameter defines the pattern that will generate a value. Nested expressions can be used. All other characters are directly inserted into the rule value. There are several different pattern types that can be created. Each type of pattern is created by typing the appropriate pattern in the pattern field.

- Character generation: Characters that are enclosed in square brackets force a random selection of one of the enclosed characters. Ranges of characters can be established by using the dash. Ranges can only include alphanumeric characters. Quantification after a symbol or group of symbols determines how many times this expression can be repeated. The following table lists the repeat count for characters declared in square brackets:

<table>
<thead>
<tr>
<th>Declaration</th>
<th>Repeat count</th>
</tr>
</thead>
<tbody>
<tr>
<td>{n}</td>
<td>Exactly n</td>
</tr>
<tr>
<td>{m,n}</td>
<td>From m till n inclusive</td>
</tr>
</tbody>
</table>

In combination with repeated templates, a set of characters can establish a correspondence with real text, such as digit columns, phone numbers, zip codes, HTML page elements, and so on.

A set of possible symbols must be defined in brackets. For example, \([abc]\) allows one of those three characters to appear in the text. \([1234567890]\) allows any of those digits to be used. The following table lists examples of character generation and their evaluation:
Table 26. Character generation examples

<table>
<thead>
<tr>
<th>Character specification</th>
<th>Evaluates to</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Aa]</td>
<td>A or a</td>
</tr>
<tr>
<td>[abcde] or [a-e]</td>
<td>Any character between a and e, inclusive</td>
</tr>
<tr>
<td>[0-9]</td>
<td>Any single-digit number</td>
</tr>
<tr>
<td>[0-9a-z]</td>
<td>Any single-digit number or any lowercase letter</td>
</tr>
<tr>
<td>[A-Z][3]</td>
<td>Any three-character uppercase string</td>
</tr>
<tr>
<td>[24%-&amp;]</td>
<td>One of the following: 2, 4, %, -, or &amp;</td>
</tr>
<tr>
<td>[AaBb][5]</td>
<td>Any five-character string containing any combination of the four specified letters. For example: AAbBa or aBBaB</td>
</tr>
<tr>
<td>[Aab2][1,17]</td>
<td>A string from one to 17 characters in length made up of any combination of the four specified letters. For example: a2baab2A or A or a2baabAbaA22bAb2A</td>
</tr>
</tbody>
</table>

- String selector: Strings that are enclosed in parentheses and delimited by the vertical bar ( | ) character perform a random selection of one of the strings. Character generators can be included in a string selector. Both alphanumeric and non-alphanumeric characters can be generated. Non-alphanumeric characters can be generated by dereferencing them (using a \) when they are specified. The following table lists string selector examples and their evaluation:

Table 27. String selector examples

<table>
<thead>
<tr>
<th>Character specification</th>
<th>Evaluates to</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Mrs</td>
<td>Mr</td>
</tr>
<tr>
<td>(C</td>
<td>ATO</td>
</tr>
</tbody>
</table>

- Static Value: Any string of characters that is not enclosed in brackets (for character generation) or parentheses (for string selection), is considered a static value and is concatenated in the order of appearance. A non-alphanumeric character should be preceded by a backslash (\). The following table includes a static value example and example evaluation:

Table 28. Static value examples

<table>
<thead>
<tr>
<th>Character specification</th>
<th>Evaluates to</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Sir</td>
<td>The\ Great</td>
</tr>
</tbody>
</table>

use_sources

Valid values for this option are Y(ES) or N(O). If this option is Y(es), output data will be generated based on the current value of the field. This function is based on static formula; for any given input value and identical pattern, the output value will be the same. For example, for the pattern:

\[0-2][0-9][3]\-{0-9}[4]\-{A-B}[4]\]

and the field is 5985-9597-BDHF, the output result will be always be 2896-1648-ABCD.
**PATTERN mask samples**

- `MASKRULE(PATTERN, "[0-2][0-9]{3}-[0-9]{4}-[A-D]{4}", "Y")`
- `MASKRULE(PATTERN, "[abc]{1}", YES)`
- `MASKRULE(PATTERN, "[0]{1}", Y)`
- `MASKRULE(PATTERN, "[0-9]{10}", NO)`
- `MASKRULE(PATTERN, "[A-Z]{10}", N)`
- `MASKRULE(PATTERN, "[a-z]{5}", YES)`
- `MASKRULE(PATTERN, "[abc]{1, 10}", Y)`
- `MASKRULE(PATTERN, "[^\~\`!\@\#\$\%\&\*\(\)_\-\=\+]{10}", NO)`
- `MASKRULE(PATTERN, "[A-Za-z0-9]{1, 10}", N)`
- `MASKRULE(PATTERN, "(Mrs|Mr|Ms)\", Y)`
- `MASKRULE(PATTERN, "\{C[ATQ]A[KLR]\}\", NO)`
- `MASKRULE(PATTERN, "\{Sir|The\ Great|Mr\ Bill\", N)"

**Masking data with a random numeric, datestamp, or timestamp value using the RANDOM mask rule**

The random rule produces random numeric or date/timestamp data within certain bounds.

The keyword RANDOM can be defined in upper or lower case.

This rule can be used for the following column data types:

- BIT
- BYTE
- SHORT
- INT
- LONG
- DECIMAL
- DATE
- TIME
- TIMESTAMP

**RANDOM mask syntax**

`MASKRULE(RANDOM, "min", "max", "check_bounds")`

**RANDOM mask parameters**

`min`, `max`

- `min` and `max` must be entered between quotation marks for DATE, TIME and TIMESTAMP data types. All numeric values must be entered without quotation marks. These values can be any of the following, but both `min` and `max` must be defined and must be the same data type:
  - A binary integer (small integer, integer, or big integer)
  - A decimal number
  - A time, date, or a timestamp

Minimum and maximum values must be specified in the same data type format of the table column data type. For example, if the column type where the mask is to be applied is decimal, then minimum and maximum should be defined in format NNNNNN.MM, where precision and scale also correspond to the column data type.

If `min` and `max` do not correspond to the column data type, IMS Cloning Tool returns an error.
For *min*, enter the lowest possible value to be generated by this rule. For *max*, enter the highest possible value to be generated by this rule.

**check_bounds**

Valid values for this parameter are Y(ES) or N(O). Enter Y or YES to have one row in your target table that corresponds to the value specified in the *min* field and one row in your table that corresponds to the value specified in the *max* field. This option allows you to test the endpoints of the range that you specified.

**RANDOM mask samples**

MASKRULE(RANDOM, 0, 1, N)
MASKRULE(RANDOM, -1, 0, NO)
MASKRULE(RANDOM, -100, 0, Y)
MASKRULE(RANDOM, -1, 1, YES)
MASKRULE(RANDOM, 0.00, 100.00, NO)
MASKRULE(RANDOM, -100.00, 0.00, Y)
MASKRULE(RANDOM, "2008-01-01", "2008-12-31", Y)
MASKRULE(RANDOM, "2008-12-01", "2009-01-31", N)
MASKRULE(RANDOM, "00.00.00", "23.59.59", Y)
MASKRULE(RANDOM, "12.00.00", "12.59.59", N)
MASKRULE(RANDOM, "2008-01-01-00.00.00", "2008-12-31-23.59.59.999999", Y)
MASKRULE(RANDOM, "2008-12-01-12.00.00", "2009-01-31-12.59.59.999999", N)

**Masking data by calling an exit using the USEREXIT mask rule**

The user exit rule allows IMS Cloning Tool to call a user exit (a user-created program) that defines the user's own data mask rules.

The keyword USEREXIT can be defined in upper or lower case. This rule can be used for any column data type.

**USEREXIT mask syntax**

MASKRULE(USEREXIT, *module*)

**USEREXIT mask parameters**

*module*

For *module*, enter the external module name that will be called for each column value. The current value of the column will be used as input for the module. The user exit should change the value and return it to IMS Cloning Tool in the same buffer. The user exit must reside in the STEPLIB concatenation.

The length of the column values cannot be changed using a user exit.

The following format is used to pass the column value to the user exit:

```c
unsigned int user_exit(void* field_data, size_t length);
```

**USEREXIT mask samples**

MASKRULE(USEREXIT, CSNMASK1)

**Masking data with a sequence of numbers using the SEQUENCE mask rule**

The sequence rule generates a sequence of numeric values.

The first time the function reference is evaluated, it returns the value of the first argument (initial_value). Each subsequent evaluation returns the value of the second argument (increment) added to the previously returned value. The resulting data type is always integer.
The keyword SEQUENCE can be defined in upper or lower case.

This rule can be used for the following column data types:
- BYTE
- SHORT
- INT
- LONG

**SEQUENCE mask syntax**

\[ \text{MASKRULE(SEQUENCE, initial\_value, increment)} \]

**SEQUENCE mask parameters**

- **initial\_value**
  - Enter an integer value that will be the first value in the sequence.
- **increment**
  - Enter an integer value that will be increment each value in the sequence.

**SEQUENCE mask samples**

- \[ \text{MASKRULE(SEQUENCE, 2789, 2)} \]
- \[ \text{MASKRULE(SEQUENCE, 100, 10)} \]
- \[ \text{MASKRULE(SEQUENCE, -100, 10)} \]

**Masking data with a predefined scrambling function using the SCRAMBLE mask rule**

The scramble rule applies a predefined IMS Cloning Tool scrambling function to the value specified by the argument. The result has the same data type as the provided argument.

The keyword SCRAMBLE can be defined in upper or lower case.

This rule can be used for the following column data types:
- BINARY
- CHAR
- BYTE
- SHORT
- INT
- LONG
- DECIMAL
- FLOAT
- DOUBLE
- DATE
- TIME
- TIMESTAMP

**SCRAMBLE mask syntax**

\[ \text{MASKRULE(SCRAMBLE)} \]
SCRAMBLE mask parameters

None.

SCRAMBLE mask samples

MASKRULE(SCRAMBLE)

Masking data with the current date, time, or timestamp with the CURRENT mask rule

Use the CURRENT date and time-related rules to replace the column values with the current date, current time, or current timestamp (to the nearest second) values.

The keywords CURRENT DATE, CURRENT TIME, and CURRENT TIMESTAMP can be defined in upper or lower case.

This rule can be used for the following column data types:

- DATE
- TIME
- TIMESTAMP

CURRENT mask syntax

MASKRULE(CURRENT DATE)
MASKRULE(CURRENT TIME)
MASKRULE(CURRENT TIMESTAMP)

CURRENT mask samples

MASKRULE(CURRENT DATE)
MASKRULE(CURRENT TIME)
MASKRULE(CURRENT TIMESTAMP)

Masking data with the user ID of the owner of the process being run using the CURRENT USER mask rule

The current user rule replaces the column value with the current user ID of the owner of the process when it is run.

The keyword CURRENT USER can be defined in upper or lower case.

This rule can be used for the following column data types:

- CHAR

CURRENT USER mask syntax

MASKRULE(CURRENT USER)

CURRENT USER mask parameters

None.

CURRENT USER mask samples

MASKRULE(CURRENT USER)
Step 3: Edit the IMSDBREFRESH job

In the IMSDBREFRESH job, add the GCLMSKDF DD that points to the MASKDEF data set:

```
GCLMSKDF DD DISP=SHR, DSN=hlq.MASKDEF(member)
```

This DD is required if DATA-MASKING(Y).

---

Step 4: Submit the IMSDBREFRESH job

Submit the IMSDBREFRESH job. The IMSDBREFRESH job creates an unload file for each source database with the requested data masked.

---

Step 5: Reload the target database and rebuild associated indexes

Reload the target database with the unload data set, and rebuild any associated indexes. Any source databases that did not have a MASKDEF entry are refreshed with standard IMSDBREFRESH processing.

The name of the unload file to be used in this process is determined by the database name and the value specified for the PERM-UNLOAD-HLQ parameter.

For example, if you requested data masking for database IVPDB1 and specified PERM-UNLOAD-HLQ(IMS.IVP), then the name of the masked unload file will be IMS.IVP.IVPDB1.P

---

Restarting or re-running a IMSDBREFRESH job with data masking

If you rerun an IMSDBREFRESH job that was performing data masking and the job previously failed, then the temporary unload data set may still exist.

If you run an IMSDBREFRESH job that was performing data masking and a JOURNAL DD was specified, journal entries are created to keep track of the progress of the processing. If the job fails, the journal can prevent the need to reprocess the copies or unloads that previously completed. In order to rerun a failed job, additional steps must be taken. If the job is rerun and journal entries are found from a previously failed job for the databases being processed, the IMSDBREFRESH process will fail unless either DATA-MASKING(Y,RESTART) or DATA-MASKING(Y,RERUN) is specified. If you specify DATA-MASKING(Y,RESTART), then only those copies and unloads which were not completed on the prior run will be performed. Any copies or unloads that are already completed are skipped. If you specify DATA-MASKING(Y,RERUN), then the journal entries are cleaned up and the entire job is reprocessed from the start.

The name of this data set is controlled using the TEMP-UNLOAD-HLQ parameter as defined in the IMSDBREFRESH job. In order to be able to rerun this job, you will have to take one of the following actions:

- If the journal was active on the prior execution, perform one of the following actions:
  - Specify DATA-MASKING(Y,RESTART) in order to use the prior temporary unload file. This will result in CPU savings since the unload process is not performed and the prior temporary unload file is reused.
- Delete the previously created temporary unload file and rerun the job specifying DATA-MASKING(Y,RERUN) in order to clean up the prior journal entries and rerun the entire job.
- If the journal was not active on the prior execution, delete the previously created temporary unload file and rerun the job specifying DATA-MASKING(Y).
Chapter 7. Cloning scenarios

This topic provides examples of potential cloning scenarios.

These scenarios are intended to be used to assist you in planning your cloning methodology. There are many scenarios that can be achieved. If you do not see a scenario in this topic that meets your requirements, contact IBM Software Support

Volume cloning using an interim set of volumes

Volumes may be cloned using an interim set of volumes.

IMS Cloning Tool supports this process, but requires knowledge of the original source and final target volumes. The procedure for this type of cloning is:

- The source volumes (referred to as set A) are copied to the interim volumes (set B).
- The interim volumes (set B) are copied to the target volumes (set C).
- The data sets on the target volumes (set C) are renamed.

For this procedure, two COPY commands are used. Each COPY command must be in its own JCL step.

- The first COPY command copies the source volumes to the interim volumes and backs up the source ICF catalogs.
- The second COPY command copies the interim volumes to the target volumes and does not back up the ICF catalogs.

An additional DD must be added to the COPY steps. The DD name is VOLPLIST and it must have attributes of RECFM=FB, LRECL=80. The data set allocated by the VOLPLIST DD will be used by a subsequent step/job.

Overview of steps

The following table summarizes the steps you need to follow to perform volume cloning, including a description of each step:

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Run COPY of volume set A to volume set B using a USERCATALOGS keyword and including the VOLPLIST DD. The ICF catalog is backed up and the journal file that will be used for the RENAME and IMS steps will be created. The journal contains volume pairs set A and set B. The VOLPLIST data set created in this run contains the volume pairs from this copy (set A and set B) that will be read in step 3.</td>
</tr>
<tr>
<td>2</td>
<td>Run COPY of volume set B to volume set C using NOUSERCATALOGS keyword and including the VOLPLIST DD. The ICF catalog is not backed up and the journal file created in this job will not be further used. The VOLPLIST data set created in this run contains the volume pairs from this copy (set B and set C) and will be read in step 3.</td>
</tr>
</tbody>
</table>
Table 29. Steps for volume cloning procedure (continued)

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Run GCLRNTGT with the VOLPLIST from step 1 on the GCLIN DD and the VOLPLIST from step 2 on the NUCIN DD. IMS Cloning Tool requires the volume pairs from set A (source) and set C (final target). This step reads the VOLPLIST data set created from the first COPY in step 1 that references set A and set B, and reads the VOLPLIST data set created from the second copy that references set B and set C. It matches up the volume pairs and creates a new temporary data set with the correct volume pairs from set A and set C.</td>
</tr>
<tr>
<td>4</td>
<td>Run VOLOPTIONS using NEWTGT data set as input to NEWTARGETS-DDN (temporary data set created in previous step). This job reads in the temporary data set created in step 3 and is used to update the journal data set created in step 1 to point to volume pairs set A and set C.</td>
</tr>
<tr>
<td>5</td>
<td>Run RENAME for volume set C.</td>
</tr>
</tbody>
</table>

**Note:** Steps 1, 4, and 5 use the same journal data set. Step 2 uses a different journal data set.

**Example**

In these example steps, the following items are used:

- The source volumes are SRC001 and SRC002.
- The interim volumes are INT001 and INT002.
- The target volumes are TGT001 and TGT002

**Step 1: Copy SRCxxx to INTxxx and back up the source ICF catalogs**

The following example is partial JCL for this step:

```cll
//S1 EXEC PGM=GCL00010,REGION=8M
//STEPLIB DD DISP=SHR,DSN=HLQ.?SGCLLOAD
//GCLINI DD DISP=SHR,DSN=HLQ.?SGCLPARM(GCLINI)
//GCLPRINT DD SYSPUT=*
//JOURNAL DD DSN=HLQ.?JRNL,
//DISP=(,CATLG),UNIT=SYSALLDA,
//RECFM=KS,KEYLEN=64,KEYOFF=0,
//LRECL=600,SPACE=(CYL,(10,10))
//VOLPLIST DD DSN=HLQ.?GCL.WRK.VOLPLIST,
//DISP=(,CATLG),UNIT=SYSALLDA,
//RECFM=FB,LRECL=80,BKSIZE=0,
//SPACE=(CYL,(1,1))
//GCLIN DD *
COPY
FROM-VOLSER(SRC001 SRC002)
TO-VOLSER(INT001 INT002)
USERCATALOGS(SOURCE.USERCAT1 TARGET.USERCAT1)
SOURCE.USERCAT2 TARGET.USERCAT2
CATWORK-DSN(HLQ.?WRK.* )
JOURNAL-DDN(JOURNAL)
```

//
Step 2: Copy INTxxx to TGTxxx without backing up the catalog.

The following example is partial JCL for this step:

```
//S1 EXEC PGM=GCL00010,REGION=8M
//STEPLIB DD DISP=SHR,DSN=HLQ?.SGCLLOAD
//GCLINI DD DISP=SHR,DSN=HLQ?.SGCLPARM(GCLINI)
//GCLPRINT DD SYSPRINT DD SYSOUT=* 
//JOURNAL DD DSN=HLQ?.NUCJRNL,
//       DISP=(,CATLG),UNIT=SYSALLDA,
//       RECORD=KS,KEYLEN=64,KEYOFF=0,
//       LRECL=600,SPACE=(CYL,(10,10))
//VOLPLIST DD DSN=HLQ?.GCLNUC.WRK.VOLPLIST,
//       DISP=(,CATLG),UNIT=SYSALLDA,
//       RECFM=FB,LRECL=80,BLKSIZE=0,
//       SPACE=(CYL,(1,1))
//GCLIN DD *
COPY DD *
FROM-VOLSER(  
  INT001 INT002  
)
TO-VOLSER(  
  TGT001 TGT002  
)
NOUSERCATALOGS
JOURNAL-DDN(JOURNAL)
//*
```

Step 3: Run GCLRNTGT

The following example is partial JCL for this step:

```
//* GCLIN IS FROM THE IMS Cloning Tool COPY COMMAND WITH A
//* USERCATALOGS KEYWORD, DD VOLPLIST.
//* NUCIN IS FROM THE IMS Cloning Tool COPY COMMAND WITH THE
//* NOUSERCATALOGS KEYWORD, DD VOLPLIST.
//* NEWTGT WILL BE USED BY THE IMS Cloning Tool VOLOPTIONS COMMAND
//S2 EXEC PGM=IRXJCL,REGION=2M,PARM='GCLRNTGT'
//SYSEXEC DD DSN=HLQ?.SGCLPARM,DISP=SHR
//SYSTSIN DD DUMMY
//SYSTSPRT DD SYSOUT=* 
//SYSPRINT DD SYSPRINT DD SYSOUT=*,DCB=(LRECL=132,RECFM=VBA,BLKSIZE=0)
//GCLIN DD DSN=HLQ?.GCL.WRK.VOLPLIST,DISP=SHR
//NUCIN DD DSN=HLQ?.GCLNUC.WRK.VOLPLIST,DISP=SHR
//NEWTGT DD DSN=HLQ?.GCL.WRK.NEWTGT,UNIT=SYSDA,DISP=(,CATLG),
//       DSOOR=PS,LRECL=80,RECFM=FB,BLKSIZE=0,
//       SPACE=(CYL,(1,1))
```

Step 4: Run VOLOPTIONS to update journal for RENAME

The following example is partial JCL for this step:

```
//S1 EXEC PGM=GCL00010,REGION=6M 
//STEPLIB DD DISP=SHR,DSN=HLQ?.SGCLLOAD
//GCLINI DD DISP=SHR,DSN=HLQ?.SGCLPARM(GCLINI)
//GCLPRINT DD SYSPRINT DD SYSOUT=* 
//JOURNAL DD DSN=HLQ?.NUCJRNL.
//       DISP=(,CATLG),UNIT=SYSALLDA,
//       RECORD=KS,KEYLEN=64,KEYOFF=0,
//       LRECL=600,SPACE=(CYL,(10,10))
//VOLPLIST DD DSN=HLQ?.GCLNUC.WRK.VOLPLIST,
//       DISP=(,CATLG),UNIT=SYSALLDA,
//       RECFM=FB,LRECL=80,BLKSIZE=0,
//       SPACE=(CYL,(1,1))
//GCLIN DD *
VOLOPTIONS UPDATE  
  NEWTARGETS-DDN(NEWTGT)  
  JOURNAL-DDN(JOURNAL)
//*
```
Step 5: RENAME data sets on the TGTxxx volumes

The following example is partial JCL for this step:

```
//S1 EXEC PGM=GCL00010,REGION=8M
//STEPLIB DD DISP=SHR,DSN=HLQ?.SGCLLOAD
//GCLINI DD DISP=SHR,DSN=HLQ?.SGCLPARM(GCLINI)
//SORTMSG DD SYSOUT=*  
//GCLPRINT DD SYSOUT=*  
//DRSTATS DD SYSOUT=*  
//JOURNAL DD DSN=HLQ?.JRNL,DISP=SHR  
//BCSRECS DD DSN=HLQ?.WRK.BCSRECS,  
// UNIT=SYSALLDA,DISP=(',
// SPACE=('CYL,10,10))  
//VOLBKUP DD DSN=HLQ?.WRK.VOLBKUP,  
// UNIT=SYSALLDA,DISP=(',
// SPACE=('CYL,40,40))  
//GCLIN DD *
//RENAME -  
//SAFE -  
//VOLBKUP-DDN(VOLBKUP) -  
//RENAME=MASKS{  
// PROD1.** TEST1.** -  
// PROD2.** TEST2.** -  
// }  
//JOURNAL-DDN(JOURNAL)  
///*
```

Cloning an IMS Subsystem from an IMS Recovery Expert backup when backup volumes are online

IMS subsystems can be cloned using the backup volumes created by an IBM IMS Recovery Expert backup. Because the source IMS is running at the time of the IMS Recovery Expert backup, this is an online cloning.

The following procedure allows for repetitive cloning without the need to manually update the volume specifications when LAST is used with the BSY#VOLS program. The BSY#VOLS program is part of the IMS Recovery Expert product.

- The source volumes (referred to as set A) have been copied to the backup volumes (set B) by a IMS Recovery Expert backup.
- The backup volumes (set B) are copied to the target volumes (set C).
- The data sets on the target volumes (set C) are renamed.
- The target IMS subsystems on the target volumes are conditioned.

For this procedure, the source to backup volume pairing will be obtained from IMS Recovery Expert and reformatted for use by two COPY commands. Each COPY command must be in its own JCL step.

- The first COPY command identifies the source volume to backup volume pairing and backs up the source ICF catalog copies on the backup volumes. This COPY does not do any volume copies as the copies were done by the IMS Recovery Expert backup.
- The second COPY command copies the backup volumes to the target volumes and does not back up the ICF catalogs.

An additional DD must be added to the COPY steps. The DD name is VOLPLIST and it must have attributes of RECFM=FB,LRECL=80. The data set allocated by the VOLPLIST DD will be used by a subsequent step/job.
Step overview:

1. Run the BSY#VOLS program to get the source (set A) and backup (set B) volume pairing used by the IMS Recovery Expert backup and the names of the source ICF user catalogs.

2. Run BACKINFO-REFORMAT to take the backinfo data set created by the BSY#VOLS program (Step 1) and reformat it for use by subsequent COPY commands (Steps 3 and 4).

3. Run COPY with DATA-MOVER(PGM(NONE)). Use VOLPAIRS-DDN to get the source volumes (set A) to backup volumes (set B) pairing (data set from step 2), use a USERCATALOGS-DDN keyword (data set from step 2), and include the VOLPLIST DD.

4. Run COPY using FROM-VOLSER-DDN to get the backup volumes (set B) (data set from step 2), using the NOUSERCATALOGS keyword and including the VOLPLIST DD.

5. Run RXNEWTGT with the VOLPLIST from step 3 on the GCLIN DD and the VOLPLIST from step 4 on the NUCIN DD.

6. Run VOLOPTIONS using NEWTGT data set as input to NEWTARGETS-DDN.

7. Run RENAME for target volumes (set C).

8. Run the IMS conditioning command: IMSUPDATE.

Note: Steps 3, 6, 7, and 8 use the same journal data set. Step 4 uses a different journal data set.

Example

In this example:

- The source IMS resides on the source volumes (SRCxxx)
- The target IMS will reside on the target volumes (TGTxxx).
- There are one or more sets of backup volumes (BKPxxx) that have been created by IMS Recovery Expert backups.
- There are two source ICF catalogs (USERCAT.SRC01 and USERCAT.SRC02) that reside on source volumes.

Step 1 - Get the source to backup volume pairing (SRCxxx to BKPxxx) and the source ICF catalog names from the last IMS Recovery Expert backup taken for IMS subsystem IMSP.

Sample JCL can be found in the IMS Recovery Expert JCL library. The JCL shown here is an example only and the IMS Recovery Expert product documentation should be used to determine the actual JCL necessary.

Partial JCL:

```
//BSY#VOLS EXEC PGM=BSY#VOLS,PARM=(IMSP,LAST)
//STEPLIB DD DISP=SHR,DSN=BSY?.LOADLIB
//BSYBPROF DD DISP=SHR,DSN=BSY?.PROFILES
//BSYBPMAP DD DISP=SHR,DSN=BSY?.PROFILE.MAPS
//BSYBPCAT DD DISP=SHR,DSN=BSY?.PROFILE.CATS
//BSYSBBACK DD DISP=SHR,DSN=BSY?.SYSBACK
//BSYSB0BJ DD DISP=SHR,DSN=BSY?.SYSBACK.OBJS
//BSYSBVOL DD DISP=SHR,DSN=BSY?.SYSBACK.VOLS
//BSYBSSDO DD DISP=SHR,DSN=BSY?.SYSBACK.SSIDS
//BSYBOFFL DD DISP=SHR,DSN=BSY?.OFFOPTS
//BACKINFO DD DSN=HLQ?.WRK.BACKINFO,
//   DISP=(,CATLG),
//   UNIT=3390,SPACE=(CYL,(1,5)),
```
Step 2 - Reformat the output of step 1 (backinfo data set) for use in the COPY in steps 3 and 4.

The user catalog pairs are also specified here. Sample JCL can be found in the installation JCL library in member GCLBKINF.

**Partial JCL:**

```plaintext
//S1 EXEC PGM=GCL00010,REGION=BM
//STEPLIB DD DISP=SHR,DSN=HLQ?.LOAD
//GCLINI DD DISP=SHR,DSN=HLQ?.PARMLIB(GCLINI),PARM=(USERCATS)
//GCLPRINT DD SYSOUT=* 
//SYSUDUMP DD SYSOUT=* 
//BACKINFO DD DISP=SHR,DSN=HLQ?.WRK.BACKINFO
//VOLPAIRS DD DISP=(,CATLG),UNIT=SYSALLDA, 
// SPACE=(CYL,(1,1))
//FRVOLSER DD DISP=(,CATLG),UNIT=SYSALLDA, 
// SPACE=(CYL,(1,1))
//UCATS DD DISP=(,CATLG),UNIT=SYSALLDA, 
// SPACE=(CYL,(1,1))
//GCLIN DD *
//BACKINFO-REFORMAT -
//BACKINFO-DDN(BACKINFO) -
//VOLPAIRS-DDN(VOLPAIRS) -
//FROM-VOLSER-DDN(FRVOLSER) -
//USERCATALOGS-DDN(UCATS) -
//USERCATALOGS( -
//USERCAT.SRC01 USERCAT.TGT01 -
//USERCAT.SRC02 USERCAT.TGT02 -
//)
//*
```

Step 3 - Set the pairing between source (SRCxxx) and backup (BKPxxx) volumes in the journal and back up the source ICF catalogs from the backup volumes.

Sample JCL can be found in the installation JCL library in member GCLCOPY.

**Partial JCL:**

```plaintext
//S1 EXEC PGM=GCL00010,REGION=BM
//STEPLIB DD DISP=SHR,DSN=HLQ?.LOAD
//GCLINI DD DISP=SHR,DSN=HLQ?.PARMLIB(GCLINI)
//GCLPRINT DD SYSOUT=* 
//VOLPAIRS DD DISP=SHR,DSN=HLQ?.WRK.VOLPAIRS
//UCATS DD DISP=SHR,DSN=HLQ?.WRK.UCATS 
//JOURNAL DD DSN=HLQ?.JRNL, 
// DISP=(,CATLG),UNIT=SYSALLDA, 
// RECOR=KS,KEYLEN=64,KEYOFF=0, 
// LRECL=600,SPACE=(CYL,(10,10))
//VOLPLIST DD DSN=HLQ?.WRK.VOLPLIST, 
// DISP=(,CATLG),UNIT=SYSALLDA, 
// RECFM=FB,LRECL=80,BLKSIZE=8000, 
// SPACE=(CYL,(1,1))
//GCLIN DD *
COPY - 
DATA-MOVER(PGM(NONE)) -
```
Step 4 - Copy the backup volumes (BKPxxx) to the target volumes (TGTxxx) without backing up any ICF catalogs.

Sample JCL can be found in the installation JCL library in member GCLCOPY.

Partial JCL:

```plaintext
//S1 EXEC PGM=GCL000010,REGION=8M
//STEPLIB DD DISP=SHR,DSN=HLQ?.LOAD
//GCLINI DD DISP=SHR,DSN=HLQ?.PARMLIB(GCLINI)
//GCLPRINT DD SYSOUT=* 
//FRVOLSER DD DISP=SHR,DSN=HLQ?.WRK.FRVOLSER
//JOURNAL DD DSN=HLQ?.NUCJRNL,
// DISP=(,CATLG),UNIT=SYSALLDA,
// RECFM=KS,KEYLEN=64,KEYOFF=0,
// LRECL=600,SPACE=(CYL,(10,10))
//VOLPLIST DD DSN=HLQ?.NUC.WRK.VOLPLIST,
// DISP=(,CATLG),UNIT=SYSALLDA,
// RECFM=FB,LRECL=80,BLKSIZE=0,
// SPACE=(CYL,(1,1))
//GCLIN DD *
//COPY –
//FROM-VOLSER-DDN(FRVOLSER) –
//TO-VOLSER( –
// TGT001 TGT002 –
// ) –
// NOUSERCATALOGS –
//JOURNAL-DDN(JOURNAL)
```

Step 5 - Run RXNEWTGT with the VOLPLIST data sets from steps 3 and 4.

Sample JCL can be found in the installation JCL library in member GCLRBTGT.

Partial JCL:

```plaintext
//S2 EXEC PGM=IRXJCL,REGION=2M,PARM='RXNEWTGT'
//SYSEXEC DD DSN=HLQ?.PARMLIB,DISP=SHR
//SYSTWSIN DD DUMMY
//SYSTWSPRD DD SYSOUT=*
//SYSTWSPRINT DD SYSOUT=*,DCB=(LRECL=132,RECFM=VBA,BLKSIZE=0)
//GCLIN DD DSN=HLQ?.WRK.VOLPLIST,DISP=SHR
//NUCIN DD DSN=HLQ?.NUC.WRK.VOLPLIST,DISP=SHR
//NEWTGT DD DSN=HLQ?.WRK.NEWTGT,UNIT=SYSDA,DISP=(,CATLG),
// DSNORG=PS,LRECL=80,RECFM=FB,BLKSIZE=0,
// SPACE=(CYL,(1,1))
```
Step 6 — Run VOLOPTIONS using NEWTGT data set as input to NEWTARGETS-DDN.

Sample JCL can be found in the installation JCL library in member GCLVOLOP.

Partial JCL:

```//S1 EXEC PGM=GCL00010,REGION=6M
//STEPLIB DD DISP=SHR,DSN=HLQ?.LOAD
//GCLINI DD DISP=SHR,DSN=HLQ?.PARMLIB(GCLINI)
//GCLPRINT DD SYSOUT=* 
//SYSUDUMP DD SYSOUT=* 
//JOURNAL DD DISP=SHR,DSN=HLQ?.JRNL
//NEWTGT DD DSN=HLQ?.WRK.NEWTGT,UNIT=SYSDA,DISP=SHR
//GCLIN DD *
   VOLOPTINS UPDATE - 
   NEWTARGETS-DDN(NEWTGT) - 
   JOURNAL-DDN(JOURNAL) */```

Step 7 - RENAME the data sets on the target volumes (TGTxxx).

Sample JCL can be found in the installation JCL library in member GCLRENE.

Partial JCL and command:

```//S1 EXEC PGM=GCL00010,REGION=8M
//STEPLIB DD DISP=SHR,DSN=HLQ?.LOAD
//GCLINI DD DISP=SHR,DSN=HLQ?.PARMLIB(GCLINI)
//SORTMSG DD SYSOUT=* 
//GCLPRINT DD SYSOUT=* 
//DRSTATS DD SYSOUT=* 
//JOURNAL DD DSN=HLQ?.JRNL,DISP=SHR 
//BCSRECS DD DSN=HLQ?.WRK.BCSRECS, 
//UNIT=SYSALLDA,DISP=(,CATLG), 
//SPACE=(CYL,(10,10)) 
//VOLBKUP DD DSN=HLQ?.WRK.VOLBKUP, 
//UNIT=SYSALLDA,DISP=(,CATLG), 
//SPACE=(CYL,(40,40)) 
//GCLIN DD *
   RENAME 
   SAFE -
   VOLBKUP-DDN(VOLBKUP) -
   RENAME-MASKS( 
      PROD1.** TEST1.**-
      PROD2.** TEST2.** -)
   JOURNAL-DDN(JOURNAL) */```

Step 8 - Run the IMS conditioning command.

Run the IMS conditioning command: IMSUPDATE. For additional information about the conditioning commands, refer to the appropriate section in "IMS Online Cloning Procedures" on page 74, for your specific type of cloning.
Cloning an IMS Subsystem from an IMS Recovery Expert backup when backup volumes are offline

IMS subsystems can be cloned using the backup volumes created by an IBM IMS Recovery Expert backup when the backup volumes are offline. The offline backup volumes are exact copies of the source volumes and have an internal volser that is the same as a source volser. Because the source IMS is running at the time of the IMS Recovery Expert backup, this is an online cloning.

The following procedure allows for repetitive cloning without the need to manually update the volume specifications when LAST is used with the BSY#VOLS program. The BSY#VOLS program is part of the IMS Recovery Expert product.

- The source volumes (referred to as set A) have been copied to the backup volumes (set B) by a IMS Recovery Expert backup.
- The backup volumes (set B) are clipped with unique volsers and varied online.
- The backup volumes (set B) are copied to the target volumes (set C).
- The backup volumes (set B) are varied offline and clipped back to their original source volser.
- The data sets on the target volumes (set C) are renamed.
- The target IMS subsystems on the target volumes are conditioned.

For this procedure, the source to backup volume pairing will be obtained from IMS Recovery Expert and reformatted for use by two COPY commands. Each COPY command must be in its own JCL step.

- The first COPY command identifies the source volume to backup volume pairing and backs up the source ICF catalog copies on the backup volumes. This COPY does not do any volume copies as the copies were done by the IMS Recovery Expert backup.
- The second COPY command copies the backup volumes to the target volumes and does not back up the ICF catalogs.

An additional DD must be added to the COPY steps. The DD name is VOLPLIST and it must have attributes of RECFM=FB,LRECL=80. The data set allocated by the VOLPLIST DD will be used by a subsequent step/job.

**Step overview:**

1. Run the BSY#VOLS program to get the source (set A) and backup (set B) volume pairing used by the IMS Recovery Expert backup and the names of the source ICF user catalogs.

2. Run BACKINFO-REFORMAT to take the backinfo data set created by the IMS Recovery Expert#VOLS program (Step 1) and reformat it for use by subsequent COPY commands (Steps 3 and 4). The CLIP-IF-OFFLINE(Y) is used to request that the offline backup volumes (set B) be clipped and varied online. The VOLSER-RENAME-MASKS keyword is used to specify how the source volsers should be changed to generate unique volsers for the corresponding backup volumes being clipped. The VOLOPTIONS-CMD-DDN keyword is specified to generate a VOLOPTIONS command to unclip the backup volumes after they have been copied to the target volumes.
3. Run COPY with DATA-MOVER(PGM(NONE)). Use VOLPAIRS-DDN to get the source volumes (set A) to backup volumes (set B) pairing (data set from step 2), use a USERCATERLOGS-DDN keyword (data set from step 2), and include the VOLPLIST DD.

4. Run COPY using FROM-VOLSER-DDN to get the backup volumes (set B) (data set from step 2), using the NOUSERCATALOGS keyword and including the VOLPLIST DD.

5. Run VOLOPTIONS with GCLIN using the data set created in step 2 by the VOLOPTIONS-CMD-DDN keyword to vary offline and unclip the backup volumes (set B). The journal data set created in step 3 is used.

6. Run RXNEWTGT with the VOLPLIST from step 3 on the GCLIN DD and the VOLPLIST from step 4 on the NUCIN DD.

7. Run VOLOPTIONS using NEWTGT data set as input to NEWTARGETS-DDN.

8. Run RENAME for target volumes (set C).

9. Run the IMS conditioning command: IMSUPDATE.

Note: Steps 3, 5, 7, 8, and 9 use the same journal data set. Step 4 uses a different journal data set.

Example

In this example:

- The source IMS resides on the source volumes (SRCxxx).
- The target IMS will reside on the target volumes (TGTxxx).
- There are one or more sets of backup volumes (BKPxxx) that have been created by IMS Recovery Expert backups. The backup volumes are offline and have internal volser of their corresponding source volumes.
- There are two source ICF catalogs (USERCAT.SRC01 and USERCAT.SRC02) that reside on source volumes.

Step 1 - Get the source to backup volume pairing (SRCxxx to BKPxxx) and the source ICF catalog names from the last IMS Recovery Expert backup taken for IMS subsystem IMSP.

Sample JCL can be found in the IMS Recovery Expert JCL library. The JCL shown here is an example only and the IMS Recovery Expert product documentation should be used to determine the necessary JCL.

Partial JCL:
```
//BSY#VOLS EXEC PGM=BSY#VOLS,PARM=(IMSP,LAST)
//STPLIB DD DISP=SHR,DSN=BSY?.LOADLIB
//BSYBPMAP DD DISP=SHR,DSN=BSY?.PROFILE.MAPS
//BSYBPCAT DD DISP=SHR,DSN=BSY?.PROFILE.CATS
//BSYSBACK DD DISP=SHR,DSN=BSY?.SYSBACK
//BSYSBOBJ DD DISP=SHR,DSN=BSY?.SYSBACK.OBJS
//BSYSBVOL DD DISP=SHR,DSN=BSY?.SYSBACK.VOLS
//BSYBSSD DD DISP=SHR,DSN=BSY?.SYSBACK.SSIDS
//BSYBOFFL DD DISP=SHR,DSN=BSY?.OFFOPTS
//BACKINFO DD DSN=HLQ?.WRK.BACKINFO,
//                  DISP=(,CATLG),
//                  UNIT=3390,SPACE=(CYL,(1,5)),
//                  DCB=(RECFM=FB,LRECL=80,BLKSIZE=8000)
//SYSPRT DD SYSOUT=*  
//*/
Step 2 - Reformat the output of step 1 (backinfo data set) for use in the COPY in steps 3 and 4.

The offline backup volumes are clipped to new volser and varied online. The user catalog pairs are also specified here. Sample JCL can be found in the installation JCL library in member GCLBKINF.

Partial JCL:

```
//S1 EXEC PGM=GCL00010,REGION=8M
//STEPLIB DD DSN=HLQ?.LOAD,DISP=SHR
//GCLINI DD DSN=HLQ?.PARMLIB(GCLINI),DISP=SHR
//GCLPRINT DD SYSOUT=*
//SYSUDUMP DD SYSOUT=*
//BACKINFO DD DISP=SHR,DSN=HLQ?.WRK.BACKINFO
//VOLPAIRS DD DSN=HLQ?.WRK.VOLPAIRS,
//   DISP=(,CATLG),UNIT=SYSALLDA,
//   SPACE=(CYL,(1,1))
//FRVOLSER DD DSN=HLQ?.WRK.FRVOLSER,
//   DISP=(,CATLG),UNIT=SYSALLDA,
//   SPACE=(CYL,(1,1))
//UCATS DD DSN=HLQ?.WRK.UCATS,
//   DISP=(,CATLG),UNIT=SYSALLDA,
//   SPACE=(CYL,(1,1))
//VOLOPCMD DD DSN=HLQ?.WRK.VOLOPCMD,
//   DISP=(,CATLG),UNIT=SYSALLDA,
//   SPACE=(TRK,(1,1))
//UCATS DD DSN=HLQ?.WRK.UCATS,
//   DISP=(,CATLG),UNIT=SYSALLDA,
//   SPACE=(CYL,(1,1))
//GCLIN DD *
//BACKINFO-REFORMAT -
//BACKINFO-DDN(BACKINFO) -
//VOLPAIRS-DDN(VOLPAIRS) -
//FROM-VOLSER-DDN(FRVOLSER) -
//CLIP-IF-OFFLINE(Y) -
//VOLSER-RENAME-MASKS( -
//   SRC* BKP* -
//   VOLSER-RENAME-MASKS( -
//     SRC01 BKP01 -
//     SRC02 BKP02 -
//   ) -
//   VOLOPTIONS-CMD-DDN( VOLOPCMD ) -
//   USERCATALOGS-DDN(UCATS) -
//   USERCATALOGS( -
//     USERCAT.SRC01 USERCAT.TGT01 -
//     USERCAT.SRC02 USERCAT.TGT02 -
//   ) -
//*
```

Step 3 - Set the pairing between source (SRCxxx) and backup (BKPxxx) volumes in the journal and back up the source ICF catalogs from the backup volumes.

Sample JCL can be found in the installation JCL library in member GCLCOPY.

Partial JCL:

```
//S1 EXEC PGM=GCL00010,REGION=8M
//STEPLIB DD DISP=SHR,DSN=HLQ?.LOAD
//GCLINI DD DISP=SHR,DSN=HLQ?.PARMLIB(GCLINI)
//GCLPRINT DD SYSOUT=*
//VOLPAIRS DD DISP=SHR,DSN=HLQ?.WRK.VOLPAIRS,
//   DISP=(,CATLG),UNIT=SYSALLDA,
//   SPACE=(CYL,(1,1))
//UCATS DD DISP=SHR,DSN=HLQ?.WRK.UCATS,
//   DISP=(,CATLG),UNIT=SYSALLDA,
//   SPACE=(CYL,(1,1))
//JOURNAL DD DSN=HLQ?.JRNL,
//   DISP=(,CATLG),UNIT=SYSALLDA,
//   RECORQ=KS,KEYLEN=64,KEYOFF=0,
//   LRECL=600,SPACE=(CYL,(10,10))
//VOLOPCMD DD DSN=HLQ?.WRK.VOLOPCMD,
//   DISP=(,CATLG),UNIT=SYSALLDA,
//   SPACE=(TRK,(1,1))
//GCLIN DD *
//COPY -
```
DATA-MOVER(PGM(NONE)) -
VOLPAIRS-DDN(VOLPAIRS) -
USERCATALOGS-DDN(UCATS) -
CATWORK-DSN(HLQ.WRK.*) -
JOURNAL-DDN(JOURNAL)

/*
Step 4 - Copy the backup volumes (BKPxxx) to the target volumes (TGTxxx) without backing up any ICF catalogs.

Sample JCL can be found in the installation JCL library in member GCLCOPY.

Partial JCL:
//S1 EXEC PGM=GCL00010,REGION=8M
//STEPLIB DD DISP=SHR,DSN=HLQ?.LOAD
//GCLINI DD DISP=SHR,DSN=HLQ?.PARMLIB(GCLINI)
//GCLPRINT DD SYSOUT=* 
//FRVOLSER DD DISP=SHR,DSN=HLQ?.WRK.FRVOLSER
//JOURNAL DD DSN=HLQ?.NUCJRNL,
// DISP=(,CATLG),UNIT=SYSALLDA,
// RECFM=FB,LRECL=80,SPACE=(CYL,(1,1))
//GCLIN DD *
COPY –
FROM-VOLSER-DDN(FRVOLSER) -
TO-VOLSER( 
TGT001 TGT002 -
)
NOUSERCATALOGS -
JOURNAL-DDN(JOURNAL)
/*

Step 5 - Run VOLOPTIONS command created in step 2 to vary offline and unclip the backup volumes.

Sample JCL can be found in the installation JCL library in member GCLVOLOP.

Partial JCL:
//S1 EXEC PGM=GCL00010,REGION=6M
//STEPLIB DD DISP=SHR,DSN=HLQ?.LOAD
//GCLINI DD DISP=SHR,DSN=HLQ?.PARMLIB(GCLINI)
//GCLPRINT DD SYSOUT=* 
//SYSUDUMP DD SYSOUT=* 
//JOURNAL DD DISP=SHR,DSN=HLQ?.JRNL
//GCLIN DD DISP=SHR,DSN=HLQ?.WRK.VOLOPCMD
/*

Step 6 - Run RXNEWTGT with the VOLPLIST data sets from steps 3 and 4.

Sample JCL can be found in the installation JCL library in member GCLRBTGT.

Partial JCL:
//S2 EXEC PGM=IRXJCL,REGION=2M,PARM='RXNEWTGT'
//SYSEXEC DD DSN=HLQ?.PARMLIB,DISP=SHR
//SYSTSIN DD DUMMY
//SYSTSPRT DD SYSOUT=*
Step 7 - Run `VOLOPTIONS` with the `NEWTGT` data set from step 5 to update the journal with the actual source (SRCxxx) to target (TGTxxx) volume pairing for `RENAME`.

Sample JCL can be found in the installation JCL library in member `GCLVOLOP`.

Partial JCL:
```
//S1 EXEC PGM=GCL00010,REGION=6M
//STEPLIB DD DISP=SHR,DSN=HLQ?.LOAD
//GCLINI DD DISP=SHR,DSN=HLQ?.PARMLIB(GCLINI)
//GCLPRINT DD SYSOUT**
//SYSUDUMP DD SYSOUT**
//JOURNAL DD DISP=SHR,DSN=HLQ?.JRNL
//NEWTGT DD DSN=HLQ?.WRK.NEWTGT,UNIT=SYSDA,DISP=SHR
//GCLDD D D DSN=HLQ?.WRK.VOLPLIST,Disp=SHR,Vol=VolPlist,Disp=(,CATLG),
//   DSORG=PS,LRECL=80,RECFM=FB,BLKSIZE=0,
//   SPACE=(CYL,(1,1))

VOLOPTIONS UPDATE
   NEWTARGETS-DDN(N占有)
   JOURNAL-DDN(JOURNAL)
/*

Step 8 - `RENAME` the data sets on the target volumes (TGTxxx).

Sample JCL can be found in the installation JCL library in member `GCLRENC`.

Partial JCL and command:
```
//S1 EXEC PGM=GCL00010,REGION=8M
//STEPLIB DD DISP=SHR,DSN=HLQ?.LOAD
//GCLINI DD DISP=SHR,DSN=HLQ?.PARMLIB(GCLINI)
//SORTMSG DD SYSOUT**
//GCLPRINT DD SYSOUT**
//DRSTATS DD SYSOUT**
//JOURNAL DD DSN=HLQ?.JRNL,DISP=SHR
//BCSRECS DD DSN=HLQ?.WRK.BCSRECS,
//   UNIT=SYSLDA,DISP=(,CATLG),
//   SPACE=(CYL,(10,10))
//VOLBKUP DD DSN=HLQ?.WRK.VOLBKUP,
//   UNIT=SYSLDA,DISP=(,CATLG),
//   SPACE=(CYL,(40,40))
//GCLDD D D DSN=HLQ?.WRK.VOLPLIST,Disp=SHR,Vol=VolPlist,Disp=(,CATLG),
//   DSORG=PS,LRECL=80,RECFM=FB,BLKSIZE=0,
//   SPACE=(CYL,(1,1))

RENAME
   SAFE
   VOLBKUP-DDN(VOLBKUP)
   RENAME-MASKS(
      PROD1.*) TEST1.*
      PROD2.*) TEST2.*
   )
   JOURNAL-DDN(JOURNAL)
/*

Step 9 - Run the IMS conditioning commands.

Run the IMS conditioning command: `IMSUPDATE`. For additional information about the conditioning commands, refer to the appropriate section in "IMS Offline Cloning Procedures" on page 67 for your specific type of cloning.
Chapter 8. Reference: IMS Cloning Tool Commands

All IMS Cloning Tool commands are invoked by running the main program GCL00010. Functionality is selected by specifying the appropriate IMS Cloning Tool command and parameters.

Required JCL varies with each command. The major factor in choosing whether COPY and RENAME will be in the GCL00010 execution in separate steps, or in separate jobs, is whether resumption of source volume access will begin after the COPY step, or after the RENAME step.

The format of the IMS Cloning Tool journal records can change between releases, so a journal data set created by one release of IMS Cloning Tool should not be used by a different release of IMS Cloning Tool. Use the JRNLUPGRADE command (support for 1.6 and later) to upgrade the journal data set of the prior release so it can be used with a new release.

The following table lists IMS Cloning Tool commands and command descriptions. Each command is explained in detail in separate topics in this chapter.

<table>
<thead>
<tr>
<th>IMS Cloning Tool Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCSCLEAN</td>
<td>Optional command to delete target catalog entries from previous execution.</td>
</tr>
<tr>
<td>COPY</td>
<td>Initiates volume copies, and in parallel, backs up the source ICF catalogs that point to data sets on the source volumes being cloned.</td>
</tr>
<tr>
<td>COPYCHECK</td>
<td>Optional command to wait for completion of COPY events, or withdraw from them.</td>
</tr>
<tr>
<td>IMSSETLOG</td>
<td>Optional command to suspend or resume an IMS system.</td>
</tr>
<tr>
<td>IMSSTART</td>
<td>Optional command to start an IMS subsystem.</td>
</tr>
<tr>
<td>IMSSTOP</td>
<td>Optional command to stop an IMS subsystem.</td>
</tr>
<tr>
<td>IMSUPDATE</td>
<td>Optional command to update IMS to reflect renamed data sets.</td>
</tr>
<tr>
<td>FINDUCATS</td>
<td>Optional command to locate catalogs involved with source volume data sets.</td>
</tr>
<tr>
<td>JRNLUPGRADE</td>
<td>Optional command to upgrade a journal created by a prior release of IMS Cloning Tool.</td>
</tr>
<tr>
<td>ONLINECLIP</td>
<td>Optional command to re-label the target volume(s) when the source volume label was copied but the UCB field still points to the target volume label. This can occur when TSO FCESTABL was used.</td>
</tr>
<tr>
<td>RENAME</td>
<td>Renames and catalogs data sets on target volumes.</td>
</tr>
<tr>
<td>UCATOPTIONS</td>
<td>Optional command that will either list the user catalog pairs from the IMS Cloning Tool journal or allow the target user catalog name(s) to be changed.</td>
</tr>
<tr>
<td>VARYOFF</td>
<td>Optional command to vary target or source volumes offline.</td>
</tr>
<tr>
<td>VARYON</td>
<td>Optional command to vary target or source volumes online.</td>
</tr>
</tbody>
</table>
Table 30. IMS Cloning Tool commands overview (continued)

<table>
<thead>
<tr>
<th>IMS Cloning Tool Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOLOPTIONS</td>
<td>Optional command to use when the COPY command is run at one site and the RENAME command is run at another.</td>
</tr>
</tbody>
</table>

**BCSCLEAN**

*This command is not required.* BCSCLEAN is intended for situations where the target catalog may be used for data sets other than those involved with an IMS Cloning Tool process.

If an empty target catalog is possible, rather than use BCSCLEAN, the target catalog can simply be deleted and re-defined prior to the IMS Cloning Tool COPY step. If the redefined catalog is not on the same volume it was on prior to the delete, special care must be taken to inform all the catalog address spaces of its new location. IBM informational APAR II13354 details the steps necessary to ensure all sharing systems can access the catalog.

BCSCLEAN deletes (with no scratch) all catalog entries created in a target catalog by a previous RENAME step. BCSCLEAN is intended to delete target catalog entries created from a previous run of the IMS Cloning Tool process that may be orphaned as a result of target volume contents being replaced.

Specifically, BCSCLEAN addresses situations where a data set used in a previous application cycle no longer exists in the current application cycle.

Additionally, for persistent data sets (application data sets that exist in every cycle), by emptying the target catalog (delete all entries from a previous run of the IMS Cloning Tool process), the RECATALOG option of the RENAME command can be omitted, and any existing catalog entry can be treated as a true error.

**BCSCLEAN Command Syntax**

BCSCLEAN

Required Keywords:

\{ JOURNAL-DSN\( (dataset \ name) \) | JOURNAL-DDN\( (ddname) \) \}

**BCSCLEAN Command & Keyword Definitions**

BCSCLEAN

Optional command to delete target catalog entries from previous execution.

- Required: No
- Restrictions: None

JOURNAL-DSN \( (dataset \ name) \) or JOURNAL-DDN \( (ddname) \)

This parameter supplies either the data set name of the IMS Cloning Tool journal file, or a DD name assumed via the JCL to point at a journal data set.

If multiple IMS Cloning Tool setups are used for different volume groups, DO NOT use the same journal data set. Each IMS Cloning Tool 'application' needs a different journal data set.
The journal is used to pass information between IMS Cloning Tool steps (e.g., from the COPY step to the RENAME step). Therefore, as noted in the JCL comments, it must be cataloged in the COPY step when first created, and referenced as OLD in subsequent steps.

Do not delete the data set in the last step, in case restarts or reruns need journal information. It is preferable to delete and replace the data set only at the fresh start of a COPY.

• Default: None
• Required: Yes
• Restrictions: None

**BCSCLEAN Step JCL Example**

For completeness and to illustrate where JCL parameters and IMS Cloning Tool control statements must match, the following JCL includes sample IMS Cloning Tool control statements.

Note that the 'BCSRECS' data set specified in the JCL contains the list of catalog entries to be deleted.

The BCSCLEAN step JCL is shown in the following example. The numbers preceding the JCL correspond to notes, (following this sample JCL) containing an explanation of the line of JCL.

```plaintext
//??????? JOB ,,'GCL BCSCLEAN',CLASS=A,MSGCLASS=X
  //S1 EXEC PGM=GCL00010,REGION=8M
  //STEP LIB DD DSN=HLQ?.SGCLLOAD,DISP=SHR
  //GCLINI DD DSN=HLQ?.SGCLPARM(GCLINI),DISP=SHR
  //BCSRECS DD DSN=GCL.WRK.BCSRECS,DISP=SHR
  //GCLPRINT DD SYSOUT=*
      //SYSUDUMP DD SYSOUT=*          
  //JOURNAL DD DSN=GCL.JRNL,DISP=OLD
      //GCLIN DD *                  
      BCSCLEAN                   
      //JOURNAL-DDN(JOURNAL)
      //*                       
```

1. Execution of IMS Cloning Tool main program.
2. IMS Cloning Tool SGCLLOAD library must be authorized.
3. DD for GCLINI, member of the SGCLPARM library. The GCLINI member of the SGCLPARM library provides variables to the IMS Cloning Tool programs. The GCLINI member also contains the product security license codes.
4. DD for BCSRECS. The BCSRECS data set contains the names of data sets cataloged in a previous RENAME step. The names contained in this data set determine the catalog entries to be deleted by BCSCLEAN.
5. DD for GCLPRINT output.
6. Journal data set used by IMS Cloning Tool commands. This VSAM data set is used to pass information between IMS Cloning Tool steps, and to log information derived from the step executions. The journal file is allocated and cataloged in the COPY step and used as input and output by the RENAME step. The specified data set name must match the data set allocated in the COPY step. If multiple IMS Cloning Tool setups are used for different groups of volumes, take care in specifying the journal data sets for each setup. In the sample JCL, the control statement JOURNAL-DDN(JOURNAL) specifies that a DD with the name JOURNAL is being used rather than a data set name.
This command is required. COPY invokes volume copies via FlashCopy or SnapShot if the DATA-MOVER(PGM(ADRDSUU)) is specified, invokes volume copies via TimeFinder/Clone Mainframe SNAP Facility if the DATA-MOVER(PGM(EMCSNAP)) is specified, or assumes copies have been created by the user if DATA-MOVER(PGM(NONE)) is specified. In either case, COPY captures catalog data pertaining to source volume data sets.

Note: The ICF catalog backup can be postponed until after COPY by using the USERCATALOGS-NOBACKUP keyword. However, if you choose to postpone the backup, the source ICF catalog information being backed up needs to be in synchronization with the contents of the copied volumes. If USERCATALOGS-NOBACKUP is used (so the source ICF catalogs are backed up after COPY by UCATOPTIONS BACKUP), the user must ensure that the source ICF catalogs are logically at the same point in time as when the volumes were copied.

COPY Command Syntax

COPY

Required Keywords:

{ JOURNAL-DSN( dataset name ) | JOURNAL-DDN( ddname ) } 
USERCATALOGS( sourcecat1 [ ( volser1 ) ] targetcat1 ...[ , sourcecatn 
[ ( volsern ) ] targetcatn ] ) 
USERCATALOGS-DDN( ddname ) 
USERCATALOGS-NOBACKUP( sourcecat1 [ ( volser1 ) ] targetcat1 ...[ , sourcecatn 
targetcatn ] ) 
USERCATALOGS-BACKUPFIRST( sourcecat1 targetcat1 ...[ , sourcecatn 
targetcatn ] ) 
NOUSERCATALOGS

Required only if DATA-MOVER(PGM(ADRDSUU)) is specified (FlashCopy or SnapShot) or DATA-MOVER(PGM(EMCSNAP)) is specified (EMC Snap):

{ [ FROM-STORAGEGROUP( storgrp1 | storgrpmask1 ...[ , storgrpn | storgrpmaskn ] ) ] 
[ FROM-VOLSER( volser1 | volmask1 ...[ , volsern | volmaskn ] ) ] 
[ FROM-VOLSER-DDN( ddname ) ] } 
{ [ TO-STORAGEGROUP( storgrp1 | storgrpmask1 ...[ , storgrpn | storgrpmaskn ] ) ] 
[ TO-VOLSER( volser1 | volmask1 ...[ , volsern | volmaskn ] ) ] 
[ TO-VOLSER-DDN( ddname ) ] } 

Required only if DATA-MOVER(PGM(NONE)) is specified:

{ VOLPAIRS( sourcevolser1 targetvolser1 ...[ , sourcevolsern targetvolsern ] ) | 
VOLPAIRS-DDN( ddname ) | 
VOLPAIRSDEVN( sourcevolser1 targetvolser1 devn1 ...[ , sourcevolsern targetvolsern devnn ] ) | 
VOLPAIRSDEVN-DDN( ddname ) | 
VOLPAIRSDEVN-NOCLIP( sourcevolser1 targetvolser1 devn1 
, sourcevolsern targetvolsern devnn [ , ... ] ) | 
VOLPAIRSDEVN-NOCLIP-DDN( ddname ) }

Required only if USERCATALOGS or USERCATALOGS-NOBACKUP is specified:

CATWORK-DSN( mask )

Optional Keywords:

CATWORK-ATTR( UNIT( SYSALLDA ) SPACE( 10 10 ) CYLINDERS ) 
DATA-MOVER( PGM( ADRDSUU | EMCSNAP | NONE ) ) 
[ , BACKGROUNDCOPY( NO | YES ) ] 
[ , CHECKONLINEPATHSTATUS( NO | YES ) ]
About Source and Target Catalog Names

It is valid for source and target catalog names to be the same. If source and target catalog names are the same, the target catalog will be populated. See the RECATALOG option of the "RENAME" on page 234 command, and the "BCSCLEAN" on page 186 command.

For example, when:

- Source volumes contain data sets named A1... and B1...:
- Alias A1 points to UCATA1 and alias B1 points to UCATB1
- Alias A2 points to UCATA2 and alias B2 points to UCATB2
- Rename masks (see "RENAME" on page 234): A1.** A2.** B1.** B2.**

Then:

1. Any source volume data sets matching A1.** are renamed to A2.**.
2. A2.** data sets are cataloged to UCATA2 because source data sets A1.** were found to be cataloged in UCATA1.
3. Any source volume data sets matching B1.** are renamed to B2.**.
4. B2.** data sets are cataloged to UCATB2 because source data sets B1.** were found to be cataloged in UCATB1.

Note: Catalog data must be captured that reflects the status of the source volume data sets at the time of the copies. Some data needed to catalog renamed data sets, such as catalog PATH entries and GDG base records, exist in the catalog only. IMS Cloning Tool does not attempt to ascertain involved catalogs automatically, due to the time this would take and the consequent delay of source volume access.

FlashCopy for Backups

When IMS Cloning Tool executes the COPY command, it uses the FlashCopy default of 'background COPY' from the source to target volume after the logical completion occurs.
If you want to copy and rename the target volume data sets to be used as input to a backup, FlashCopy's 'NO background COPY' (FCNOCOPY) should be used. If you take a point-in-time copy using FlashCopy, and the target volume is only needed for a short time, such as for input to a backup, copying tracks that haven't changed would be a waste of resources compared to just using the pointer to the corresponding source volume data set. This concept is called 'NO background COPY'. The 'before image' of tracks that change on the source volume must in fact be created on the target. But, assuming that a DFSMSdss or FDR DUMP of the target volume is started just after the FlashCopy initiation is complete, most likely not many source volume tracks will change in the time it takes the backup to finish.

When the backup is finished however, this NO background COPY process should be stopped to prevent changed data from continually being copied to the target volume.

If you use DFSMSdss to back up the FlashCopy target, a DFSMSdss DUMP parameter, FlashCopy Withdraw (FCWITHDRAW), can be used on the DFSMSdss DUMP to tell DSS to withdraw the FlashCopy relationship when the backup is complete. If you use FDR as your dump tool, IMS Cloning Tool provides the COPYCHECK WITHDRAW command to withdraw the FlashCopy relationship. For more information, see "COPYCHECK" on page 204.

Note: If either the source or target volumes are extensively updated during the backup, this option should not be used because excessive overhead will occur when copying changed tracks to the target before allowing the update to occur.

COPY Command & Keyword Definitions

COPY  The COPY command initiates volume copies and in parallel, backs up the source ICF catalogs that point to data sets on the source volumes being cloned.
  • Required: Yes
  • Restrictions: None

CATWORK-DSN ( mask )
  Specifies a mask used to derive data sets names for catalog backup data sets dynamically allocated during the COPY step.

  The mask must include an asterisk (*) as one qualifier. IMS Cloning Tool will create data sets by substituting two eight-byte qualifiers in place of the provided asterisk. Because 17 bytes (8+.+8) of the name will be generated, the user is responsible for ensuring the resolved names do not exceed 44 characters.

  For example, CATWORK-DSN(MAINSTAR.GCL.CATWORK.*) will cause data sets to be created such as:
  MAINSTAR.GCL.CATWORK.UCATBKUP.BKP00001

  The asterisk in the mask does not need to be the lowest level qualifier.
  (e.g., CATWORK(MAINSTAR.GCL.CWORK.*.DATA)
  • Default: None
  • Required: Required only if USERCATALOGS or USERCATALOGS-NOBACKUP is specified.
  • Restrictions: None
  • Short form: CWDSN
**JOURNAL-DSN** (*dataset name*)
or **JOURNAL-DDN** (*ddname*)

Optional syntax is: JRNL-DSN or JRNL-DDN

This parameter supplies either the data set name of the IMS Cloning Tool journal file, or a DD name assumed via the JCL to point at a journal data set.

If multiple IMS Cloning Tool setups are used for different volume groups, DO NOT use the same journal data set. Each IMS Cloning Tool 'application' needs a different journal data set.

The journal is used to pass information between IMS Cloning Tool steps (e.g., from the COPY step to the RENAME step). Therefore, as noted in the JCL comments, it must be cataloged in the COPY step when first created, and referenced as OLD in subsequent steps.

Do not delete the data set in the last step, in case restarts or reruns need journal information. It is preferable to delete and replace the data set only at the fresh start of a COPY.

- Default: None
- Required: Yes
- Restrictions: None
- Short form: JRNL-DSN JRNL-DDN

**USERCATALOGS** (*sourcecat1 [ ( volser1 ) ] targetcat1 ... [ , sourcecatn [ ( volsern ) ] targetcatn ]*)

This parameter specifies source ICF catalogs that data sets from source (from) volumes are cataloged in, and the corresponding target catalog that renamed volume data sets are to be cataloged in.

ICF catalog names are specified in pairs of source and target. For each renamed data set, the USERCATALOGS list is searched for the catalog the source volume data set was cataloged in. The renamed data set is cataloged in the corresponding target catalog.

The source ICF catalogs specified must include all ICF catalogs that any data set being copied and renamed could be cataloged in.

Target ICF catalogs used to catalog the renamed data sets cannot reside on a target volume during the timeframe from the volume copy through the completion of the RENAME step. If desired, you can move the target ICF catalog(s) from the target volume prior to the volume copy, and move the target ICF catalog(s) back to the target volume after the RENAME has completed.

If you specify the VOLSER with the source ICF catalog name, the source catalog will be backed up from its copy on the corresponding target volume. The VOLSER specified is the source volume where the source ICF catalog resides. The volume where the source ICF catalog resides must be included as one of the source volumes being copied. The VOLSER of the source ICF catalog is specified because when IMS Cloning Tool does the volume pairing, there is no guarantee the source volume will be paired to the same target volume for every cloning. IMS Cloning Tool uses the volume pairing information to determine the target volume VOLSER that corresponds with the specified source volume VOLSER.

- Default: None
- Required: Yes
Restrictions: Mutually exclusive with NOUSERCATALOGS, USERCATALOGS-NOBACKUP, USERCATALOGS-DDN and USERCATALOGS-BACKUPFIRST.

Short form: UCATS

USERCATALOGS-DDN(ddname)
This parameter specifies the DD name which points to a file containing user catalog pairs. The pairs are the same format as in the USERCATALOGS keyword.

USERCATALOGS-DDN must have an LRECL of 80, and must not contain sequence numbers in columns 73 - 80.

Default: None

Required: Yes

Restrictions: Mutually exclusive with USERCATALOGS, NOUSERCATALOGS, USERCATALOGS-NOBACKUP, and USERCATALOGS-BACKUPFIRST.

Short form: UCATSDDN

USERCATALOGS-NOBACKUP (sourcecat1 [ (volser1) ] targetcat1 ... [ , sourcecatn [ (volsern) ] targetcatn ])
This parameter specifies source catalogs that data sets from source (from) volumes are cataloged in, and the corresponding target catalog that renamed volume data sets are to be cataloged in.

ICF catalog names are specified in pairs of source and target. For each renamed data set, the USERCATALOGS list is searched for the ICF catalog the source volume data set was cataloged in. The renamed data set is cataloged in the corresponding target catalog.

The source ICF catalogs specified must include all ICF catalogs that any data set being copied and renamed could be cataloged in.

Target ICF catalogs used to catalog the renamed data sets cannot reside on a target volume during the timeframe from the volume copy through the completion of the RENAME step. If desired, you can move the target ICF catalog(s) from the target volume prior to the volume copy, and move the target ICF catalog(s) back to the target volume after the RENAME has completed.

If you specify the VOLSER with the source ICF catalog name, the source catalog will be backed up from its copy on the corresponding target volume. The VOLSER specified is the source volume where the source ICF catalog resides. The volume where the source ICF catalog resides must be included as one of the source volumes being copied. The VOLSER of the source ICF catalog is specified because when IMS Cloning Tool does the volume pairing, there is no guarantee the source volume will be paired to the same target volume for every cloning. IMS Cloning Tool uses the volume pairing information to determine the target volume VOLSER that corresponds with the specified source volume VOLSER.

The source catalogs will not be backed up by COPY. The source catalogs will be backed up when UCATOPTIONS BACKUP is run. The backup of the source catalogs with UCATOPTIONS BACKUP must happen prior to running the RENAME command. If VOLSER is specified for the source catalog, UCATOPTIONS BACKUP will make its backup from the copies of the source catalogs on the target volumes. If VOLPAIRSDEVN-NOCLIP or VOLPAIRSDEVN-NOCLIP-DDN are used with USERCATALOGS-
NOBACKUP, VOLOPTIONS OFFLINECLIP must be run before UCATOPTIONS BACKUP which must be run before the RENAME command.

**Note:** The ICF catalog backup can be postponed until after COPY by using the USERCATALOGS-NOBACKUP keyword. However, if you choose to postpone the backup, the source ICF catalog information being backed up needs to be in synchronization with the contents of the copied volumes. If USERCATALOGS-NOBACKUP is used (so the source ICF catalogs are backed up after COPY by UCATOPTIONS BACKUP), the user must ensure that the source ICF catalogs are logically at the same point in time as when the volumes were copied.

- Default: None
- Required: Yes
- Restrictions: Mutually exclusive with NOUSERCATALOGS, USERCATALOGS, USERCATALOGS-DDN, and USERCATALOGS-BACKUPFIRST.
- Short form: UCATSNB

**USERCATALOGS-BACKUPFIRST ( sourcecat1 targetcat1 ... [ , sourcecatn targetcatn ] )**

This parameter specifies source ICF catalogs that data sets from source (from) volumes are cataloged in, and the corresponding target catalog that renamed volume data sets are to be cataloged in.

ICF catalog names are specified in pairs of source and target. For each renamed data set, the USERCATALOGS list is searched for the catalog the source volume data set was cataloged in. The renamed data set is cataloged in the corresponding target catalog.

The source ICF catalogs specified must include all ICF catalogs that any data set being copied and renamed could be cataloged in.

Target ICF catalogs used to catalog the renamed data sets cannot reside on a target volume during the timeframe from the volume copy through the completion of the RENAME step. If desired, you can move the target ICF catalog(s) from the target volume prior to the volume copy, and move the target ICF catalog(s) back to the target volume after the RENAME has completed.

The source ICF catalogs will be backed up before the target volumes are processed by the COPY command.

- Default: None
- Required: Yes
- Restrictions: Mutually exclusive with NOUSERCATALOGS, USERCATALOGS, USERCATALOGS-DDN, and USERCATALOGS-NOBACKUP.
- Short form: UCATSBF

**NOUSERCATALOGS**

Specifies that the COPY will not include the backing up of any ICF catalogs. RENAME is not possible when NOUSERCATALOGS is used.

- Default: None
- Required: No
Restrictions: Mutually exclusive with USERCATALOGS, USERCATALOGS-DDN, USERCATALOGS-NOBACKUP and USERCATALOGS-BACKUPFIRST.

Short form: NOUCATS

FROM-STORAGEGROUP ( stgrp1 | stgrpmask1 ... | stgrpn | stgrpmaskn )
Optional syntax: FROMSTORAGEGROUP

Specifies the input volumes to be copied from one or more SMS storage group definitions or storage groups matching a mask. All volumes from the storage groups specified will be copied, except any volumes excluded via the EXCLUDE-FROM-VOLSER parameter.

IMS Cloning Tool will match source volumes with target volumes, in keeping with the requirement that each pair is in the same ESS subsystem and LSS (if ESS FlashCopy V1, same partition if RVA), same track format, and same volume size.

• Default: None
• Required: Required only if DATA-MOVER(PGM(ADRDSSU)) is specified (FlashCopy or SnapShot).
• Restrictions: Valid only with DATA-MOVER(PGM(ADRDSSU))
• Short form: FRS

FROM-USER-STORAGEGROUP ( stgrp1 | stgrpmask1 ... | stgrpn | stgrpmaskn )
Optional syntax: FROMUSERSTORAGEGROUP

Specifies the input volumes to be copied from one or more user storage group definitions or storage groups matching a mask. All online volumes from the storage groups specified will be copied, except any volumes excluded via the EXCLUDE-FROM-VOLSER parameter.

An input (source) storage group may only be specified or referred to once per execution. IMS Cloning Tool will match source volumes with target volumes, in keeping with the requirement that each pair is in the same ESS subsystem and LSS (if ESS FlashCopy V1, same partition if RVA), same track format, and same volume size.

The storage group definitions that are used will be read from the DD statement defined by the USERSGDEFS-DDN keyword.

• Default: None
• Required: Required only if DATA-MOVER(PGM(ADRDSSU)) is specified (FlashCopy or SnapShot).
• Restrictions: Valid only with DATA-MOVER(PGM(ADRDSSU))
• Short form: FRUS

FROM-VOLSER ( volser1 | volmask1 ... | volsern | volmaskn )
Optional syntax: FROMVOLSER

Specifies the input volumes to be copied, either by discrete volume serial numbers or volume serial masks (e.g., TSO*). See the EXCLUDE-FROM-VOLSER keyword to exclude VOLSERs from a list.

IMS Cloning Tool will match source volumes with target volumes, in keeping with the requirement that each pair is in the same ESS subsystem and LSS (if ESS FlashCopy V1, same partition if RVA), same track format, and same volume size.
If TO-VOLSER is used in conjunction with FROM-VOLSER, volumes will pair one-for-one (i.e., 1st FROM VOLSER to 1st TO VOLSER, etc.), if the pairing requirements permit this to happen.

- Default: None
- Required: Required only if DATA-MOVER(PGM(ADRDSSU)) is specified (FlashCopy or SnapShot).
- Restrictions: If DATA-MOVER(PGM(NONE)) is used, a volume mask cannot be specified.
- Short form: FRV

TO-STORAGEGROUP (storgrpl storgrpmskl ...|, storgrpn storgrpmskn )
Optional syntax: TOSTORAGEGROUP
Specifies that output volumes needed to pair with input volumes are to be selected from one or more SMS storage groups or storage groups matching a mask. All volumes from the storage groups specified are target candidates, except any volumes excluded via the EXCLUDE-TO-VOLSER parameter.

IMS Cloning Tool will match source volumes with target volumes, in keeping with the requirement that each pair is in the same ESS subsystem and LSS (if ESS FlashCopy V1, same partition if RVA), same track format, and same volume size.

If FROM-STORAGE is used, IMS Cloning Tool will attempt to match volumes using the same positioned storage group names.

- Default: None
- Required: Required only if DATA-MOVER(PGM(ADRDSSU)) is specified (FlashCopy or SnapShot).
- Restrictions: Valid only with DATA-MOVER(PGM(ADRDSSU))
- Short form: TOS

TO-USER-STORAGEGROUP (storgrpl storgrpmskl ...|, storgrpn storgrpmskn )
Optional syntax: TOUSERSTORAGEGROUP
Specifies that output volumes needed to pair with input volumes are to be selected from one or more user storage groups or storage groups matching a mask. All online volumes from the storage groups specified are target candidates, except any volumes excluded via the EXCLUDE-TO-VOLSER parameter. IMS Cloning Tool will match source volumes with target volumes, in keeping with the requirement that each pair is in the same ESS subsystem and LSS (if ESS FlashCopy V1, same partition if RVA), same track format, and same volume size.

If FROM-USER-STORAGEGROUP is used, IMS Cloning Tool will attempt to match volumes using the same positioned storage group names listed in TO-USER-STORAGEGROUP. If a hardware difference or other issue results in a FROM-USER-STORAGEGROUP volume that does not match its TO-USER-STORAGEGROUP counterpart, the TO-USER-STORAGEGROUP volume is skipped. IMS Cloning Tool then attempts to match the FROMUSER-STORAGEGROUP volume with the next TO-USERSTORAGEGROUP volume in the list.

- Default: None
- Required: Required only if DATA-MOVER(PGM(ADRDSSU)) is specified (FlashCopy or SnapShot).
• Restrictions: Valid only with DATA-MOVER(PGM(ADRDSSU))
• Short form: TOUS

**TO-VOLSER** ( `volser1 | volmask1 ..[, volsern | volmaskn ]` )

Optional syntax: TOVOLSER

Specifies target volumes to be paired with input volumes.

IMS Cloning Tool will match source volumes with target volumes, in keeping with the requirement that each pair is in the same ESS subsystem and LSS (if ESS FlashCopy V1, same partition if RVA), same track format, and same volume size. If TO-VOLSER is used in conjunction with FROM-VOLSER, volumes will pair one-for-one (i.e., 1st FROM VOLSER to 1st TO VOLSER etc.), if the pairing requirements permit this to happen.

- Default: None
- Required: Required only if DATA-MOVER(PGM(ADRDSSU)) is specified (FlashCopy or SnapShot).
- Restrictions: If DATA-MOVER(PGM(NONE)) is used, a volume mask cannot be specified.
- Short form: TOV

**USERSGDEFS-DDN** ( `ddname` )

Specifies a DD name which points to a file containing the user storage group definitions that will be used by the FROM-USER-STORAGEGROUP and TO-USER-STORAGEGROUP keywords. The USERSGDEFS-OFFSET keyword is used to specify the offsets of the fields within the records.

The file must have an LRECL of 80. A comment record is denoted by a blank or * in column 1 or a /* in columns 1 and 2.

- Default: None
- Required: Required only if FROM-USER-STORAGEGROUP or TO-USER-STORAGEGROUP are specified.
- Restrictions: Used only if FROM-USER-STORAGEGROUP or TO-USER-STORAGEGROUP are specified.

**USERSGDEFS-OFFSETS** ( `INCLEXCL(nn), SGNAME(nn), VOLSER(nn)` )

Specifies the offsets in the record that the fields will be found. These fields are used for the user storage group definitions that will be used by the FROM-USER-STORAGEGROUP and TO-USER-STORAGEGROUP keywords. The offsets specified can be from 1 to 72 inclusive, with 1 being the first character position in the record.

INCLEXCL specifies the offset where the 1-character include/exclude indicator can be found. A value of blank or I indicates an include definition. A value of E or X indicates an exclude definition. SGNAME specifies the offset where the 8-character storage group name can be found. VOLSER specifies the offset where the 6-character volser or volser mask can be found. For example: Using USERSGDEFS-OFFSETS(`VOLSER(1), INCLEXCL(8), SGNAME(10)`) and USERSGDEFS-DDN file containing the records:

```
SRC00*  SGRSRC01
SRC006  E  SGRSRC01
TGT01*  I  SGTGT01
TGT02*  I  SGTGT01
TGT015  X  SGTGT01
TGT025  X  SGTGT01
```
FROM-USER-STORAGEGROUPS( SGSRC01 ) would resolve to all online DASD volumes that match the mask SRC00* except for SRC006 which would be excluded.

TO-USER-STORAGEGROUPS( SGTGT01 ) would resolve to all online DASD volumes that match the masks TGT01* and TGT02* except that TGT015 and TGT025 would be excluded.

- Default: None
- Required: Required only if FROM-USER-STORAGEGROUP or TO-USER-STORAGEGROUP are specified.
- Restrictions: Used only if FROM-USER-STORAGEGROUP or TO-USER-STORAGEGROUP are specified.

**VOLPAIRS** ( sourcevolser1 targetvolser1 ... [, sourcevolsern targetvolsern ] )

Optional syntax:
- VOLPAIRS-DDN( ddname ) |
- VOLPAIRSDEVN ( sourcevolser1 targetvolser1 devn1 ... [, sourcevolsern targetvolsern devnn ] )
- VOLPAIRSDEVN-DDN( ddname ) |
- VOLPAIRSDEVN-NOCLIP ( sourcevolser1 targetvolser1 devn1 ... [, sourcevolsern targetvolsern devnn ] )
- VOLPAIRSDEVN-NOCLIP-DDN ( ddname )

**VOLPAIRS** specifies volume pairs where the target volumes have been created by the user before the IMS Cloning Tool COPY command is executed. Target volumes must have the desired internal VOLSER (not the VOLSER of the source volume) and be online. Discrete VOLSERs only, no masking allowed. Short form is VP.

**VOLPAIRS-DDN** specifies a DD name which points to a file containing the volume pairs. The pairs are the same format as in the VOLPAIRS keyword. VOLPAIRS-DDN must have an LRECL of 80, and must not contain sequence numbers in columns 73-80.

**VOLPAIRSDEVN** specifies volume pairs with the device number of the target volume where target volumes have been created by the user before the IMS Cloning Tool copy command is executed. Target volumes must be offline and the internal VOLSER must match the corresponding source VOLSER specified. IMS Cloning Tool will re-label the specified device (devn) to the corresponding target VOLSER and vary the volume online. Short form is VPD.

**VOLPAIRSDEVN-DDN** specifies a DD name which points to a file containing the volume pairs. The pairs are the same format as in the VOLPAIRSDEVN keyword. VOLPAIRSDEVN-DDN must have an LRECL of 80, and must not contain sequence numbers in columns 73-80.

**VOLPAIRSDEVN-NOCLIP** specifies volume pairs with the device number of the target volume where target volumes have been created by the user before the IMS Cloning Tool COPY command is executed. Target volumes must be offline and the internal VOLSER must match the corresponding source VOLSER specified. COPY will not re-label the specified device (devn) or vary the volume online. The VOLOPTIONS OFFLINECLIP command can be used to re-label the specified target devices and vary the volumes online. The re-label and vary online of the target volumes with VOLOPTIONS OFFLINECLIP must happen prior to running the RENAME command. If VOLPAIRSDEVN-NOCLIP or VOLPAIRSDEVN-NOCLIP-
DDN are used with USERCATLOGS-NOBACKUP, VOLOPTIONS OFFLINECLIP must be run before UCATOPTIONS BACKUP which must be run before the RENAME command.

**VOLPAIRSDEVN-NOCLIP-DDN** specifies a ddname which points to a file containing the volume pairs. The pairs are the same format as in the VOLPAIRSDEVN-NOCLIP keyword. VOLPAIRSDEVN-NOCLIP-DDN must have an LRECL of 80, and must not contain sequence numbers in columns 73-80.

- **Default:** None
- **Required:** One of the VOLPAIRS keywords is required only if DATA-MOVER(PGM(NONE)) is specified.
- **Restrictions:** Valid only with DATA-MOVER(PGM(NONE)).
- **Short form:** FRV

**CATWORK-ATTR (catalog backup allocation attributes)**

Specifies allocation attributes used when catalog backup data sets are dynamically allocated. Unless unusual attributes are desired for a specific IMS Cloning Tool COPY, these attributes can be globally specified in the HLQ.SGCLPARM.GCLINI member, :COPY_OPTIONS section, CATWORK-ATTR token. Allocation attributes are specified in TSO allocate syntax (e.g., UNIT(SYSDA) SPACE(1 1) TRACKS, etc.).

The attributes that can be specified include:

- **DATACLASS(data class name)**
- **MGMTCLASS(management class name)**
- **SPACE(quantity increment)**
- **STORCLASS(storage class name)**
- **TRACKS/CYLINDERS UNIT(unit)**
- **VOLUME(serial)**

If an initial attempt running COPY fails because a catalog backup data set exceeds extents, increase the allocation and run again. Once successful, examine the space actually used and decrease if desired. To accommodate a future increase in the size of catalogs, leave the allocation with room to spare.

- **Default:** UNIT(SYSLDAA) SPACE(10 10) CYLINDERS
- **Required:** No.
- **Restrictions:** None
- **Short form:** CWATTR

**DATA-MOVER ( [ PGM( ADRDSSU | EMCSNAP | NONE) ] [ , CHECKVTOC ] [ , COPYCMDLIMIT( nnn | 2 4) ] [ , FASTREP( PREF | REQ | NONE ) ] [ , FCNOCOPY ] [ , FCTOPPARCH | NOCONCURRENT ] )**

**DATA-MOVER ( [ PGM( ADRDSSU | CHECKVTOC ) ] [ , COPYCMDLIMIT( nnn | 24 ) ] [ , FASTREP( PREF | REQ | NONE ) ] [ , FCNOCOPY ] [ , FCTOPPARCH | NOCONCURRENT ] )**

**DATA-MOVER ( [ PGM( ADRDSSU | CHECKVTOC | EMCSNAP ) ] [ , COPYCMDLIMIT( nnn | 24 ) ] [ , FASTREP( PREF | REQ | NONE ) ] [ , FCNOCOPY ] [ , FCTOPPARCH | NOCONCURRENT ] )

Specifies the program to be used to initiate copies and copy options. The values specified for the subkeywords depend on the value specified in PGM: ADRDSSU, EMCSNAP, or NONE.
- **PGM (ADRDSSU)** specifies that COPY is to initiate FlashCopy or SnapShot 'under the covers' via execution of DSS. It is the default and therefore the PGM(ADRDSSU) keyword can be omitted. IMS Cloning Tool invokes DSS 'under the covers' to initiate volume copies with the COPY FULL option. Users should be acquainted with the DSS rules governing copy full operations (IBM publication Advanced Copy Services, Combining Storage Control Copy Operations).

For a COPY FULL operation, DSS determines by the device types of the volumes to be copied what copy mechanism is to be used. IMS Cloning Tool pairs volumes, so that FlashCopy or SnapShot should be used, and confirms at the time of the COPY step that conflicting relationships do not exist. However, because of the small window between IMS Cloning Tool's volume pairing and relationship validation, DSS errors and associated messages may need to be examined.

IMS Cloning Tool COPY command supplies the ADMINISTRATOR operand when invoking DFSMSdss. To avoid WTORs, ADRDSSU ADMINISTRATOR is used to gain permission to overlay the target volume VTOCIX and/or VVDS during the COPY process.

Because the ADMINISTRATOR operand is generated, FACILITY class must be active, the applicable FACILITY-class profile must be defined, and you must have READ access to that profile.

When PGM(ADRDSSU) is specified, the following subkeywords can be specified:

- **CHECKVTOC** (DSS parameter): Specifies that a VTOC analysis of the source volume be performed during copy processing.

- **COPYCMDLIMIT( mmm | 24 )** (IMS Cloning Tool parameter):
  Specifies the maximum COPY FULL commands built by IMS Cloning Tool for each DSS execution. 24 is the default if omitted. If the number of volumes to be copied exceeds the COPYCMDLIMIT, IMS Cloning Tool will invoke DSS as many times as necessary. Adjusting this value may affect the performance of ESS copy initiations.

- **FASTREP** (DSS parameter): Indicates if fast replication is preferred (PREF), required (REQ), or not required (NONE). IMS Cloning Tool will set up the source/target pairs for a fast replication if PREF or REQ is specified. IMS Cloning Tool will allow a normal copy if NONE is specified. If the level of ADRDSSU indicates it supports this keyword, the keyword will be passed to ADRDSSU.

- **FCNOCOPY**: (DSS parameter) Indicates that no background copy should be done for the volume pair. This applies to ESS devices only.

**Note:** When using FCNOCOPY, you must terminate the FlashCopy source and target relationship at the completion of the backup. Either use the DFSMSdss DUMP parameter FCWITHDRAW, or use COPYCHECK WITHDRAW. Following the withdraw, some of the tracks on the volume may contain data from the source volume, while other tracks may contain residual data that was on the target volume before the copy. This situation can cause problems when trying to access the target volume if the VTOC locations of the source and target volumes were different before the copy.

- **FCTOPPRCPRIMARY** (DSS parameter): Indicates that a FlashCopy target volume can also be a PPRC primary volume. This applies to ESS devices only. This does not apply when FASTREP(NONE) is also specified.
- **NOCONCURRENT** (DSS parameter): Specifies that the CONCURRENT option will not be supplied to ADRDSSU. This will prevent ADRDSSU from using Concurrent Copy when doing the volume copies.

- **PGM(EMCSNAP)** specifies that COPY is to initiate EMC SNAP ‘under the covers’ via TimeFinder/Clone Mainframe SNAP Facility. IMS Cloning Tool invokes EMC SNAP ‘under the covers’ to initiate volume copies using SNAP VOLUME commands. Users should be acquainted with the EMC rules governing SNAP VOLUME operations (EMC publication TimeFinder/Clone Mainframe SNAP Facility Product Guide). IMS Cloning Tool pairs volumes, so that EMC SNAP should be used, and confirms at the time of the COPY step that conflicting relationships do not exist. However, because of the small window between IMS Cloning Tool volume pairing and relationship validation, EMC SNAP errors and associated messages may need to be examined. When **PGM(EMCSNAP)** is specified, the following subkeywords can be specified:
  - **BACKGROUNDCOPY**: Indicates if background copy should be done (YES), or not (NO), for the volume pair. The default is YES.
  - **CHECKONLINEPATHSTATUS**: Indicates if a check that paths from other CPUs to the target devices are offline before performing a Volume Snap (YES) or not (NO). The default is NO.
  - **CONSISTENT**: Indicates to use Enginuity Consistency Assist (ECA) for consistent SNAP VOLUME operations (YES) or not (NO). The default is NO.
  - **DIFFERENTIAL**: Indicates to use the Enginuity Differential Snap feature for SNAP VOLUME operations (YES) or not (NO). The default is NO.
  - **MAXIMUM-SUBTASKS( number1, number2 )**: Sets an absolute maximum number of subtasks that can be attached and used. SNAP automatically limits the number of subtasks based on the requests specified and the low and high region available. SNAP never exceeds the limits specified in this parameter. number1 is the limit to the number of individual requests that can be processed simultaneously. The minimum value you can specify is two (2). The maximum value you can specify is 9999. number2 is the limit to the number of individual activities that can be performed within a single request, typically as the result of wildcards. The minimum value you can specify is two (2). The maximum value you can specify is 9999. If not specified the system defaults are used.

  - Default: For PGM, the default is ADRDSSU. For COPYCMDLIMIT, the default is 24. For FASTREP, the default is REQ. For BACKGROUND COPY, the default is YES. For CHECKONLINEPATHSTATUS, the default is NO. For CONSISTENT, the default is NO. For DIFFERENTIAL, the default is NO.

  - Required: No.

  - Restrictions: None.

  - Short form(s): DM, CHECK, CCL, FR, FCNC, FCTOPPRCP, NOCC

**EXCLUDE-FROM-VOLSER ( volser1 | volmask1 ...[ volsern | volmaskn ] )**
Optional syntax: EXCLUDEFROMVOLSER
Specifies volumes or volumes matching a mask, to be excluded from being specified for either the FROM-VOLSER parameter, or the FROM-STORAGEGROUP parameter.

- Default: None
- Required: No
- Restrictions: Not valid with VOLPAIRS, VOLPAIRSDEVN, VOLPAIRSDEVN-DDN, VOLPAIRSDEVN-NOCLIP, or VOLPAIRSDEVN-NOCLIP-DDN.
- Short form: EXCFRV

**EXCLUDE-TO-VOLSER** (volser1 | volmask1 ...[volsern | volmaskn])

Optional syntax: EXCLUDETOVOLSER

Specifies volumes or volumes matching a mask, to be excluded (not selected as targets) from being specified for either the TO-VOLSER parameter or the TO-STORAGEGROUP parameter.

If the ‘eliminated’ target volumes cause there to be more source volumes than targets, the COPY will fail.

If the ‘eliminated’ target volumes still leave at least as many target volumes as source volumes, the pairing will continue as usual.

- Default: None
- Required: No.
- Restrictions: Not valid with VOLPAIRS, VOLPAIRSDEVN, VOLPAIRSDEVN-DDN, VOLPAIRSDEVN-NOCLIP, or VOLPAIRSDEVN-NOCLIP-DDN.
- Short form: EXCTOV

**SIMULATE**

For DATAMOVER(PGM(ADRDSSU), SIMULATE specifies that the COPY step is to perform all functions except actual initiation of copies. This option is recommended for new IMS Cloning Tool setups or when modifications to the setup are made.

SIMULATE will verify syntax, match source to target volumes, display DSS COPY FULL commands (but not initiate the copies), and back up user catalogs. User catalogs are backed up to enable the SIMULATE option of the RENAME step.

Note that in the process of pairing volumes, the logic is exercised to assure that the same ESS subsystem, LSS (FlashCopy V1), and volume size requirements permit all source volumes to be paired with targets. If discrete volumes are specified, and one-for-one pairing is desired, the simulated COPY FULL commands will verify whether pairing requirements were satisfied for a one-for-one pairing. For DATAMOVER(PGM(NONE), SIMULATE specifies that the COPY step checks syntax, and backs up the source ICF Catalogs for input to RENAME SIMULATE.

- Default: None.
- Required: No.
- Restrictions: None.

**SOURCESONLINE(Y | N)**

IMS Cloning Tool COPY command will expect to locate the source volumes online. If N is specified, IMS Cloning Tool COPY will not expect to find all the source volumes online.
**Note:** If N is specified and the source volumes are not online, the source user catalogs must still be available to the IMS Cloning Tool COPY command.

- Default: Y
- Required: No.
- Restrictions: Valid only with VOLPAIRS, VOLPAIRS-DDN, VOLPAIRSDEVN, VOLPAIRSDEVN-DDN, VOLPAIRSDEVN-NOCLIP, or VOLPAIRSDEVN-NOCLIP-DDN
- Short form: SRCON

**TARGETSONLINE(Y | N)**

IMS Cloning Tool COPY command will expect to locate the target volumes online. If N is specified, IMS Cloning Tool COPY will not expect to find all the target volumes online. If N is specified, IMS Cloning Tool COPY will not obtain information for the target volumes. IMS Cloning Tool RENAME will validate information for the target volumes.

- Default: Y
- Required: No.
- Restrictions: Valid only with VOLPAIRS.
- Short form: TGTON

**TARGETSUONLINE(Y | N)**

If Y is specified, IMS Cloning Tool COPY will expect to locate the target user catalogs. It will check that the security product will allow ALTER access to the target user catalogs.

If N is specified, IMS Cloning Tool COPY will not check for the existence / availability of the target user catalogs. IMS Cloning Tool RENAME will check that the target catalogs are available and will do the RACF checks.

- Default: Y
- Required: No.
- Short form: TGTUON

**TARGET-VOLS-SHOULD-BE-EMPTY(Y | N)**

Performs a check during the volume pairing process to ensure the target volumes are empty before issuing FlashCopy or SnapShot. In the event that a subsequent RENAME fails and the COPY must be rerun, IMS Cloning Tool will not clean off the target volumes if 'Y' was specified for this parameter. Either initialize the target volumes or change this keyword to 'N'.

- Default: N
- Required: No.
- Restrictions: Not valid with VOLPAIRS, VOLPAIRSDEVN, VOLPAIRSDEVN-DDN, VOLPAIRSDEVN-NOCLIP, or VOLPAIRSDEVN-NOCLIP-DDN.
- Short form: TVE

### Offline Volumes (with DATA-MOVER(PGM(ADRDSSU)) )

**Source volumes:**

- Discrete VOLSER specification: Must be found online, or COPY terminates with a return code 8.
- VOLSER mask specification: At least one online volume must be found that matches the mask, or COPY terminates with a return code 8.
• Storage group specification: At least one volume associated with the storage group must be online, or COPY terminates with a return code 8. A warning, return code 4, is generated if at least one volume is not found. Note that IMS Cloning Tool cannot tell the difference between a non-existent volume and an offline volume.

Target volumes (no matter how they are specified):
• If enough online volumes can be found to pair with source volumes, COPY will proceed.
• If target volumes are not found, but not needed, COPY will not complain.
• If fewer target volumes are found than needed to pair with source volumes, COPY will terminate with a return code 8.
• Because in some cases IMS Cloning Tool cannot distinguish between a non-existent volume and an offline volume, messages refer to these volumes as 'not found'.

COPY Step JCL Example

For completeness and to illustrate where JCL parameters and IMS Cloning Tool control statements must match, the following JCL includes sample IMS Cloning Tool control statements.

The COPY step JCL is shown in the following example. The numbers preceding the JCL correspond to notes, (following this sample JCL) containing an explanation of the line of JCL.

```
//???????? JOB , 'GCL COPY', CLASS=A, MSGCLASS=X
//S1 EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=*
//SYSIN DD *
1 DEL GCL.JRNL
2 DEL GCL.WRK.UCATBKUP.*
   SET MAXCC=0
3 //S1 EXEC PGM=GCL00010, REGION=8M
4 //STEPLIB DD DSN=HLQ.?SGCLLOAD, DISP=SHR
5 //GCLINI DD DSN=HLQ.?SGCLPARM(GCLINI), DISP=SHR
6 //GCLPRINT DD SYSOUT=*
   //SYSUDUMP DD SYSOUT=*
7 //JOURNAL DD DSN=GCL.JRNL, RECORG=KS, KEYLEN=64, KEYOFF=0,
   // DISP=(,CATLG), UNIT=SYSALLDA,
   // LRECL=600, SPACE=(CYL,(10,10))
   //GCLIN DD *
   COPY
   DATA-MOVER(
      COPYCMDLIMIT(24)
   )
   FROM-VOLSER(VSRC02)
   TO-VOLSER(VTGT02)
   USERCATALOGS(
      USERCAT.SRC01 USERCAT.TGT01
      USERCAT.SRC02 USERCAT.TGT02
   )
   2 CATWORK-DSN(GCL.WRK.* )
   7 JOURNAL-DDN(JOURNAL)
//*/
```

1. Deletion of journal data set in anticipation of allocating new for each execution. Because this data set is used to pass information from one IMS Cloning Tool step to another, do not delete the journal data set in any steps except the COPY step.
2. Deletion of catalog backup work data sets in anticipation of allocating new for each execution. The IMS Cloning Tool COPY step backs up each catalog specified by the USERCATALOGS control statement. Output data sets for each catalog backup are dynamically allocated using the CATWORK-DSN(mask) to derive names. Allocation attributes are specified in the GCLINI member of SGCLPARM:COPY_OPTIONS section, CATWORK-ATTR token. Delete these data sets only in the COPY step.

3. Execution of IMS Cloning Tool main program.

4. IMS Cloning Tool SGCLLOAD library must be authorized.

5. DD for GCLINI, SGCLPARM member. The GCLINI member of the HLQ:SGCLPARM library provides variables to the IMS Cloning Tool programs. The GCLINI member also contains the product security license codes.

6. DD for IMS Cloning Tool output.

7. Journal data set used by IMS Cloning Tool commands. This VSAM data set is used to pass information between IMS Cloning Tool steps, and to log information derived from the step executions. Each IMS Cloning Tool 'application' must have a unique journal data set. Because logging varies based on errors and or warnings discovered in the process, the data set size is difficult to predict. Therefore, test an application using the suggested CYL 10,10 allocation and increase if necessary. After a successful execution, the size may be reduced after examining the total allocation. Allow for changes to the application setup. Number of volumes, number of data sets and number of warnings will affect the required size. As noted in the IDCAMS step, be sure this data set is not deleted before all IMS Cloning Tool steps are complete.

In the sample JCL, the control statement JOURNAL-DDN(JOURNAL) specifies that a DD statement with the name JOURNAL is used rather than a dynamically allocated data set name.

8. During the COPY process, IMS Cloning Tool produces two work files:
   BKPnnnnnn is the backup of the source catalogs. SRTnnnnnn is used as the output from the sort of the BCS records selected by the RENAME-MASKS.

**COPYCHECK**

This command is not required. COPYCHECK is provided in case other relationships are to be initiated that require the previously initiated copies to complete, or if COPY must be rerun, and withdrawing previously established copies may save time, rather than waiting for them to finish.

COPYCHECK provides a mechanism to either 'WAIT' for copies to complete, or to 'WITHDRAW' or 'STOPSNAP' (terminate) previously established volume relationships.

- WAIT is intended for situations where other relationships need to be initiated when the IMS Cloning Tool copies are complete
- WITHDRAW is intended for reruns of the COPY step without waiting for copies to complete when FlashCopy is used.
- STOPSNAP is intended for reruns of the COPY step without waiting for copies to complete when EMC SNAP is used.

If the copy was established with FCNOCOPY or BACKGROUNDCOPY(NO) (no background copy), following the withdraw, some of the tracks on the volume may contain data from the source volume, while other tracks may contain residual data.
that was on the target volume before the copy. This situation can cause problems when trying to access the target volume if the VTOC locations of the source and target volumes were different before the copy.

**COPYCHECK Command Syntax**

COPYCHECK

*Required Keywords:*

{ JOURNAL-DSN( dataset name ) | JOURNAL-DDN( ddname ) }  
WAIT( nnn | 10 [ ,RC( rr | 4 ) ] ) | WITHDRAW | STOPS

**COPYCHECK Command & Keyword Definitions**

**COPYCHECK**  
Optional command to wait for completion of COPY events, or withdraw from them.  
- Required: No  
- Restrictions: None  

**JOURNAL-DSN( dataset name )**  
or **JOURNAL-DDN( ddname )**  
This parameter supplies either the data set name of the IMS Cloning Tool journal file or the DD name of the DD statement in the JCL that points to the IMS Cloning Tool journal file.  
COPYCHECK, whether used to wait for copy completions or to withdraw copy relationships, relies on the volume pairs carried in the journal data set from a previously executed COPY command.  
If multiple IMS Cloning Tool setups are used for different volume groups, DO NOT use the same journal data set. Each IMS Cloning Tool ‘application’ needs a different journal data set.  
The journal is used to pass information between IMS Cloning Tool steps (e.g., from the COPY step to the RENAME step). Therefore, as noted in the JCL comments, it must be cataloged in the COPY step when first created, and referenced as OLD in subsequent steps.  
Do not delete the data set in the last step, in case restarts or reruns need journal information. It is preferable to delete and replace the data set only at the fresh start of a COPY.  
- Default: None  
- Required: Yes  
- Restrictions: None  

**WAIT( nnn | 10 [ ,RC( rr | 4 ) ] )**  
WAIT specifies that COPYCHECK is to check at 30-second intervals to see if copy relationships have completed for all volume copies initiated in a corresponding COPY step.  

*nnn* specifies the maximum time in minutes that COPYCHECK should continue checking. If the specified time limit expires before all copies are complete, COPYCHECK will terminate with a return code of *rr*.  
COPYCHECK will examine the volume copies that are passed via the journal data set from a corresponding COPY step.  
- Default: 10,RC(4)  
- Required: Yes
Restrictions: Mutually exclusive with WITHDRAW and STOPSNAP.

**WITHDRAW**

WITHDRAW specifies that COPYCHECK is to withdraw all copy relationships initiated in a corresponding COPY step.

If COPY must be rerun, WITHDRAW will eliminate the otherwise required wait time for one set of volume copies to complete before copies involving the same volumes can be initiated again.

- Default: None
- Required: Yes
- Restrictions: Mutually exclusive with WAIT and STOPSNAP.

**STOPSNAP**

Specifies that COPYCHECK is to stop snap all copy relationships initiated in a corresponding COPY step. If COPY must be rerun, STOPSNAP will eliminate the otherwise required wait time for one set of volume copies to complete before copies involving the same volumes can be initiated again.

- Default: None
- Required: Yes
- Restrictions: Mutually exclusive with WAIT and WITHDRAW.

**COPYCHECK Step JCL Example**

For completeness and to illustrate where JCL parameters and IMS Cloning Tool control statements must match, the following JCL includes sample IMS Cloning Tool control statements.

The COPYCHECK step JCL is shown in the following example. The numbers preceding the JCL correspond to notes, (following this sample JCL) containing an explanation of the line of JCL.

```
//??????? JOB , 'GCL COPYCHECK', CLASS=A, MSGCLASS=X
//S1 EXEC PGM=GCL00010, REGION=8M
//STEPLIB DD DSN=HLQ?.SGCLLOAD, DISP=SHR
//GCLINI DD DSN=HLQ?.SGCLPARM(GCLINI), DISP=SHR
//GCLPRINT DD SYSOUT=* 
//SYSUDUMP DD SYSOUT=* 
//JOURNAL DD DSN=GCL.JRNL, DISP=OLD 
//GCLIN DD * 
COPYCHECK 
  WAIT(20) 
  JOURNAL-DDN(JOURNAL) 
//*
```

1. Execution of IMS Cloning Tool main program.
2. IMS Cloning Tool SGCLLOAD library must be authorized.
3. DD for GCLINI, member of the SGCLPARM library. The GCLINI member of the SGCLPARM library provides variables to the IMS Cloning Tool programs. The GCLINI member also contains the product security license codes.
4. DD for GCLPRINT output.
5. Journal data set used by IMS Cloning Tool commands. This VSAM data set is used to pass information between IMS Cloning Tool steps, and to log information derived from the step executions. The journal file is allocated and cataloged in the COPY step and used as input and output by the RENAME step. The specified data set name must match the data set allocated in the COPY step. If multiple IMS Cloning Tool setups are used for different groups of volumes, take care in specifying the journal data sets for each setup. In the
IMSSETLOG

This command is not required. IMSSETLOG is used to suspend or resume an IMS system or systems as part of cloning an online IMS system.

An IMSSETLOG SUSPEND command is used to suspend any activity in IMS systems currently active for a set of RECONs. It will also prevent any additional systems or DLI batch jobs from being started.

An IMSSETLOG RESUME command is used to release any IMS systems that were previously suspended by an IMSSETLOG SUSPEND command. It will also allow additional IMS systems and batch jobs to be started.

IMSSETLOG Command Syntax

IMSSETLOG

Required Keywords:
SUSPEND | RESUME

Optional Keywords:
SIMULATE
WTOR

IMSSETLOG Command & Keyword Definitions

IMSSETLOG (SUSPEND | RESUME)
Optional command to suspend or resume an IMS subsystem. Valid values include:

- SUSPEND: suspend any activity in IMS systems currently active for a set of RECONs. It will also prevent any additional systems or DLI batch jobs from being started.
- RESUME: release any IMS systems that were previously suspended by an IMSSETLOG SUSPEND command. It will also allow additional IMS systems and batch jobs to be started.

- Default: None
- Required: No
- Restrictions: None

WTOR
Optional keyword that specifies a WTOR should be issued after IMS activity has been suspended. This can be useful in cases where the copy process is being done outside of IMS Cloning Tool.

- Default: None
- Required: No
- Restrictions: Valid on IMSSETLOG SUSPEND command only.

SIMULATE
Optional keyword that specifies that the actual SUSPEND or RESUME command is formatted and validated, but not actually issued.

- Default: None
- Required: No
Restrictions: None.

IMSSETLOG Step JCL Example

For completeness and to illustrate where JCL parameters and IMS Cloning Tool control statements must match, the following JCL includes sample IMS Cloning Tool control statements.

The IMSSETLOG step JCL is shown in the following example. The numbers preceding the JCL correspond to notes, (following this sample JCL) containing an explanation of the line of JCL.

```
//??????? JOB ,'GCL IMSSETLOG',CLASS=A,MSGCLASS=X
1 //S1  EXEC PGM=GCL00010,REGION=8M
2 //STEPLIB DD DSN=HLQ?.SGCLLOAD,DISP=SHR
3 //GCLINI DD DSN=HLQ?.SGCLPARM(GCLINI),DISP=SHR
4 //GCLPRINT DD SYSOUT=*  
5 //RECON1 DD DSN=ims.RECON1,DISP=SHR
 //RECON2 DD DSN=ims.RECON2,DISP=SHR
 //RECON3 DD DSN=ims.RECON2,DISP=SHR
 //GCLIN DD *
  IMSSETLOG -
6 //SUSPEND
 /*
1. Execution of IMS Cloning Tool main program.
2. IMS Cloning Tool SGCLLOAD library must be authorized.
3. DD for GCLINI, member of the SGCLPARM library. The GCLINI member of the SGCLPARM library provides variables to the IMS Cloning Tool programs. The GCLINI member also contains the product security license codes.
4. DD for GCLPRINT output.
5. DDs for the RECON data sets. These data sets can be specified in the JCL or the library containing the MDA members for these data sets can be included in the STEPLIB.
6. SUSPEND parameter specifying that IMS Cloning Tool is to suspend activity in any IMS that is currently authorized in the RECONs and to prevent new jobs from being authorized.

IMSSTART

This command is not required. IMSSTART is used to start an IMS subsystem, via a z/OS START command, as part of cloning an IMS subsystem. This command is only used for the cloning of an IMS subsystem. The STARTCMD keyword is used to specify the proclib member and any optional parameters for the z/OS START command.

The IMSSTART command can optionally start and wait for initialization of an IRLM and common service address spaces. The STARTIRLM keyword specifies the IRLM proclib member and the STARTCSL specifies the common service layer proclib member.

Several of the auxiliary address space (such as CQS, CSL, Repository, and IRLM), can be shared by multiple IMS systems. If there are multiple IMS systems using these components, specify an IMSSTART command in your job stream for each IMS system, but include the keyword to start the shared components on only the first IMSSTART command.
After the z/OS START command is issued, IMSSTART waits for the IMS subsystem to complete its start-up until it is ready to accept a restart command. An IMS subsystem can either be brought up with a cold start, a warm start, or an emergency restart. The RESTART-CMD keyword is used to specify the restart mode. However, if the IMS subsystem is defined with automatic restart, and you want to override the automatic restart command of the subsystem, you must specify the AUTO=N parameter in the STARTCMD keyword of the IMSSTART command.

After the restart command has been issued, IMSSTART waits for the IMS subsystem to complete its initialization. The WAIT keyword is used to specify how long this wait is and the return code to be used when the wait time is exceeded.

Note: The userid that runs the IMSSTART command must be authorized to issue z/OS START command.

**IMSSTART Command Syntax**

**IMSSTART**

*Required Keywords:*

- **IMS-SSID** *(ims ssid)*
- **STARTCMD** *(start command string and parms)*
- **RESTART-CMD** *(ims restart command and parms)*

*Optional Keywords:*

- **IMS-ALREADY-RUNNING** *(RC nn | 4 )
  SIMULATE
- **STARTCSL** *(CSL proc name and parms)*
- **STARTIRLM** *(IRLM proc name and parms)*
- **STARTCQS** *(CQS proc name and parms)*
- **STARTODBM** *(ODBM proc name and parms)*
- **STARTOM** *(OM proc name and parms)*
- **STARTRM** *(RM proc name and parms)*
- **STARTRS** *(RS proc name and parms)*
- **WAIT** *(nnn | 5 ) [ ,RC (rr) | 8 ]

**IMSSTART Command & Keyword Definitions**

**IMSSTART**

Optional command to start an IMS subsystem.

- Required: No
- Restrictions: None

**IMS-SSID** *(IMS-SSID)*

Required keyword that indicates which IMS subsystem is to be started.

- Default: None
- Required: Yes
- Restrictions: 1-4 characters

**STARTCMD** *(start command string and parms)*

Required keyword that specifies the IMS start command that should be used when starting the IMS subsystem. The length of the parameter is limited to 256 bytes.

For example: STARTCMD(I9QACR1.I9QA,IMSID=I9QA)
If you want to override the automatic restart command of the subsystem with the IMSSTART command’s RESTART-CMD keyword, the AUTO=N parameter must be included in this STARTCMD keyword. For example: STARTCMD(I9ACR9,AUTO=N)

- Default: None
- Required: Yes
- Restrictions: Maximum length of this parameter is limited to 256 bytes.

**RESTART-CMD(restart command and parms)**

Specifies the IMS restart command to be issued during the restart of the IMS subsystem.

The value entered for the RESTART-CMD is exactly the value used when issuing the restart command to IMS. The IMS restart command and restart options are defined in the IMS Command Reference Guide.

An ‘/NRE CHKPT 0’, or cold start, is recommended for starting the cloned, or target, IMS subsystem.

Typically, an ‘/NRE’, or warm start, would be used when restarting the source IMS subsystem if it has been shutdown normally.

There is no default value. The length of the parameter is limited to 256 bytes.

For example: RESTART-CMD(/NRE CHKPT 0 )

If the IMS subsystem is defined with automatic restart, IMS Cloning Tool ignores this RESTART-CMD keyword. If you want to override the automatic restart command of the subsystem, the AUTO=N parameter should be included in the STARTCMD keyword.

- Default: None
- Required: Yes
- Restrictions: Maximum length of this parameter is limited to 256 bytes.

**IMS-ALREADY-RUNNING(RC(in) 1 4 )**

Optional keyword that determines the IMSSTART function return code that will be issued if the IMS subsystem is found to be already executing. The default return code is 4. If WAITONLY is not specified, the default return code is 4, else the default return code is 0.

- Default: 4, or 0 if WAITONLY
- Required: No
- Restrictions: None.

**SIMULATE**

Optional keyword that specifies that the actual START command is formatted and validated, but not actually issued.

- Default: None
- Required: No
- Restrictions: None.

**STARTCSL(SCI start command and parms)**

Optional keyword that indicates that the CSL (Common Service Layer) address space should be started by the IMSSTART command. The parameter supplied should be the command and parms to start the associated SCI address space.

For example: STARTCSL(SCI,SCINAME=SCI1) or STARTCSL(SCI)
If the SCI address space is already active, IMSSTART will not issue an additional START command.

- Default: None
- Required: No
- Restrictions: Maximum length of this parameter is limited to 256 bytes.

**STARTCQS(CQS proc name and parms)**

Optional keyword to start the CQS (Common Queue Server) address space with the IMSSTART command. Include the command and parms to start the associated CQS address space as the STARTCQS parameter variable value.

For example: `STARTCQS(IMSCQS, PARM='SSN=IMS1')` or `STARTCQS(IMSCQS)`

If the CQS address space is already active, IMSSTART will not issue an additional START command.

- Default: None
- Required: No
- Restrictions: None

**STARTIRLM(IRLM start command and parms)**

Optional keyword that indicates that the IRLM address space should be started by the IMSSTART command. The parameter supplied should be the command and parms to start the associated IRLM address space.

For example: `STARTIRLM(IRLM, IRLNM=IRL1)` or `STARTIRLM(IRLM)`

If the IRLM address space is already active, IMSSTART will not issue an additional START command.

- Default: None
- Required: No
- Restrictions: Maximum length of this parameter is limited to 256 bytes.

**STARTODBM(ODBm proc name and parms)**

Optional keyword to start the ODBM (Open Database Manager) address space with the IMSSTART command. Include the command and parms to start the associated ODBM address space as the STARTODBM parameter variable value.

For example: `STARTODBM(IMSODBM, ODMNINIT=IMS)` or `STARTODBM(IMSODBM)`

If the ODBM address space is already active, IMSSTART will not issue an additional START command.

- Default: None
- Required: No
- Restrictions: Valid for IMS Version 11 or later.

**STARTOM(OM proc name and parms)**

Optional keyword to start the OM (Operations Manager) address space with the IMSSTART command. Include the command and parms to start the associated OM address space as the STARTOM parameter variable value.

For example: `STARTOM(IMSOM, PARM='OMINIT=IMS')` or `STARTOM(IMSOM)`

If the OM address space is already active, IMSSTART will not issue an additional START command.

- Default: None
• Required: No
• Restrictions: None

**STARTRM**(RM proc name and parms)
Optional keyword to start the RM (Resource Manager) address space with the IMSSTART command. Include the command and parms to start the associated RM address space as the STARTRM variable value.

For example: STARTRM(IMSRM, PARM='RMINIT=IMS') or STARTRM(IMSRM)

If the RM address space is already active, IMSSTART will not issue an additional START command.
• Default: None
• Required: No
• Restrictions: None

**STARTRS**(RS proc name and parms)
Optional keyword to start the RS (Repository Server) address space should with the IMSSTART command. Include the command and parms to start the associated RS address space as the STARTRS parameter variable value.

For example: STARTRS(IMSRS, SOUT=X) or STARTRS(IMSRS)

If the repository server address space is already active, IMSSTART will not issue an additional START command.
• Default: None
• Required: No
• Restrictions: Valid for IMS Version 12 or later.

**WAIT**(nnn | 5) [,RC(rr) | 8]
Optional keyword that specifies the number of minutes (nnn) the IMSSTART command should wait for the IMS subsystem to complete startup. If the specified time limit expires before the IMS subsystem start has completed, IMSSTART will terminate with a return code of rr. The default wait time is 5 minutes. The default return code is 8.

• Default: 5,RC(8)
• Required: No
• Restrictions: None.

**WAITONLY**
Optional keyword, that when specified, indicates that the command to start any of the IMS address spaces will not be used by this job step. The job step will only verify the IMS address spaces are active, or wait until the IMS address spaces have been manually started.

• Default: None
• Required: No
• Restrictions: None.

**IMSSTART Step JCL Example**
For completeness and to illustrate where JCL parameters and IMS Cloning Tool control statements must match, the following JCL includes sample IMS Cloning Tool control statements.

The IMSSTART step JCL is shown in the following example. The numbers preceding the JCL correspond to notes, (following this sample JCL) containing an explanation of the line of JCL.
IMSSTOP

This command is not required. IMSSTOP is an optional command used to stop an IMS subsystem, via an IMS /CHE command, as part of cloning an IMS subsystem. This command is used only for cloning of an IMS subsystem. The MODE keyword is used to specify the type of checkpoint to use to shutdown the IMS subsystem.

The IMSSTOP command can optionally stop and wait for termination of the common service layer address spaces and an IRLM address space after the IMS subsystem has terminated. The STOPCSL keyword is used to specify the SCI started task name. The STOPIRLM keyword is used to specify the IRLM started task name.

Several of the auxiliary address spaces (such as CQS, CSL, Repository, and IRLM), will not shutdown unless all of the subsystems connected to that component is shut down. Therefore, if there are other IMS systems using these components, specify an IMSSTOP command in your job stream for each IMS system, but specify the keyword to stop the shared components on only the last IMSSTOP command.

After the IMS /CHE command is issued, IMSSTOP waits for the IMS subsystem to complete its shutdown. The WAIT keyword is used to specify how long this wait is and the return code to be used when the wait time is exceeded.

Note: The userid that runs the IMSSTOP command must be authorized to issue z/OS MODIFY and STOP commands if STOPCSL or STOPIRLM is specified.

**IMSSTOP Command Syntax**

**IMSSTOP**

**Required Keywords:**

IMS-SSID(ims ssid)
Optional Keywords:
IMS-ALREADY-STOPPED(RC(nn) | 8 )
MODE(FREEZE | DUMPQ | PURGE)
SIMULATE
STOPIRLM(IRLM proc name)
STOPCSL(sci proc name, LOCAL | PLEX)
STOPCQS(CQS proc name)
STOPDBM(ODBM proc name)
STOPOM(OM proc name)
STOPRM(RM proc name)
STOPRS(RS proc name, ALL) WAIT(nnn | 5 ) [,RC(nn) | 8 ]
WAITONLY

IMSSTOP Command & Keyword Definitions

IMSSTOP
Optional command to stop an IMS subsystem.
• Required: No
• Restrictions: None

IMS-SSID(IMS-SSID)
Required keyword that indicates which IMS subsystem is to be stopped.
• Default: None
• Required: Yes
• Restrictions: 1-4 characters

IMS-ALREADY-STOPPED(RC(nn) | 8 )
Optional keyword that determines the IMSSTOP function return code that will be issued, if the IMS subsystem is not executing. The default return code is 8.
• Default: 8
• Required: No
• Restrictions: None.

MODE(FREEZE | DUMPQ | PURGE)
Optional keyword that determines the IMS shutdown variations. An IMS "^CHECKPOINT" command will be issued with the specified mode as the parameter. If the DUMPQ parameter is requested and the IMS subsystem is a DBCTL system, the command with the default option of PURGE will be utilized. The default value is DUMPQ for a DB/DC or a DCCTL subsystem, and PURGE for a DBCTL subsystem.
• Default: DUMPQ for DB/DC, PURGE for DBCTL
• Required: No.
• Restrictions: None.

SIMULATE
Optional keyword that specifies that the actual STOP command is formatted and validated, but not actually issued.
• Default: None
• Required: No
• Restrictions: None.

STOPIRLM(IRLM proc name)
Optional keyword that indicates that the IRLM address space should be stopped by the IMSSTOP command after the IMS subsystem has terminated. The parameter supplied should be the name of the IRLM started task name.
• Default: None
• Required: No
• Restrictions: None.

STOPCSL(sci proc name,LOCAL | PLEX)
Optional keyword that will stop the CSL address spaces after IMS address space has stopped. The default is to shutdown the address spaces associated with the CSL on a single z/OS image. If all CSL addresses within an IMSplex are to be shutdown, then specify PLEX as the second parm for this keyword.
• Default: None
• Required: No
• Restrictions: None.

STOPCQS(CQS proc name)
Optional keyword to stop the CQS (Common Queue Server) address space with the IMSSTOP command. Include the name of the CQS started task name as the parameter variable value.
• Default: None
• Required: No
• Restrictions: None.

STOPODBM(ODBM proc name)
Optional keyword to stop the ODBM (Open Database Manager) address space with the IMSSTOP command. Include the name of the ODBM started task name as the parameter variable value.
• Default: None
• Required: No
• Restrictions: Valid for IMS Version 11 or later.

STOPOM(OM proc name)
Optional keyword to stop the OM (Operations Manager) address space with the IMSSTOP command. Include the name of the OM started task name as the parameter variable value.
• Default: None
• Required: No
• Restrictions: None.

STOPRM(RM proc name)
Optional keyword to stop the RM (Resource Manager) address space with the IMSSTOP command. Include the name of the RM started task name as the parameter variable value.
• Default: None
• Required: No
• Restrictions: None.

STOPRS(RS proc name | ALL)
Optional keyword to stop the RS (Repository Server) address space with the IMSSTOP command. Include the name of the name of the repository server started task name as the parameter variable value. ‘ALL’ is an optional parameter to indicate that the master and any secondary repository servers address spaces should be stopped. If ‘ALL’ is not specified, the SHUTDOWN command is issued only to the repository server specified.
For example: STOPRS(IMSRS,ALL) or STOPRS(IMSRS)

- Default: None
- Required: No
- Restrictions: Valid for IMS Version 12 or later.

**WAIT(nn|5),(RC(rr)|8)**

Optional keyword that specifies the number of minutes (nnn) the IMSSTOP command should wait for the IMS subsystem to complete termination. If the specified time limit expires before the IMS termination has completed, IMSSTOP will terminate with a return code of rr. The default wait time is 5 minutes. The default return code is 8.

- Default: 5,RC(8)
- Required: No
- Restrictions: None.

**WAITONLY**

Optional keyword, that when specified, indicates that the command to shutdown any of the IMS address spaces will not be used by this job step. The job step will only verify the IMS address spaces are not active, or wait until the IMS address spaces have been manually stopped.

- Default: None
- Required: No
- Restrictions: None.

**IMSSTOP Step JCL Example**

For completeness and to illustrate where JCL parameters and IMS Cloning Tool control statements must match, the following JCL includes sample IMS Cloning Tool control statements.

The IMSSTOP step JCL is shown in the following example. The numbers preceding the JCL correspond to notes, (following this sample JCL) containing an explanation of the line of JCL.

```
//??????? JOB , 'GCL IMSSTOP', CLASS=A, MSGCLASS=X
1 //S1 EXEC PGM=GCL00010, REGION=8M
2 //STEPLIB DD DSN=HLQ?.SGCLLOAD, DISP=SHR
3 //GCLINI DD DSN=HLQ?.SGCLPARM(GCLINI), DISP=SHR
4 //GCLPRINT DD SYSOUT=*
5 //SYSUDUMP DD SYSOUT=*
6 //GCLIN DD *
7 IMSSTOP DD *
8 IMS-SSID(IMS1) DD *
9 MODE(DUMPQ) DD *
```

1. Execution of IMS Cloning Tool main program.
2. IMS Cloning Tool SGCLLOAD library must be authorized.
3. DD for GCLINI, member of the SGCLPARM library. The GCLINI member of the SGCLPARM library provides variables to the IMS Cloning Tool programs. The GCLINI member also contains the product security license codes.
4. DD for GCLPRINT output.
5. IMS-SSID parameter specifying the IMS ssid, IMS1, of the IMS subsystem that will be stopped.
6. MODE parameter specifying the type of checkpoint for IMS to do when shutting down.
**IMSUPDATE**

This command is not required. Use IMSUPDATE to change the data set names in dynamic allocation members, based on the rename masks specified in the RENAME command, when the MDA-DATASETS or MDA-DDN keyword is specified. If an IMS subsystem is being cloned, with the intent of a second IMS subsystem accessing the renamed data sets, IMSUPDATE may be used to make some of the changes within IMS to reflect the renamed data sets.

The IMSUPDATE command will modify JCL and PROCLIB members, based on the rename masks specified in the RENAME command, the volume pairs specified in the COPY command, and the IMS-SSID parameter, when the JCLPDS-DATASETS or JCLPDS-DDN keyword is specified.

RENAME command. ARCHIVE log data sets are modified only if the optional RENAME-ARCHIVE-LOGS keyword is specified. Image copy records in the RECONs are only modified if the optional RENAME-ICS keyword is specified. Change accumulation records in the RECONs are only modified if the optional RENAME-CAS keyword is specified.

The target IMS subsystem cannot be started until the IMS Cloning Tool COPY, RENAME, and IMSUPDATE commands have completed. The target IMS subsystem must be stopped before the source subsystem is cloned again (next IMS Cloning Tool COPY command).

IMSUPDATE can be run only when the previous RENAME was not a SIMULATE.

**IMSUPDATE Command Syntax**

**IMSUPDATE**

**Required Keywords:**

- IMS-SSID(src_ssid,tgt_ssid)
- JOURNAL-DSN(dataset name) | JOURNAL-DDN(dd name)
- IMS-RESLIB-DATASETS(reslib_ds1,reslib_ds2)
- IMS-RESLIB-DDN(ddname)

**Optional Keywords:**

- ACB-NOT-FOUND(RC(nn) | 4 )
- ALLOW-RENAME-SIMDSNAME-ERROR-DBRC-SYMBOLS(ERROR|WARN|IGNORE)
- IMS-ACBLIB-DATASETS(acblib_ds1,acclib_ds2)
- IMS-ACBLIB-DDN(ddname)
- IMS-GROUP(ims group name)
- IMS-MACLlib-DATASETS(maclib_ds1,maclib_ds2)
- IMS-MACLlib-DDN(ddname)
- IMSRDS-DSN(dataset name)
- IMSRDS2-DSN(dataset name)
- IMS-RSENAMEx(src_rsename,tgt_rsename)
- IMS-SUFFIX(x | 0)
- JCLPDS-DATASETS(jclpds_ds1,jclpds_ds2,jclpds_ds3)
- JCLPDS-DDN(ddname)
- JCLPDS-NOT-UPDATED(rc(nn) | 4 )
- MDA-DATASETS(mda_ds1,mda_ds2,mda_ds3)
- MDA-DDN(ddname)
- MDA-NOT-UPDATED(rc(nn) | 4 )
- MODBLK5-DSN(dataset name)
- MODBLKSA-DSN(dataset name)
- MODBLKSB-DSN(dataset name)
- MODESTAT-DSN(dataset name)
- MODSTAT2-DSN(dataset name)
- NOT-RENAME-JCLPDS-LIST(N|Y)RDDS-DATASETS(rdds1_ds1,rdds2_ds1,rdds3_ds1)
IMSUPDATE Command & Keyword Definitions

IMSUPDATE  
Optional keyword to update IMS to reflect renamed data sets.
- Required: No
- Restrictions: None

IMS-SSID(src_ssid, tgt_ssid)  
Required keyword that allows the specification of an IMS subsystem name pair. The first name in a pair reflects the SOURCE IMS subsystem name, the second, the TARGET IMS subsystem name.
- Default: None
- Required: Yes
- Restrictions: None.

JOURNAL-DDN(ddname)  
or JOURNAL-DSN(dataset name)  
Required keyword that supplies either a data set name of the IMS Cloning Tool journal file, or a DD name assumed via the JCL to point at a journal data set.

The journal data set name for the IMSUPDATE step must be the same data set specified for the COPY step.
- Default: None
- Required: Yes
- Restrictions: None.

IMS-RESLIB-DATASETS(dataset name1, dataset name2, dataset name3)  
or IMS-RESLIB-DDN(DD name)  
Required keyword that supplies either a data set name(s) or DD name in the JCL for the IMS RESLIB for the target IMS subsystem. If the COPY and RENAME processes are done in a different job step, the JCLPDS_DDNN can be used to point to a DD in the job step JCL which includes these data sets.
- Default: None
- Required: Yes
- Restrictions: Up to 100 data set names can be specified.

ALLOW-RENAME-SIM  
Optional keyword used to indicate that the IMSUPDATE command can update IMS data sets even if the previous RENAME command was run with SIMULATE. This keyword can be used in cases where IMS Cloning
Tool did not perform the copy and rename of the target data sets but the target data sets still need to be updated with the information for the target IMS.

- Default: Do not allow IMSUPDATE to run if RENAME was run with SIM.
- Required: No
- Restrictions: None.

**ACB-NOT-FOUND(RC(mn) | 4)**
Optional keyword that supplies the return code that will be used if a DMB is not found in the ACBLIB for any database defined to an IMS subsystem. This will prevent any corresponding MDA member to be updated for the database. The default value returned is 4.

- Default: 4
- Required: No.
- Restrictions: None.

**DSNAME-ERROR-DBRC-SYMBOLS (ERROR | WARN | IGNORE)**
Optional keyword that specifies the action to take when a resulting target data set name is more than the allowable 44 characters and the data set names contain DBRC symbolic keywords. The default value is ERROR. ERROR indicates that this condition will cause an error message to be displayed and the data set name will not be updated. WARN indicates that this condition will cause a warning message to be displayed but the data set name will still be updated. IGNORE indicates that this condition will not trigger a message and the data set name will be updated.

- Default: Error
- Required: No
- Restrictions: None.

**IMS-ACBLIB-DATASETS (dataset name1,dataset name2,dataset name3)** or **IMS-ACBLIB-DDN(DD name)**
Optional keyword that supplies either a data set name(s) or DD name in the JCL for the IMS ACBLIB data set(s) for the target IMS subsystem. If the COPY and RENAME processes are done in a different job step, the IMS-ACBLIB-DDN can be used to point to a DD in the job step JCL which includes these data sets. The data sets specified are used in updating MDA members. This keyword is required if the MDA-DATASETS or MDA-DDN keyword is specified.

- Default: IMS-ACBLIB-DDN (ACBLIB)
- Required: No
- Restrictions: This keyword is required if the MDA-DATASETS or MDA-DDN keyword is specified. Up to 100 data set names can be specified.

**IMS-GROUP( ins group name)**
Optional keyword that specifies an IMS group name to associate a group of IMS subsystems. The same IMS Name must be used on the IMSUPDATE commands for each member in a data sharing environment.

- Default: None
- Required: When cloning data sharing subsystems.
- Restrictions: None.
IMS-MACLIB-DATASETS(data set name1, dataset name2, dataset name3)
or IMS-MACLIB-DDN(DD name)
Optional keyword that supplies either a data set name(s) or DD name in the JCL for the IMS MACLIB for the target IMS subsystem. If the COPY and RENAME processes are done in a different job step, the MACLIB-DDN can be used to point to a DD in the job step JCL which includes these data sets. The data sets specified are used in updating MDA members. This keyword is required if the MDA-DATASETS or MDA-DDN keyword is specified.

- Default: None.
- Required: No.
- Restrictions: This keyword is required if the MDA-DATASETS or MDA-DDN keyword is specified. Up to 100 data set names can be specified.

IMSRDS-DSN(dataset name)
This keyword is required for online cloning, but is optional for offline cloning.

For offline cloning: This optional keyword supplies the data set name of the restart data set for the target IMS subsystem. This keyword is required if the source IMS system is offline but was abnormally terminated.

For online cloning: This keyword is required if the source IMS system was online while the COPY of the source volumes occurred. This data set will be updated to allow the target IMS to be emergency restarted. If the COPY and RENAME processes are done in a different job step, then a IMSRDS DD in the job step JCL can be used instead of the IMSRDS-DSN keyword. If the IMSRDS DD included in the job step JCL, then this parameter is ignored.

- Default: None
- Required: For online cloning.
- Restrictions: None.

IMSRDS2-DSN(dataset name)
This keyword is required for online cloning, but is optional for offline cloning.

For offline cloning: This optional keyword supplies the data set name of the second restart data set for the target IMS subsystem. This keyword is required if the source IMS system is offline but was abnormally terminated.

For online cloning: This keyword is required if the source IMS system was online while the COPY of the source volumes occurred. This data set will be updated to allow the target IMS to be emergency restarted. If the COPY and RENAME processes are done in a different job step, then a IMSRDS2 DD in the job step JCL can be used instead of the IMSRDS2-DSN keyword. If the IMSRDS2 DD included in the job step JCL, then this parameter is ignored.

- Default: None
- Required: For online cloning and XRF capable.
- Restrictions: None.

IMS-RSENAME(src_rsnema, tgt_rsnema)
This keyword is required for XRF capable systems and is ignored for non-XRF capable systems. This keyword allows the specification of an RSENAME name pairing. The first name in a pair reflects the SOURCE IMS RSENAME, the second reflects the TARGET IMS RSENAME.
In an XRF environment, IMS uses the RSENAME, instead of the subsystem ID, to record information in DBRC related to either the primary or backup IMS subsystem. Such DBRC information where the RSENAME would be used includes the subsystem record and log records.

IMS Cloning Tool uses the IMS-RSENAME pairing to update the information in DBRC with the target RSENAME specified. If the target IMS environment will not be XRF capable, then the target IMS subsystem ID should be specified for the target RSENAME.

The RSENAME for an IMS environment is specified in the DFSHSBxx member of the IMS PROCLIB, where ‘xx’ is the value for the HSBMBR parameter for the IMS environment.

If XRF functionality is defined during the SYSGEN process (HSB=YES on the IMSCTRL macro), but XRF is disabled through either the DFSPBxxx member, or the HSBID parameter when starting the IMS control region, then the XRF-CAPABLE(N) keyword can be specified to prevent receiving error message GCL32051E indicating IMS-RSENAME is required.

- Default: None
- Required: Required for an XRF capable system, if you specify XRF-CAPABLE(Y).
- Restrictions: None.

**IMS-SUFFIX(x | 0)**
This optional keyword specifies the one byte character suffix of the IMS control blocks for the target IMS subsystem.

- Default: 0
- Required: Required if the IMS subsystem being cloned was generated with a different suffix than ‘0’.
- Restrictions: None.

**JCLPDS-DATASETS(dataset name1,dataset name2, dataset name3)**
or **JCLPDS-DDN(DD name)**
Optional keyword that supplies either a data set name(s) of all the JCL or PROCLIB data sets for the target IMS subsystem(s) to update with the target IMS SSID and data set names. If the COPY and RENAME processes are done in a different job step, the JCLPDS_DDN can be used to point to a DD in the job step JCL which includes these data sets.

- Default: None
- Required: No.
- Restrictions: Up to 100 data set names can be specified.

**JCLPDS-NOT-UPDATED (RC(nn) | 4)**
Optional keyword that supplies the return code that will be used any members of the JCLPDS data set(s) were found to have a SSID variable which did not match the source SSID, or any data set names that did not match any of the source data set names. The default value returned is 4.

- Default: 4
- Required: No.
- Restrictions: None.

**MDA-DATASETS(dataset name1,dataset name2, dataset name3)**
or **MDA-DDN(DD name)**
Optional keyword that supplies either a data set name(s) of all the MDA (dynamic allocation member) data sets for the target IMS subsystem(s).
This should also include the DFSRESL if it contains any dynamic allocation members. If the COPY and RENAME processes are done in a different job step, the MDA_DDN can be used to point to a DD in the job step JCL which includes the MDA data sets.

If this keyword is specified, the following keywords must also be specified:

ACBLIB-DDN or ACBLIB-DATASETS
IMS-MACLIB-DDN, or IMS-MACLIB-DATASETS RECON-DDN, or RECON-DATASETS

And either: MODBLKS-DSN or MODSTAT-DSN, MODBLKSA-DSN, and MODBLKSB-DSN

- Default: Up to 100 data set names can be specified.
- Required: No.
- Restrictions: None.

**MDA-NOT-UPDATED(IRC\((nn) \ 4\))**
Optional keyword that supplies the return code that will be used if any member of the MDALIB data set(s), for a database defined to the source IMS subsystem, contained a data set name that did not match a source data set name. The default value returned is 4.

- Default: 4
- Required: No.
- Restrictions: None.

**MODBLKS-DSN(dataset name)**
Optional keyword that supplies the data set name of the MODBLKS data set for the target IMS subsystem. This data set is used for MDA member updating. If the COPY and RENAME processes are done in a different job step, then a MODBLKS DD in the job step JCL can be used instead of the MODBLKS-DSN keyword. If the MODBLKS DD is included in the job step JCL, then the MODSTAT-DSN, MODSTAT2-DSN, MODBLKSA-DSN and MODBLKSB-DSN keywords are not applicable.

- Default: None
- Required: No.
- Restrictions: Cannot be specified with MODBLKSA-DSN, MODBLKSB-DSN, MODSTAT-DSN or MODSTAT2-DSN keywords.

**MODBLKSA-DSN(dataset name)**
Optional keyword that supplies the data set name of the MODBLKSA data set for the target IMS subsystem. This data set is used for MDA member updating. If the COPY and RENAME processes are done in a different job step, then a MODBLKSA DD in the job step JCL can be used instead of the MODBLKSA-DSN keyword. If the MODBLKSA DD is included in the job step JCL, then this data set is ignored.

- Default: None
- Required: No.
- Restrictions: Cannot be specified with the MODBLKS-DSN keyword.

**MODBLKSB-DSN(dataset name)**
Optional keyword that supplies the data set name of the MODBLKSB data set for the target IMS subsystem. This data set is used for MDA member updating. If the COPY and RENAME processes are done in a different job step, then a MODBLKSB DD in the job step JCL can be used instead of the
MODBLKSB-DSN keyword. If the MODBLKS DD is included in the job step JCL, then this data set is ignored.
- Default: None
- Required: No.
- Restrictions: Cannot be specified with the MODBLKS-DSN keyword.

MODSTAT-DSN(dataset name)
Optional keyword that supplies the data set name of the MODSTAT data set for the target IMS subsystem. This data set is used for MDA member updating. If the COPY and RENAME processes are done in a different job step, then a MODSTAT DD in the job step JCL can be used instead of the MODSTAT-DSN keyword. If the MODBLKS DD is included in the job step JCL, then this data set is ignored.
- Default: None
- Required: No.
- Restrictions: Cannot be specified with the MODBLKS-DSN keyword.

MODSTAT2-DSN(dataset name)
Optional keyword that supplies the data set name of the MODSTAT2 data set for the target IMS subsystem. This data set is used for MDA member updating. If the COPY and RENAME processes are done in a different job step, then a MODSTAT2 DD in the job step JCL can be used instead of the MODSTAT2-DSN keyword. If the MODBLKS DD is included in the job step JCL, then this data set is ignored.
- Default: None
- Required: No.
- Restrictions: Cannot be specified with the MODBLKS-DSN keyword.

NOT-RENAME-JCLPDS-LIST(Y | N )
Specifies whether IMSUPDATE JCLPDS processing produces a list of the data sets not renamed.
- Default: N if SIMULATE is not specified. Y if SIMULATE is specified.
- Required: No
- Restrictions: None.

RDDS-DATASETS(RDDS1_dsn1, RDDS2_dsn1,RDDS3_dsn1,
RDDS1_dsn2,RDDS2_dsn2, RDDS3_dsn2)
or RDDS-DDN(DD name)
Optional keyword that supplies either the data set name(s) of the RDDS1, RDDS2, RDDS3 data sets for the target IMS subsystem(s). If the COPY and RENAME processes are done in a different job step, the RDDS_DDN can be used to point to a DD in the job step JCL which includes the RDDS data sets.
- Default: None
- Required: No.
- Restrictions: Up to 100 data set names can be specified. Valid for IMS Version 10 or later.

RDDS-NOT-UPDATED(RC(nn) | 4)
Optional keyword that supplies the return code that will be used if any of the RDDS data sets contained an SSID that did not match a source SSID. The default value returned is 4.
- Default: 4
- Required: No.
Restrictions: Valid for IMS Version 10 or later.

**RECON-DATASETS (RECON1_dsn1,RECON2_dsn1,RECON3_dsn1,RECON1_dsn2,RECON2_dsn2,RECON3_dsn2)**

Optional keyword that supplies the data set name(s) of the RECON1, RECON2, RECON3 data sets for the target IMS subsystem(s). If the COPY and RENAME processes are done in a different job step, the RECON DDN can be used to point to a DD in the job step JCL which includes the RECON data sets. The data set names for all three RECON data sets for the target IMS subsystem must be specified. One of these keywords is required if the MDA-DATASETS or MDA-DDN keyword is specified.

- Default: None
- Required: No.
- Restrictions: Up to 100 data set names can be specified.

**RECON-NOT-UPDATED (RC(nn) | 4 )**

Optional keyword that supplies the return code that will be used if any records in the RECON data sets contained either an SSID, data set name, or volume serial that did not match a source SSID, data set name, or volume serial. The default value returned is 4.

- Default: 4
- Required: No.
- Restrictions: None.

**REMOVE-MEMBER**

Optional keyword that indicates this IMSUPDATE is for an IMS subsystem that is to be removed from the cloned IMS environment. If this keyword is present, the only processing to occur will be to remove recovery information from the target RECON data sets that are specific to the source IMS-SSID.

- Default: None
- Required: No.
- Restrictions: None.

**RENAME-ARCHIVE-LOGS(N|Y)**

Optional keyword that indicates if the IMS archive logs are on the source DASD volumes and were copied to the target volumes, this keyword will change the data set names and VOLSERs of the IMS archive logs in the RECON data sets. The default value is N.

- Default: N
- Required: No.
- Restrictions: None.

**RENAME-CAS(N|Y)**

Optional keyword that indicates if the Change Accumulation data sets are on the source DASD volumes and were copied to the target volumes, this keyword will change the data set names and VOLSERs of the Change Accumulation records in the RECON data sets. The default value is N.

- Default: N
- Required: No.
- Restrictions: None.
RENAME-ICS(N|Y)
Optional keyword that indicates if the Image Copy data sets are on the source DASD volumes and were copied to the target volumes, this keyword will change the data set names and VOLSERS of Image Copy records in the RECON data sets. The default value is N.
• Default: N
• Required: No.
• Restrictions: None.

REPO-INDEX-DATASETS(REPO_idx_dsn1, REPO_idx_dsn2) or
REPO-INDEX-DDN(DD name)
Optional keyword that supplies the repository index data sets for the target IMS subsystem(s). If the COPY and RENAME processes are performed in a different job step, the REPO-INDEX-DDN keyword can be used to point to a DD in the job step JCL that includes the repository index data sets.
• Default: N
• Required: No.
• Restrictions: Valid for IMS Version 12 or later.

REPO-MEMBER-DATASETS(REPO_mbr_dsn1, REPO_mbr_dsn2) or
REPO-MEMBER-DDN(DD name)
Optional keyword that supplies the repository member data sets for the target IMS subsystem(s). If the COPY and RENAME processes are performed in a different job step, the REPO-MEMBER-DDN keyword can be used to point to a DD in the job step JCL that includes the repository member data sets.
• Default: N
• Required: No.
• Restrictions: Valid for IMS Version 12 or later.

REPO-NOT-UPDATED(RC(nn)|4)
Optional keyword that supplies the return code to be used if any of the repository data sets contained a data set name that did not match a source data set name.
• Default: N
• Required: No.
• Restrictions: Valid for IMS Version 12 or later.

SIMULATE
Optional keyword that specifies that the changes to be made are displayed but no modifications are actually done.
• Default: N
• Required: No.
• Restrictions: None.

XRF-CAPABLE(N|Y)
This keyword can be used to override the XRF enabled setting in the IMS control blocks created by the IMS SYSGEN process.
If this keyword is omitted, then IMS Cloning Tool checks the control blocks generated by the IMS SYSGEN process to determine if a system is XRF capable or not.
If XRF functionality is defined during the SYSGEN process (HSB=YES on the IMSCTRL macro), but XRF is disabled through either the DFSPBxxx
member, or the HSBID parameter when starting the IMS control region, then the XRF-CAPABLE(N) keyword can be specified to prevent receiving error message GCL32051E indicating IMS-RSENAME is required.

If the source IMS subsystem is not XRF capable, and you want the target IMS subsystem to be XRF capable, then you can specify XRF-CAPABLE(Y). If you specify XRF-CAPABLE(Y), then you will also be required to specify the IMS-RSENAME keyword.

- Default: None.
- Required: No.
- Restrictions: None.

**IMSUPDATE Step JCL Example**

For completeness and to illustrate where JCL parameters and IMS Cloning Tool control statements must match, the following JCL includes sample IMS Cloning Tool control statements.

The IMSUPDATE step JCL is shown in the following example. The numbers preceding the JCL correspond to notes, (following this sample JCL) containing an explanation of the line of JCL.

```plaintext
//????????? JOB , 'GCL IMSUPDATE', CLASS=A
  //*
  1 //UPDATE EXEC PGM=GCL00010
  2 //STPLIB DD DISP=SHR,DSN=HLQ.?SGCLLOAD
  3 //GCLINI DD DISP=SHR,DSN=HLQ.?SGCLPARM(GCLINI)
  4 //GCLPRINT DD SYSOUT=*  
  5 //JOURNAL DD DISP=SHR,DSN=GCL.JOURNAL
  //GCLIN DD * (Req'd)
  IMSUPDATE
  6 IMS-SSID(src-ssid,tgt-ssid) -
  7 JOURNAL-DDN(JOURNAL) -
  8 IMS-RESLIB-DATASETS( -
    ims.SDFSRESL -
    ) -
  9 IMS-ACBLIB-DATASETS( -
    ims.ACBLIB -
    ) -
  10 IMS-MACLIB-DATASETS( -
    ims.SDFSMAC -
    ) -
  11 IMS-SUFFIX(0) -
  12 IMSRDS-DSN(ims.RDS) -
  13 JCLPDS-DATASETS( -
    ims.ssid.PROCLIB -
    ims.ssid.JOBS -
    ) -
  14 MDA-DATASETS( -
    ims.MDALIB -
    ) -
  15 MODBLKS-DSN( -
    ims.MODBLKS -
    ) -
  16 RECON-DATASETS( -
    ims.RECON1 -
    ims.RECON2 -
    ims.RECON3)
```

1. Execution of IMS Cloning Tool main program.
2. IMS Cloning Tool SGCLLOAD library must be authorized.
3. DD for GCLINI, member of the SGCLPARM library. The GCLINI member of the SGCLPARM library provides variables to the IMS Cloning Tool programs. The GCLINI member also contains the product security license codes.

4. DD for GCLPRINT output.

5. Journal data set used by IMS Cloning Tool commands. This VSAM data set is used to pass information between IMS Cloning Tool steps, and to log information derived from the step executions. The journal file is allocated and cataloged in the COPY step, and used as input and output by the IMSUPDATE step. The specified data set name must match the data set allocated in the COPY step. If multiple IMS Cloning Tool processes are created for different applications, each must use a unique journal data set. In the sample JCL, the control statement JOURNAL-DDN(JOURNAL) specifies that a DD with the name JOURNAL is being used, rather than a data set name.

6. IMS-SSID parameter specifying the source and target IMS subsystem ids.

7. JOURNAL-DDN parameter that indicates the IMS Cloning Tool journal data set is referenced by the JOURNAL DD in the JCL.

8. IMS-RESLIB-DATASETS parameter that indicates the IMS RESLIB data set for the target IMS subsystem is referenced by the DFSRESLB DD in the JCL. The IMS RESLIB is used by IMSUPDATE to determine information about the IMS subsystem it is updating.

9. ACBLIB-DATASETS parameter defines the IMS ACBLIB data sets that contain the DMB control blocks for the databases defined to the IMS subsystem to be updated.

10. IMS-MACLIB-DATASETS parameter defines the IMS MACLIB data sets to be used when generating MDA members.

11. IMS-SUFFIX parameter identifies the suffix for the IMS subsystem used to generate the control blocks for the DMBs and ACBs.

12. IMSRDS-DSN parameter identifies the IMS restart data set to be updated to allow the target IMS to be emergency restarted. This keyword is only required if the source IMS system was online while the source volumes were copied, or if the source IMS system was offline but had been abnormally terminated.

13. JCLPDS-DATASETS parameter identifies the PROCLIB and JOBS data sets to be updated with the new data set names.

14. MDA-DATASETS parameter identifies the MDA libraries to be updated by the IMSUPDATE command.

15. MODBLKS-DSN parameter identifies the MODBLKS data set is used to determine the list of databases defined to the IMS subsystem. By specifying this keyword, the MODBLKS-DSN, MODBLKSA-DDN, MODBLKSB-DSN, MODSTAT-DSN, and MODSTAT2-DSN keywords do not have to be specified in GCLIN control statements.

16. RECON-DATASETS parameter identifies the RECON data sets to be updated with the new data set names.

---

**FINDUCATS**

"This command is not required. FINDUCATS will identify catalogs involved with source volume data sets. It does not negate the need to specify source and target catalog pairs in the COPY command.

Run FINDUCATS, at least initially, to determine involved ICF user catalogs, and then whenever you may wish to verify that the ICF user catalogs involved with source volume data sets are as specified in the COPY command."
FINDUCATS Command Syntax

FINDUCATS

Required Keywords:
FROM-STORAGEGROUP(storgrp1 [, storgrp2 ] [, ... ])
FROM-VOLSER(volser1 | volmask [, volser2 | volmask ] [, ... ])

Optional Keywords:
EXCLUDE-FROM-VOLSER(volser1 | volser2 | volsernnn)

FINDUCATS Command & Keyword Definitions

FINDUCATS
Optional command to locate catalogs involved with source volume data sets.
- Required: No
- Restrictions: None

FROM-STORAGEGROUP(storgrp1 [, storgrp2 ] [, ... ])
or FROMSTORAGEGROUP
Specifies the input volumes to be scanned for involved ICF user catalogs. All volumes defined to the specified storage group(s) will be included in the scan. A warning will be generated for any volumes not found but the scan will continue.
- Default: None
- Required: Yes
- Restrictions: FROM-STORAGEGROUP is mutually exclusive with FROM-VOLSER.
- Short form: FRS

FROM-VOLSER(volser1 | volmask [, volser2 | volmask ] [, ... ])
or FROMVOLSER
Specifies the input volumes to be scanned for involved ICF user catalogs.
- Default: None
- Required: Yes
- Restrictions: FROM-VOLSER is mutually exclusive with FROM-STORAGEGROUP.
- Short form: FRV

EXCLUDE-FROM-VOLSER(volser1 | volser2 | volsernnn)
or EXCLUDEFROMVOLSER
Specifies volumes, or a volume mask for volumes to be excluded from those specified for the FROM-VOLSER parameter or the FROM-STORAGEGROUP parameter.
- Default: None
- Required: No
- Restrictions: None.
- Short form: EXCFRV

FINDUCATS Step JCL Example

For completeness and to illustrate where JCL parameters and IMS Cloning Tool control statements must match, the following JCL includes sample IMS Cloning Tool control statements.
The FINDUCATS step JCL is shown in the following example. The numbers preceding the JCL correspond to notes, (following this sample JCL) containing an explanation of the line of JCL.

```
//??????? JOB ,'FINDUCATS',CLASS=A,MSGCLASS=X
1 //S1 EXEC PGM=GCL00010,REGION=8M
2 //STEPLIB DD DSN=HLQ?.SGCLLOAD,DISP=SHR
3 //GCLINI DD DSN=HLQ?.SGCLPARM(GCLINI),DISP=SHR
4 //GCLPRINT DD SYSOUT=*
   //SYSUDUMP DD SYSOUT=*
   //GCLIN DD *
   FINDUCATS
     FROM-VOLSER(ABC*)
     EXCLUDE-FROM-VOLSER(ABCTST)
   //*
```

1. Execution of IMS Cloning Tool main program.
2. IMS Cloning Tool SGCLLOAD library must be authorized.
3. DD for GCLINI, member of the SGCLPARM library. The GCLINI member of the SGCLPARM library provides variables to the IMS Cloning Tool programs. The GCLINI member also contains the product security license codes.
4. DD for IMS Cloning Tool output. Two reports are generated:
   - Report 1 – lists each volume serial number, the ICF user catalog names(s) involved, and the aliases or high level qualifiers on the volume.
   - Report 2 – summarizes the involved ICF user catalog names. Use the catalogs found to determine the source catalogs required in the USERCATALOGS parameter of the COPY command. For each source ICF user catalog, you will need to supply a corresponding target catalog name to satisfy the USERCATALOGS requirement for source and target catalog pairs.

   The alias information from report 1 will be useful in determining the target catalog aliases that must be created.

   **Note:** FINDUCATS invokes DCOLLECT to identify ALIAS names of the source volume data sets in order to identify the correct source ICF user catalogs. DCOLLECT controls access to the DCOLLECT function, by issuing a security (RACF) check for a facility class profile of STGADMIN.IDC.DCOLLECT. If this profile exists, then Read authority is necessary. The command will not be successful if the user is not authorized (IMS Cloning Tool does not make the call).

---

**JRNLUPGRADE**

*This command is not required.* Use the JRNLUPGRADE command when a current release of the IMS Cloning Tool RENAME, IMSUPDATE, or BCSCLEAN command needs to use a journal data set created by an older release of IMS Cloning Tool (release 1.6 and later.)

IMS Cloning Tool commands that use the journal (except for the COPY and JRNLUPGRADE commands) can only process a journal that was created by the same release of IMS Cloning Tool.

Sometimes a journal created by a prior IMS Cloning Tool release needs to be used by the current release. The JRNLUPGRADE command can be used to upgrade a journal that was created by a prior release to the current release.

There are three scenarios for using JRNLUPGRADE:
• Scenario 1: IMS Cloning Tool COPY was run using a prior release, and you want to run the current release of the IMS Cloning Tool RENAME command.

• Scenario 2: IMS Cloning Tool COPY and RENAME were run using a prior release, and you want to run the IMS Cloning Tool IMSUPDATE command and other IMS conditioning commands from the current release.

• Scenario 3: The journal was created by a prior release and you want to run the IMS Cloning Tool BCSCLEAN command from the current release.

It is not valid to run JRNLUPGRADE between multiple runs of the RENAME command.

After running the JRNLUPGRADE command, you might want to rename the old and new journal data sets, so that the new journal data set has the same name as the prior old journal. This way, you will not have to change the JCL in existing IMS Cloning Tool cloning jobs.

Scenario 1: For scenario 1, the steps are:
1. Using the previous release of IMS Cloning Tool: Run the IMS Cloning Tool COPY command.
2. Back up the journal, the UCATBKUP data sets, and the target volumes.
3. At a later date or at a different site: Restore the journal, the UCATBKUP data sets, and the target volumes.
4. Using the current release of IMS Cloning Tool: Run the IMS Cloning Tool JRNLUPGRADE command.
5. Using the current release of IMS Cloning Tool: Run the IMS Cloning Tool RENAME command.
6. For IMS, using the current release of IMS Cloning Tool: Run the IMS Cloning Tool IMS conditioning commands.

Scenario 2: For scenario 2, the steps are:
1. Using the previous release of IMS Cloning Tool: Run the IMS Cloning Tool COPY command.
2. Using the previous release of IMS Cloning Tool: Run the IMS Cloning Tool RENAME command.
3. Using the current release of IMS Cloning Tool: Run the IMS Cloning Tool JRNLUPGRADE command.
4. Using the current release of IMS Cloning Tool: Run the IMS Cloning Tool IMSUPDATE command. Using the current release of IMS Cloning Tool: Run the other IMS Cloning Tool IMS conditioning commands.

Scenario 3: Use Scenario 3 when a new release of IMS Cloning Tool is being installed and repetitive clones are being run. For the repetitive clones, BCSCLEAN is run before COPY for the next iteration. If the journal records used by BCSCLEAN have changed in the new release, the new release of the BCSCLEAN command will fail. For this scenario, JRNLUPGRADE should be run before BCSCLEAN.

**JRNLUPGRADE Command Syntax**

```plaintext
JRNLUPGRADE

Required Keywords:

{ NEW-JOURNAL-DDN( ddname ) | NEW-JOURNAL-DSN( dataset name ) } 
{ OLD-JOURNAL-DDN( ddname ) | OLD-JOURNAL-DSN( dataset name ) } 
```
JRNLUPGRADE Command & Keyword Definitions

JRNLUPGRADE
  Optional command to upgrade a journal that was created with a prior release of IMS Cloning Tool.
  • Required: No
  • Restrictions: None

NEW-JOURNAL-DDN (ddname)
or NEW-JOURNAL-DSN (dataset name)
  This parameter supplies either the data set name of the new IMS Cloning Tool journal file, or the DD name of the DD statement in the JCL that points to the new IMS Cloning Tool journal file.
  • Default: None
  • Required: Yes
  • Restrictions: None.

OLD-JOURNAL-DDN (ddname)
or OLD-JOURNAL-DSN (dataset name)
  This parameter supplies either the data set name of the old IMS Cloning Tool journal file, or the DD name of the DD statement in the JCL that points to the old IMS Cloning Tool journal file.
  • Default: None
  • Required: Yes
  • Restrictions: None.

JRNLUPGRADE Step JCL Example

For completeness and to illustrate where JCL parameters and IMS Cloning Tool control statements must match, the following JCL includes sample IMS Cloning Tool control statements.

The JRNLUPGRADE step JCL is shown in the following example. The numbers preceding the JCL correspond to notes, (following this sample JCL) containing an explanation of the line of JCL.

```
//???????? JOB ,'GCL JRNLUPGRADE',CLASS=A,MSGCLASS=X
//S0 EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=* 
//SYSIN DD *
1 DEL GCL.UPGRADED.JRNL
     SET MAXCC=0
2 //S1 EXEC PGM=GCL00010,REGION=6M
3 //STEPLIB DD DSN=HLQ?.SGCLLOAD,DISP=SHR
4 //GCLINI DD DSN=HLQ?.SGCLPARAM(GCLINI),DISP=SHR
5 //GCLPRINT DD SYSOUT=* 
     //SYSUDUMP DD SYSOUT=*
6 //OLDJRNL DD DSN=GCL.JRNL,DISP=SHR
7 //NEWJRNL DD DSN=GCL.UPGRADED.JRNL, 
     // RECORD=K5,KEYLEN=64,KEYOFF=0, 
     // DISP=(,CATLG),UNIT=SYSALLDA, 
     // LRECL=600,SPACE=(CYL,(10,10))
     //GCLIN DD *
     JRNLUPGRADE 
8 OLD-JOURNAL-DDN(OLDJRNL) 
9 NEW-JOURNAL-DDN(NEWJRNL)
//*
```

1. Deletes any previously existing new journal data set, in anticipation of JRNLUPGRADE allocating a new upgraded journal for subsequent use by IMS
Cloning Tool. Because this data set is used to pass information from one IMS Cloning Tool step to another, do not delete the new upgraded journal data set in any steps except the JRNLUPGRADE step.

2. Execution of IMS Cloning Tool main program.
3. IMS Cloning Tool SGCLLOAD library must be authorized.
4. DD for GCLINI, member of the SGCLPARM library. The GCLINI member of the SGCLPARM library provides variables to the IMS Cloning Tool programs. The GCLINI member also contains the product security license codes.

5. DD for IMS Cloning Tool output.
6. The old journal data set that is to be upgraded. In the sample JCL, the control statement OLD-JOURNAL-DDN(OLDJRNL) specifies that a DD with the name OLDJRNL is being used rather than a data set name.

7. The new upgraded journal data set that is created by JRNLUPGRADE and will be used by subsequent IMS Cloning Tool commands. In the sample JCL, the control statement NEW-JOURNAL-DDN(NEWJRNL) specifies that a DD with the name NEWJRNL is being used rather than a data set name.

**ONLINECLIP**

This command is not required. ONLINECLIP is intended for situations where the process used to copy the volumes (IMS Cloning Tool COPY was not used) does not change the internal label of the target volumes back to the target volume serial; that is, the internal label reflects the source volume serial.

For IMS Cloning Tool RENAME to function properly, the internal label needs to be corrected to contain the target volume serial.

ONLINECLIP will do this function. It will expect to find the target volumes online. It will read the internal label of the target device. If it has the corresponding source volume serial, it will be changed to the target volume serial.

For example, if you use the TSO FCESTABL command with the ONLINETGT=YES option, the target volume starts out with a target volume label. During the TSO FCESTABL, the target volume will remain online, but the volume label from the source volume will be copied to the target volume. The UCB however, still retains the target volume name. IMS Cloning Tool RENAME requires the target volume to retain the target volume label. The IMS Cloning Tool ONLINECLIP command reads the journal file to identify the original source and target volume pairs, scans the UCBs for the target volume names, and will change the target label so that it matches the original target volume serial number. This works because the system 'thinks' the target VOLSER is still online; it does not know the label at that device number was changed by FlashCopy. After the ONLINECLIP command has been executed, the target volumes are in the condition expected by IMS Cloning Tool RENAME.

**ONLINECLIP Command Syntax**

**ONLINECLIP**

*Required Keywords:*

{ JOURNAL-DSN( dataset name ) | JOURNAL-DDN( ddname ) }*

*Optional Keywords:*

WRONG-VOLSER( RC( 4 | 8 ) )
ONLINECLIP Command & Keyword Definitions

ONLINECLIP
Optional command used to re-label the target volume(s) when the source volume label was copied but the UCB field still points to the target volume label. This can occur when TSO FCESTABL was used.

- Required: No
- Restrictions: None

JOURNAL-DSN (dataset name )
or JOURNAL-DDN ( ddname )
This parameter supplies either the data set name of the IMS Cloning Tool journal file, or a DD name assumed via the JCL to point at a journal data set. If multiple IMS Cloning Tool setups are used for different volume groups, DO NOT use the same journal data set. Each IMS Cloning Tool 'application' needs a different journal data set.

The journal is used to pass information between IMS Cloning Tool steps (e.g., from the COPY step to the RENAME step). Therefore, as noted in the JCL comments, it must be cataloged in the COPY step when first created, and referenced as OLD or SHR in subsequent steps.

- Default: None
- Required: Yes
- Restrictions: None.
- Short form(s): JDSN, or JDDN

WRONG-VOLSER( RC( 4 | 8 ) )
This option addresses the situation where the internal VOLSER of a target volume does not have the expected value. The ONLINECLIP command return code for this situation will be the specified value.

- Default: 4
- Required: No
- Restrictions: None.

ONLINECLIP Step JCL Example

For completeness and to illustrate where JCL parameters and IMS Cloning Tool control statements must match, the following JCL includes sample IMS Cloning Tool control statements.

The ONLINECLIP step JCL is shown in the following example. The numbers preceding the JCL correspond to notes, (following this sample JCL) containing an explanation of the line of JCL.

```
//???????? JOB ,"GCL ONLINECLIP",CLASS=A,MSGCLASS=X
1 //S1 EXEC PGM=GCL00010,REGION=8M
2 //STEPLIB DD DSN=HLQ?.SGCLLOAD,DISP=SHR
3 //GCLINI DD DSN=HLQ?.SGCLLOAD,DISP=SHR
4 //GCLPRINT DD SYSOUT=* 
//SORTMSG DD SYSOUT=*
//SYSDUMP DD SYSOUT=*
5 //JOURNAL DD DSN=GCL.JRNL,DISP=OLD
   //GCLIN DD *
   ONLINECLIP 
5 //JOURNAL-DDN(JOURNAL)
   /*
1. Execution of IMS Cloning Tool main program.
2. IMS Cloning Tool SGCLLOAD library must be authorized.
```
3. DD for GCLINI, member of the SGCLPARM library. The GCLINI member of the SGCLPARM library provides variables to the IMS Cloning Tool programs. The GCLINI member also contains the product security license codes.

4. DD for GCLPRINT output.

5. Journal data set used by IMS Cloning Tool commands. This VSAM data set passes information between IMS Cloning Tool steps, and logs information derived from the step executions. The journal file is allocated and cataloged in the COPY step and used as input to the ONLINECLIP command. In the sample JCL, the control statement JOURNAL-DDN(JOURNAL) is specifying that a DD with the name JOURNAL is being used rather than a data set name.

RENAME

This command is required. The RENAME step renames and catalogs the data sets from the COPY step onto target volumes. RENAME-MASKS are processed in order. The first hit of the source data set name is the one that is used for the target data set name.

RENAME Command Syntax

RENAME

Required Keywords:

{ JOURNAL-DSN( data set name ) | JOURNAL-DDN( ddbname ) }
RENAME-MASKS( mask pairs )
RENAME-MASKS-DDN ( ddbname)

Optional Keywords:

DATACLAS( data class | SOURCE ) |
DATACLAS-PAIRS(
  Sourcedataclas1, Targetdataclas1,
  Sourcedataclas2, Targetdataclas2, ... )
DEFAULT_IF_NO_MATCH,
  Targetdataclas | SOURCE )

DRIVEACS
EXCLUDE-SRCNAME( RC( 0 | NOTRENAMED-RC ) )
EXCLUDE-SRCNAME-MASKS( masks ) |
EXCLUDE-SRCNAME-MASKS-DDN( ddbname )
GDG-ALL-MIGRATED( SKIP ) |
GDG-ALL-MIGRATED( RETAIN, RC( 0 | 4 ) )
GDG-EMPTY( SKIP ) |
GDG-EMPTY( RETAIN, RC( 0 | 4 ) )
GDG-MIGRATED( ERROR ) |
GDG-MIGRATED( RETAIN, RC( 0 | 4 ) )
GDG-TAPE( ERROR ) |
GDG-TAPE( RETAIN, RC( 0 | 4 ) )
ISSUE-VCLOSE( NO ) |
ISSUE-VCLOSE( YES | BEFORE | AFTER [ , LOCAL | SYSPLEX ] )
MAX-TASKS( nnn | 1 )
MGMTCLAS( mgmt class | SOURCE ) |
MGMTCLAS-PAIRS(
  Source mgmtclas1, Target mgmtclas1,
  Source mgmtclas2, Target mgmtclas2, ... )
DEFAULT_IF_NO_MATCH,
  Target mgmtclas | SOURCE )
MISSINGUCAT( DELETE [ KEEP [ , RC( 0 | 4 | 8 ) ] ])
NOTRENAMED( DELETE [ KEEP [ , RC( 0 | 4 | 8 ) ] ])
ORPHANCATENTRY( DELETE [ KEEP [ , RC( 0 | 4 | 8 ) ] ])
RECATALOG( Y | N )
RENAME-AUDIT-LOG( N | SMF( nnn ) )
RENAME-ERROR( ABORT ) |
RENAME-ERROR( CONTINUE, RC( 0 | 4 | 8 ) )
RENAME-LIST( Y | N )
RERUN
SAFE | SPEED
SIMULATE
STORCLAS( stor class | SOURCE ) |
STORCLAS-PAIRS(
  Source storclas1, Target storclas1,
**Rename Considerations**

- The work data sets and output data sets created by the RENAME job step cannot reside on target volumes.
- RENAME-MASKS are processed in order. The first hit of the source data set name is the one that is used for the target data set name.
- Name lengths: Whether changing a qualifier to a longer new name qualifier, or using the + feature to add qualifiers, be careful that new names do not exceed 44 characters or 35 for GDG base names.
- Catalog aliases and new names: Catalog aliases must be set up to match names resulting from renaming.
- Rename collisions: Be sure rename masks cannot cause two or more old names to rename to the same new name.
- If all data sets on all volumes copied should be renamed, use the NOTRENAMED option with a return code of 8, assuming the application using the target volumes requires less than an 8 return code from RENAME.
- If non-VSAM data set aliases are used, ensure that if a rename mask matches a data set, the same mask, or other masks, will match all aliases defined for the data set.
- An ICF catalog can be renamed but it will not be usable as an ICF catalog.

**Oldname syntax**

Use the old name filter mask to select the data sets to apply the RENAME new name mask against. The following table provides a list of the allowable filter characters and a description of each character.

<table>
<thead>
<tr>
<th>Character</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>*</td>
<td>A single asterisk represents exactly one DSN qualifier of any value. For example: &quot;. or <em>. or .</em> * combined with valid DSN characters or % means 0 to nn characters of any value.</td>
</tr>
<tr>
<td>**</td>
<td>A double asterisk represents 0 to nn DSN qualifiers of any value. For example: ** or ** ** cannot appear within a qualifier. Three or more adjacent * are not allowed within a qualifier. ** can be used more than once in an 'old name' mask. Example: <strong>.abcd</strong> or abc:.defg**</td>
</tr>
<tr>
<td>%</td>
<td>A percent sign represents one non-blank character.</td>
</tr>
<tr>
<td>!</td>
<td>An exclamation point represents one national character. @ # $</td>
</tr>
<tr>
<td>&lt;</td>
<td>A less-than sign represents one non-numeric character, national symbols included.</td>
</tr>
<tr>
<td>&gt;</td>
<td>A greater-than sign represents one numeric character.</td>
</tr>
</tbody>
</table>

For example, Filter = "*.PAYROLL*./*/0%0/0%0/23*.DATA would match DSN = TLQ050.PAYROLL.CYCLE23.DATA

For information about filters and ACS masks, refer to "Filtering pattern masks” on page 6.
Newname syntax

Use the new name mask to rename the data sets selected by the old name filter mask. The following table provides a list of the allowable filter characters and a description of each character.

<table>
<thead>
<tr>
<th>Character</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>*</td>
<td>A single asterisk represents exactly one DSN qualifier. * may not be used for a partial qualifier in a 'new name' mask. Example: aaa.<em>bb.</em>* would not be valid.</td>
</tr>
<tr>
<td>**</td>
<td>A double asterisk represents 0 to nn DSN qualifiers. ** cannot appear with any other characters within a qualifier. Three or more adjacent * are not allowed within a qualifier. ** may only be used once in a 'new name' mask. Example: <strong>.abcd.</strong> would not be valid.</td>
</tr>
<tr>
<td>%</td>
<td>A percent sign represents one non-blank character.</td>
</tr>
<tr>
<td>!</td>
<td>An exclamation point represents one national character. @ # $</td>
</tr>
<tr>
<td>+---------</td>
<td>A plus sign followed by 1 to 8 characters means 'insert this new qualifier'.</td>
</tr>
<tr>
<td>-</td>
<td>A minus sign means 'remove this qualifier from the new name'.</td>
</tr>
</tbody>
</table>

For example: Original DSN/Mask: GCLI.LAB9.DEMO1.SDS.ORIG, Rename To DSN/Mask: GCLI+TEST.XX%.-%.** New Name: GCLI.TEST.XXB9.SDS.ORIG

For information about filters and ACS masks, refer to “Filtering pattern masks” on page 6.

RENAME Command & Keyword Definitions

RENAME

Renames and catalogs data sets on target volumes.

- Required: Yes
- Restrictions: None

JOURNAL-DSN (data set name )
or JOURNAL-DDN ( ddname )

This parameter supplies either a data set name of the IMS Cloning Tool journal file or a DD name assumed via the JCL to point at a journal data set. The journal data set for the RENAME step must be the same data set specified for the COPY step.

If multiple IMS Cloning Tool setups are used for different volume groups, DO NOT use the same journal data set. Each IMS Cloning Tool ‘application’ needs a different journal data set.

The journal is used to pass information between IMS Cloning Tool steps (e.g., from the COPY step to the RENAME step). Therefore, as noted in the JCL comments, it must be cataloged in the COPY step when first created and referenced as OLD in subsequent steps. In case restarts or reruns need journal information, do not delete the data set in the last step. It is preferable to delete and replace the data set only at the fresh start of a COPY.

- Default: None
- Required: Yes
- Restrictions: None
**RENAME-MASKS** (*mask pairs*)

RENAME-MASKS are specified in ‘oldname’ ‘newname’ pairs. RENAME-MASKS are processed in order. The first hit of the source data set name is the one that is used for the target data set name.

- Default: None
- Required: Yes
- Restrictions: See Newname Syntax and Oldname Syntax.

**RENAME-MASKS-DDN** (*ddname*)

This parameter specifies a DD name that points to a file containing rename mask pairs. The pairs are the same format as in the RENAME-MASKS keyword. RENAME-MASKS-DDN must have an LRECL of 80, and must not contain sequence numbers in columns 73 - 80.

- Default: None
- Required: Yes
- Restrictions: Mutually exclusive with RENAME-MASKS.
- Short form: RM-DDN

**DATACLAS** (*data class | SOURCE*)

**or DATACLAS-PAIRS** (*SourceDataclas1, TargetDataclas1, SourceDataclas2, TargetDataclas2, ... DEFAULT_IF_NO_MATCH, TargetDataclas | SOURCE*)

**DATACLAS** specifies the SMS DATACLAS to be used for all renamed data sets on SMS managed volumes if the value is in quotes, or will be copied from the corresponding source volume data set if SOURCE is specified. The default is SOURCE.

**DATACLAS-PAIRS** specifies source/target pairs for dataclas. If a data set has the specified source dataclass, the target data set will be given the paired target dataclass.

**DEFAULT_IF_NO_MATCH** indicates a dataclass to be assigned to any target data set whose source dataclass was not matched by any other DATACLAS-PAIR entry.

SOURCE indicates such data sets should be assigned the dataclass used by the source data set. If you want to use an SMS dataclass, SOURCE, enter SOURCE in quotes.

- Default: For DATACLAS, the default is SOURCE.
- Required: No
- Restrictions: DATACLAS and DATACLAS-PAIRS are mutually exclusive with DRIVEACS.
- Short form(s): DC, or DCP.

**DRIVEACS**

Specifies that SMS class information for renamed data sets is to be derived by ‘driving’ ACS routines. Note that variables supplied to ACS are: DSN, STORCLAS, DATACLAS, MGMTCLAS, ACSENVIR (BATCH), XMODE (RENAME), JOB_ACCT, STEP_ACCT, USERID, GROUP, APPLIC, SYSNAME, SYSPLEX, JOBNAME, PGM, and NAME.

The use of the DRIVEACS parameter may significantly slow down the RENAME performance.

- Default: None
- Required: No
• Restrictions: DRIVEACS is mutually exclusive with DATACLAS, DATACLAS-PAIRS, MGMTCLAS, MGMTCLAS-PAIRS, STORCLAS, and STORCLAS-PAIRS.

EXCLUDE-SRCNAME( RC( 0 | NOTRENAMED-RC ) )

This parameter specifies the return code to be given for data sets that match entries in the EXCLUDE-SRCNAME-MASKS keyword.

0 specifies that a return code of zero will be given for data sets that match entries in the EXCLUDE-SRCNAME-MASKS keyword.

NOTRENAMED-RC specifies that the RC specified in the NOTRENAMED keyword will be given for data sets that match entries in the EXCLUDE-SRCNAME-MASKS keyword.

Using RC(0) addresses the situation where there are known data sets on the volumes that will not be renamed and it is desired to use NOTRENAMED(RC(8)) to know if some not known data sets are on the volumes.

• Default: NOTRENAMED-RC
• Required: No
• Restrictions: Only used when EXCLUDE-SRCNAME-MASKS is specified.
• Short form: XS

EXCLUDE-SRCNAME-MASKS ( masks )

This parameter supplies a list of source data set names or masks that will not be renamed (data sets excluded from renaming).

Data sets that are not renamed due to this keyword will be treated as if there were no rename mask match. The disposition of these not-renamed data sets is controlled by the NOTRENAMED keyword. The return code generated is specified by the EXCLUDE-SRCNAME keyword.

To exclude a GDG and its GDS entries, two masks should be used. One mask should be the GDG base name and the other mask should be the GDG base name plus G>>>>v>>.

For example: GDG BASE NAME GDG BASE NAME G>>>>V>>>

Using two masks of this form is necessary due the different ways the data set names are stored in the volume VTOC and in the ICF catalog.

• Default: None
• Required: No
• Restrictions: See Oldname Syntax.
• Short form: XSM

EXCLUDE-SRCNAME-MASKS-DDN( ddname )

This parameter specifies the DD name that points to a file containing EXCLUDE SRCNAME MASKS. The entries are the same format as in the EXCLUDE-SRCNAME-MASKS keyword. EXCLUDE-SRCNAME-MASKS-DDN must have an LRECL of 80, and must not contain sequence numbers in columns 73 - 80.

• Default: None
• Required: No
• Restrictions: Mutually exclusive with EXCLUDE-SRCNAME-MASKS. See Oldname Syntax.
• Short form: XSM-DDN

GDG-ALL-MIGRATED( SKIP )

or GDG-ALL-MIGRATED ( RETAIN, RC(0 4) )

This command supports DFSMShsm, FDR, and CA-Disk. This option addresses the situation where a GDG matches a RENAME mask and all the source generations have been migrated.

The GDG entry can be skipped, or the GDS entries in the GDG base record may be RETAINED with a corresponding return code of 0 or 4. If not specified in the control statements, the defaults are obtained from the GCLINI member of SGCLPARM.

Note: If RETAIN is used, because the migrated generations do not exist under the new name, subsequent access to the generations will fail whether one is accessed specifically or via specification of the base name only. This option is provided to retain relativity.

Note: To avoid destroying the relativity of active generations, IMS Cloning Tool does NOT allow removing selected generations. For data that is migrated and required on the target volumes, they must be recalled prior to the COPY.

• Default: The default is SKIP. For RETAIN, the default is RC(4)
• Required: No
• Restrictions: RC is mutually exclusive with SKIP.

GDG-EMPTY( SKIP )

or GDG-EMPTY ( RETAIN, RC(0 4) )

This option addresses an empty base GDG that matches a RENAME mask.

The GDG entry can be skipped, or the new base entry can be added to the target user catalog. If not specified in the control statements, the defaults are obtained from the GCLINI member of SGCLPARM.

• Default: The default is SKIP. For RETAIN, the default is RC(4)
• Required: No
• Restrictions: RC is mutually exclusive with SKIP.

GDG-MIGRATED( ERROR )

or GDG-MIGRATED ( RETAIN, RC(0 4) )

This option addresses the situation where a GDG matches a rename mask and at least one generation is indeed found on a volume, yet one or more generations are migrated. The migrated generation may be treated as an ERROR, or the GDS entry in the GDG base record may be RETAINED with a corresponding return code of 0 or 4.

If not specified in the control statements, the defaults are obtained from the GCLINI member of SGCLPARM.

Note: If RETAINED, because the migrated generation does not exist under the new name, subsequent access to the generation will fail whether it is accessed specifically or via specification of the base name only.

To avoid destroying the relativity of active generations, IMS Cloning Tool does not allow removing selected generations. Retaining non-existent migrated generations may be suitable for situations such as overstated GDG limits where it is normal for older generations to be migrated and
hopefully never accessed, or Log Files etc. where perhaps only the current generation is kept on primary and older migrated generations are kept as a safety factor.

- Default: The default is ERROR. For RETAIN, the default is RC(4)
- Required: No
- Restrictions: RC is mutually exclusive with ERROR.

GDG-TAPE( ERROR )
or GDG-TAPE( RETAIN,RC(0 \| 4) )

This option addresses the situation where a GDG matches a rename mask and at least one generation is indeed found on a volume, yet one or more generations are on tape. The tape generation may be treated as an ERROR, or the GDS entry in the GDG base record may be RETAINED with a corresponding return code of 0 or 4.

If not specified in the control statements, the defaults are obtained from the GCLINI member of SGCLPARM.

**Note:** If RETAIN is specified, accessing a target tape GDS will cause a S813 ABEND whether it is accessed specifically or via specification of the base name only.

To avoid destroying the relativity of active generations, IMS Cloning Tool does not allow removing selected generations. Retaining non-existent tape generations may be suitable for situations such as overstated GDG limits where older generations may have been created on tape.

- Default: The default is ERROR. For RETAIN, the default is RC(4)
- Required: No
- Restrictions: RC is mutually exclusive with ERROR.

ISSUE-VCLOSE(NO)
or ISSU-VCLOSE ( YES | BEFORE | AFTER [ , LOCAL | SYSPLEX ] )

Specifies whether a catalog modify command, F CATALOG,VCLOSE(targetvolser), will be issued as part of the volume RENAME processing. The Catalog Address Space (CAS), caches VVDS information. The modify command requests that the VVDS information cached for the target volume be refreshed.

- NO specifies that the modify command will NOT be issued.
- BEFORE specifies that the modify command will be issued only before the VVDS is updated.
- AFTER specifies that the modify command will be issued only after the VVDS has been updated.
- YES specifies that the modify command will be issued both before the VVDS is updated and after the VVDS has been updated.

If not specified in the control statements, the defaults are obtained from the GCLINI member of SGCLPARM.

- LOCAL – the catalog modify command, F CATALOG,VCLOSE(targetvolser), will be issued only on the system that RENAME is running on.
- SYSPLEX – the catalog modify command, F CATALOG,VCLOSE(targetvolser), will be issued on the local system, and the modify command will be routed to all the other systems in the sysplex, via an MVS ROUTE *OTHER command, after the VVDS has been updated.
• Default: YES, LOCAL
• Required: No
• Restrictions: LOCAL and SYSPLEX are mutually exclusive with NO.

**MAX-TASKS**

Specifies the maximum subtasks to be used for volume processing in the RENAME step. Increasing the number of subtasks can greatly reduce the volume processing time. Provide a reasonably large region size and increase the number of subtasks until a point of no gain is realized. Because contention issues contributing to the point of no gain will vary by installation, experiment with this parameter to determine the optimum setting. Although the RENAME step can be rerun, because volume VTOCs, VTOC indexes, and VVDSs are restored when RERUN is specified, comparative times will be distorted. Hence, when experimenting, run the process completely over from the COPY step. This exercise can also be a good time to experiment with the COPY COPYCMDLIMIT option.

Another factor to consider is the cataloging time. The cataloging is performed by a subtask of RENAME that runs in parallel with the volume processing subtasks. If the number of data sets involved is high compared to the number of volumes, because the cataloging subtask may take longer than all volume processing subtasks, increasing the volume processing MAX-TASKS may have no effect on the complete run time of RENAME. The time the cataloging process ends, relative to the end time of the entire step, can be found in the output.

The maximum value is 255.
• Default: 1
• Required: No
• Restrictions: None.

**MGMTCLAS**

specifies the SMS MGMTCLAS to be used for all renamed data sets on SMS managed volumes if the value is in quotes, or will be copied from the corresponding source volume data set if SOURCE is specified. SOURCE is the default. MGMTCLAS is mutually exclusive with DRIVEACS.

**MGMTCLAS-PAIRS** specifies source/target pairs for mgmtclas.

If a data set has the specified source mgmtclas, the target data set will be given the paired target mgmtclas.

DEFAULT_IF_NO.MATCH indicates a mgmtclas to be assigned to any target data set whose source mgmtclas was not matched by any other MGMTCLAS-PAIR entry.

SOURCE indicates such data sets should be assigned the mgmtclas used by the source data set. If you want to use an SMS mgmtclas, SOURCE, enter SOURCE in quotes.
• Default: The default for MGMTCLAS is SOURCE.
• Required: No
• Restrictions: MGMTCLAS and MGMTCLAS-PAIRS are mutually exclusive with DRIVEACS.
• Short form(s): MC, or MCP.
MISSINGUCAT (DELETE | KEEP [ , RC (0 | 4 | 8) ])

Specifies the disposition and return code to be generated for data sets found on a volume, where the data set name matches a rename mask, but the catalog back-pointer is not one of the ‘source’ catalogs specified in the corresponding COPY command. If not otherwise specified in the control statements, the default disposition and return code are obtained from this token in the GCLINI member of the SGCLPARM library.

Only data sets with VVDS records have a catalog back-pointer. A return code of 8 is suggested because MISSINGUCAT errors will likely be due to the omission of a catalog name in the COPY step.

Catalog back-pointers could be in error to start with. However, to use a return code of 8 and hence avoid continual review of any errors disclosed, it is preferable to diagnose volumes so that a MISSINGUCAT detection in fact means a user catalog was omitted in the COPY step.

- Default: KEEP, RC(4)
- Required: No
- Restrictions: None.

NOTRENAME (DELETE | KEEP [ , RC (0 | 4 | 8) ])

Specifies the disposition of data sets that do not match a rename mask, and the return code to be generated if at least one occurrence is detected. If not otherwise specified in the control statements, the default disposition and return code are obtained from this token in the GCLINI member of the SGCLPARM library.

If you require that rename masks match all data sets on all volumes, and if they don’t, you want the entire process to fail, specify a return code of 8 and the corresponding conditional use of the target volumes set for execution only if the return code is less than 8. In that the RENAME and or COPY step will be rerun, specify KEEP as the disposition.

If you want the process to fail when the target volumes contain data sets not needed by the application accessing the target volumes (without renaming these non-application data sets), specify a return code of 8. Additionally, specify EXCLUDE-SRCNAME(RC(0)) and EXCLUDE-SRCNAME-MASKS with entries identifying the expected non-application data sets. If all of the data sets on the volumes are renamed, or if they match an entry in EXCLUDE-SRCNAME-MASKS, the return code will be 0. If any of the data sets on the volume are not renamed, and they do not match an entry in EXCLUDE-SRCNAME-MASKS, the return code will be 8 and the process will fail. Because the data sets that match an entry in EXCLUDE-SRCNAME-MASKS will not be renamed and will not be cataloged, you should specify the DELETE option (especially for SMS-managed volumes). Specifying DELETE will free up space if allocations occur on target volumes.

If volumes contain data sets not needed by the application that will access target volumes, and rename masks may not match all data sets, specify a return code of 0 or 4. Because not-renamed data sets will also not be cataloged, especially for SMS-managed volumes, you should specify the DELETE option. This also frees up the space if allocations may occur on target volumes.

However, note that if not all of the data sets are renamed, and the return code is set for this to be acceptable (0 or 4), the list of not-renamed data sets will need to be reviewed for assurance that needed data sets are indeed renamed. Obviously, it is best if the application involved ‘owns’ the
volumes and hence all data sets should be renamed. In a compromise situation, where the volumes are used by other applications, if feasible, the advantage of renaming data sets that are not actually required, is that the NOTRENAME D return code can be set to 8 to avoid reviewing the list of not-renamed data sets each cycle.

This may be of little concern if a single, or very few rename masks will match all required data sets (i.e., you use effective naming conventions). If, for instance, all data sets belonging to the application will match the mask A1.*. it is probably a safe bet that ignoring data sets not matching the mask will not cause a problem.

- Default: KEEP,RC(8)
- Required: No
- Restrictions: None.

**ORPHANCATENTRY ( DELETE | KEEP [, RC(0 | 4 | 8) ] )**

Specifies the disposition and return code to be generated for data sets found in a catalog but one or more catalog volume cells are not in the list of volumes copied. If not otherwise specified in the control statements, the default disposition and return code are obtained from this token in the GCLINI member of the SGCLPARM library.

- Default: KEEP,RC(8)
- Required: No
- Restrictions: None.

**RECATALOG( Y | N )**

Specifies that IMS Cloning Tool may replace an existing catalog entry without considering it an error. If RECATALOG is not specified, and a target catalog entry for a renamed data set is found to exist, the process fails. If not specified in the control statements, the defaults are obtained from the GCLINI member of SGCLPARM.

Because an incorrect rename 'to' mask could accidentally replace a catalog entry for a data set not involved with the process, the setup should be established such that RECATALOG is not required. This setup can be achieved by utilizing a target catalog used only for target data sets. Because catalog entries for data sets used in each cycle of the process will be 'orphaned' by the target volumes being reused, at the beginning of the next cycle, delete and redefine the catalog, or use the IMS Cloning Tool BCSCLEAN command to delete catalog entries from the previous cycle.

If a target catalog is populated with entries not involved with the copy process, use the BCSCLEAN command sometime between the time target volume usage ends and before the next copy process starts. By eliminating catalog entries from the previous cycle, omitting the RECATALOG option should not result in errors – unless rename 'to' masks are wrong, in which case the replacement of a catalog entry should indeed be prevented.

- Default: N
- Required: No
- Restrictions: None.

**RENAME-AUDIT-LOG ( N | SMF( nnn ) )**

Specifies whether an audit log of the data sets being renamed is to be created by RENAME volume processing.

SMF(nnn) specifies that the audit log will be created and written to SMF with a record type of nnn. Valid values for nnn are 128 through 255
inclusive. SMF must be recording the specified record type. The layout of
the records written can be found in member RENSMF of the IMS Cloning
Tool SGCLJCL library.

- Default: N
- Required: No
- Restrictions: None.

RENAME-ERROR( ABORT )

or RENAME-ERROR( CONTINUE,RC( 0 | 4 | 8 ) )

This option specifies how processing proceeds when a RENAME error is
encountered.

ABORT will terminate with an RC=8 after the first error to preserve
integrity. ABORT is recommended.

CONTINUE will continue processing after most errors and the RENAME
command will complete with the specified return code unless an error not
handled by the CONTINUE logic is encountered.

Note: The use of CONTINUE can cause inconsistencies between the
contents of the volumes and catalogs. Possible problems include:

- data sets could be cataloged but are not renamed on disk
- data sets could be renamed on disk but are not cataloged
- data sets that are not renamed on disk may not be deleted from
disk
- GDG base and GDS entries will not exist in the catalog when
  there is a missing GDS
- a catalog entry may not point at the correct volume
- a catalog entry may be invalid
- leave uncataloged data sets on SMS managed volumes.

If this keyword is specified, IMS Cloning Tool will not guarantee
integrity and the given results will not be fixed by IMS Cloning
Tool.

If not specified in the control statements, the defaults are obtained from the
GCLINI member of SGCLPARM.
- Default: ABORT. For CONTINUE, the default is RC(8)
- Required: No
- Restrictions: RC is mutually exclusive with ABORT.

RENAME-LIST( Y | N )

Specifies whether a list of the renamed data sets is to be produced by
RENAME volume processing.
- Default: N if SIMULATE is not specified. Y if SIMULATE is specified.
- Required: No
- Restrictions: None.

RERUN

Specifies that the RENAME step is being run a second time using the same
target volumes resulting from the COPY step. Rerun of the RENAME step
only is not possible unless the first execution specified SAFE. See the SAFE
| SPEED option for more information.
SAFE causes a backup during the RENAME step of the portions of volumes changed during the volume processing – VTOC, VTOCIX, and VVDS. This backup data is used on a rerun to restore any volumes changed to the state they were in following the COPY step.

Certain errors, such as incorrect rename masks, where the list of volumes copied and the catalogs backed up are correct, can be corrected by rerunning just the RENAME step.

Examine the problem to determine if just a rerun of the RENAME step will resolve the problem or if the COPY step must be rerun. Any errors resulting from a volume being omitted or a catalog being omitted from the COPY step will require a rerun of the COPY step.

The BCSRECS and VOLBKUP data sets must not be deleted by the JCL running the RENAME RERUN. The contents of the BCSRECS and VOLBKUP must be from the prior run of RENAME with either the SAFE or RERUN keywords. If the BCSRECS or VOLBKUP data sets are deleted, the COPY step will need to be run again.

- Default: None.
- Required: No
- Restrictions: RERUN is mutually exclusive with SAFE and SPEED.

SAFE | SPEED
SAFE allows a rerun of the RENAME command by backing up critical volume structures that are changed during the volume processing – the VTOC, VTOCIX, and VVDS. This backup data is used on a rerun to restore any volumes changed to the state they were in following the COPY step. This adds some slight execution time for RENAME to capture the portions of target volumes modified by RENAME.

Incorrect rename masks may be a reason for needing to rerun the RENAME step. If multiple and complicated masks are required, this option is recommended. Also affecting the renaming is whether the data set naming conventions used by the application are fairly static or subject to frequent change – inferring that rename masks need to be watched.

SAFE requires the VOLBKUP parameter. Note the JCL comments that warn about making sure the VOLBKUP data set is not deleted before a rerun of RENAME. If the VOLBKUP data set is lost, the COPY step will need to be run again, provided that the opportunity for correct point-in-time images has not been lost.

If source volume access is not resumed until the entire process is complete (implying that the same point-in-time images can be re-copied), the time to rerun the COPY step may be insignificant compared to adding some overhead with the SAFE option for every cycle.

SPEED is the opposite of SAFE. The RERUN option for the RENAME step will be rejected if attempted. Correction of any errors will require the COPY and RENAME step to be run again.

- Default: SPEED.
- Required: No
- Restrictions: SAFE is mutually exclusive with SPEED and RERUN. SPEED is mutually exclusive with SAFE and RERUN.

SIMULATE
Specifies that only non-destructive RENAME activities are to be performed. RENAME SIMULATE must be used in conjunction with a COPY as the
volumes and catalogs are specified only in the COPY step and are passed via the journal to the RENAME step. The COPY execution may be with or without SIMULATE.

Scenario 1 – a real COPY (without SIMULATE) followed by a RENAME SIMULATE will use only the target volumes.

Scenario 2 – a COPY SIMULATE followed by a RENAME SIMULATE will use only the source volumes because there are no target volumes yet.

If COPY DATAMOVER(PGM(NONE)) was used with SIMULATE, it can be followed by a RENAME SIMULATE.

SIMULATE will perform the masking comparisons to both catalog and volume records. Errors can be discovered such as not all data sets renamed, incomplete renaming of VSAM sphere associations and components, multivolume data sets not wholly contained in the volume list, GDG generations that stray outside of the volume list, catalog entries that match a mask but one or volumes were not ‘copied’, etc.

Because omitting a catalog(s) or volume(s) in the COPY step is not detected until the RENAME step, it is strongly advised that SIMULATE be used whenever significant changes are made to the involved application(s), especially if resumption of source volume access is triggered by completion of the COPY step – i.e., the opportunity for re-capturing point-in-time images has been lost.

• Default: None.
• Required: No.
• Restrictions: None.
• Short form: SIM

STORCLAS (storage class | SOURCE)
or STORCLAS-PAIRS (Sourcestorclas1, Targetstorclas1, Sourcestorclas2, Targetstorclas2, ..., DEFAULT_IF_NO_MATCH, Targetstorclas | SOURCE)

STORCLAS specifies the SMS STORCLAS to be used for all renamed data sets on SMS managed volumes if the value is in quotes, or will be copied from the corresponding source volume data set if SOURCE is specified.

STORCLAS-PAIRS specifies source/target pairs for storclas.

If a data set has the specified source storclas, the target data set will be given the paired target storclas.

DEFAULT_IF_NO_MATCH indicates a storclas to be assigned to any target data set whose source storclas was not matched by any other STORCLAS-PAIR entry.

SOURCE indicates such data sets should be assigned the storclas used by the source data set. If you want to use an SMS storclas, SOURCE, enter SOURCE in quotes.

• Default: The default for STORCLAS is SOURCE.
• Required: No.
• Restrictions: STORCLAS and STORCLAS-PAIRS are mutually exclusive with DRIVEACS.
• Short form(s): SC, or SCP

TEMPDSN (DELETE | KEEP [ ,RC(0 | 4 | 8) ])

Specifies the disposition of temporary data sets and the return code to be generated if at least one occurrence is discovered. If not otherwise specified
in the control statements, the default disposition and return code are obtained from this token in the GCLINI member of THE SGCLPARM LIBRARY.

- Default: DELETE, RC(4)
- Required: No.
- Restrictions: None.

**UPDATE-IAM-ASSOCIATIONS ( Y | N )**

Specifies whether IAM data set associations are to be updated as part of RENAME processing. IAM must be active on the system for the updates to happen. This option addresses the situation where there are IAM data sets that are being cloned that include AIXes and PATHs, and it is desired to update the associations to correspond with the new data set names. The association information for IAM data sets will be determined and updated by internally using IDCAMS LISTCAT and IDCAMS DEFINE RECATALOG commands. When using RERUN, it is possible to get missing component errors when rename mask entries that cover IAM data sets have changed. This is due to the IAM association data not being in the ICF catalog, VTOC, VTOCIX, or VVDS, so IMS Cloning Tool is unable to properly determine the changed IAM associations. When using SIMULATE, it is not possible for IMS Cloning Tool to determine the IAM associations and verify that all the associated IAM data sets have been cloned.

- Default: N
- Required: No
- Restrictions: None
- Short form: UIA

**VOLBKUP-DDN**

Specifies the DD name for the backup data set to be used for backing up target volume VTOCs, VTOCIXs, and VVDSs, to be used in the event of a rerun of the RENAME step. SAFE is required in conjunction with this parameter.

- Default: None
- Required: No.
- Restrictions: None.

**Note:** Variables supplied to ACS do not include data set attributes because IMS Cloning Tool catalogs target data sets concurrently with changing target volumes – as opposed to cataloging data sets only after volumes have been modified. This methodology greatly improves the performance of RENAME, at the expense of the cataloging task not being aware of data set attributes that are normally supplied when driving ACS.

If SMS treatment of target volume data sets will be special, specific SMS classes can be supplied with the DATACLAS, MGMTCLAS, and STORCLAS keywords, or you can also set up a construct that triggers the IMS Cloning Tool job name.

**RENAME Step JCL Example**

For completeness and to illustrate where JCL parameters and IMS Cloning Tool control statements must match, the following JCL includes sample IMS Cloning
Tool control statements. Complete RENAME command control statement syntax is documented in the beginning of this chapter.

The RENAME step JCL is shown in the following example. The numbers preceding the JCL correspond to notes, (following this sample JCL) containing an explanation of the line of JCL.

```
//??????? JOB , 'GCL RENAME',CLASS=A,MSGCLASS=X
//S0 EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=* 
//SYSIN DD * 
1 DEL GCL.WRK.VOLDUMP
1 DEL GCL.WRK.BCSRECS
2 //S1 EXEC PGM=GCL00010,REGION=8M
3 //STEPLIB DD DSN=HLQ?.SGCLLOAD,DISP=SHR
4 //GCLINI DD DSN=HLQ?.SGCLPARM(GCLINI),DISP=SHR
5 //SORTMSG DD SYSOUT**
6 //SORTWK01 DD UNIT=SYSALLDA,SPACE=(CYL,(10,10))
//SORTWK02 DD UNIT=SYSALLDA,SPACE=(CYL,(10,10))
//SORTWK03 DD UNIT=SYSALLDA,SPACE=(CYL,(10,10))
//SORTWK04 DD UNIT=SYSALLDA,SPACE=(CYL,(10,10))
//SORTWK05 DD UNIT=SYSALLDA,SPACE=(CYL,(10,10))
//SORTWK06 DD UNIT=SYSALLDA,SPACE=(CYL,(10,10))
7 //DRSTATS DD SYSOUT**
8 //GCLPRINT DD SYSOUT**
//SYSUDUMP DD SYSOUT**
9 //JOURNAL DD DSN=GCL.JRNL,DISP=OLD
10 //BCSRECS DD DSN=GCL.WRK.BCSRECS,UNIT-SYSALLDA,DISP=(,CATLG), 
// SPACE=(CYL,(10,10))
11 //VOLDUMP DD DSN=GCL.WRK.VOLDUMP,UNIT-SYSALLDA,DISP=(,CATLG), 
// SPACE=(CYL,(10,10))
//GCLIN DD * 
RENAME

11 SAFE -
11 VOLBKUP-DDN(VOLDUMP) -
11 MAX-TASKS(5) -
9 JOURNAL-DDN(JOURNAL) -
9 NOTRENAMED(DELETE,RC(4)) -
9 MISSINGUCAT(DELETE,RC(8)) -
9 ORPHANCATENTRY(KEEP,RC(8)) -
9 RECATALOG(N) -
9 DATACLAS(TGTDATA) -
9 MGMTCLAS(TGTMGMT) -
9 STORCLAS-PAIRS(SRCSTOR1,TGTSTOR1 -
9 SRCSTOR2,TGTSTOR2 -
9 DEFAULT_IF_NO.Match,TGTSTORX) -
9 RENAME-MASKS( -
9 ASRC.** ATGT.** -
9 BSRC.** BTGT.** -
9 PROD.** TEST.** -
9 )

//*

1. Deletion of volume dumps and BCSRECS in anticipation of allocating new for each execution. Because these data sets recover target volume information and remove BCS entries during a rerun of the RENAME step, DO NOT set up the rerun JCL to delete these data sets.

2. Execution of IMS Cloning Tool main program.

3. IMS Cloning Tool SGCLLOAD library must be authorized.

4. DD for GCLINI, member of the SGCLPARM library. The GCLINI member of the SGCLPARM library provides variables to the IMS Cloning Tool programs. The GCLINI member also contains the product security license codes.

5. DD for sort messages.
6. DDs for sort work data sets. Sort data sets are provided if needed by the sort product used.

7. DD for DRSTATS, SAFE option Dump and Restore output.

8. DD for GCLPRINT, mainline RENAME output.

9. Journal data set used by IMS Cloning Tool commands. This VSAM data set is used to pass information between IMS Cloning Tool steps, and to log information derived from the step executions. The journal file is allocated and cataloged in the COPY step, and used as input and output by the RENAME step. The specified data set name must match the data set allocated in the COPY step. If multiple IMS Cloning Tool processes are created for different applications, each must use a unique journal data set. In the sample JCL, the control statement JOURNAL-DDN(JOURNAL) specifies that a DD with the name JOURNAL is being used, rather than a data set name.

10. DD for BCSRECS. The data set pointed at by this DD is used to store data set names used if RENAME is rerun, and for the BCSCLEAN command. Required regardless of whether rerunning is anticipated or BCSCLEAN is expected to be used. The data set specified in the RENAME step must match the name used in the corresponding BCSCLEAN step. However, if multiple IMS Cloning Tool processes are created for different applications, each must have a unique BCSRECS data set.

   Note: This file cannot be striped.

11. VOLDUMP DD statement. This DD points to a data set used to back up information on target volumes, in case a rerun of the RENAME step is required. This data set is only used if the SAFE parameter is specified. The normal and abnormal disposition must be CATLG.

   In the sample JCL, the control statement VOLBKUP-DDN(VOLDUMP) specifies that a DD with the name VOLDUMP is being used rather that a data set name. If the number of volumes involved is high, and the VTOCs, VVDSs, and VTOC indexes are large, this data set may require a substantial amount of space.

   Note: The RENAME output also includes output for each volume processed with dynamically allocated DD names of VVOLSERX.

---

UCATOPTIONS

*This command is not required.* UCATOPTIONS BACKUP will back up source catalogs when the COPY command used the USERCATALOGS-NOBACKUP keyword. If VOLSER was specified for the source catalog when executing COPY with the USERCATALOGS-NOBACKUP keyword, the backup is taken from the copies of the source catalogs that reside on target volumes. UCATOPTIONS BACKUP must be run before the RENAME command.

UCATOPTIONS LIST will list the source and target ICF catalog pairs and CATWORK data set names in the IMS Cloning Tool journal.

UCATOPTIONS UPDATE will allow the target user catalog name(s) or CATWORK data set name(s) to be changed.

For example, if you specify a target catalog(s) in the COPY command, and want to change the target catalog during the RENAME command, this command will list the source and target ICF catalog pairs currently in the journal and allow you to update the journal with the new target ICF catalog names.
**Note:** If the COPY command used the USRCATALOGS-NOBACKUP keyword, the catalog backup can be done by using the UCATOPTIONS command with the BACKUP keyword. However, the source ICF catalog information being backed up needs to be in synchronization with the contents of the copied volumes. If UCATOPTIONS BACKUP is used (meaning that USRCATALOGS-NOBACKUP was specified for the COPY command), the user must ensure that the source ICF catalogs are logically at the same point in time as when the volumes were copied.

**UCATOPTIONS Command Syntax**

**UCATOPTIONS**

*Required Keywords:*

JOURNAL-DSN( data set name ) | JOURNAL-DDN( ddname )

*Optional Keywords:*

BACKUP [ FORCE ] | LIST | UPDATE

If UPDATE is specified, one of the following keywords must be specified:

NEWCATWORKS( current-dsn1, new-dsn1, current-dsn2, new-dsn2, ...) | NEWCATWORKS-DDN( ddname )
NEWTARGETS( srcusercatalog1, newtgtusercatalog1, srcusercatalog2, newtgtusercatalog2, ...) | NEWTARGETS-DDN( ddname )

**UCATOPTIONS Command & Keyword Definitions**

**UCATOPTIONS**

Optional command that will either list the user catalog pairs from the IMS Cloning Tool journal, or allow the target user catalog name(s) to be changed, or back up source catalogs.

- Required: No
- Restrictions: None

**JOURNAL-DSN ( data set name )**
or **JOURNAL-DDN ( ddname )**

This parameter supplies either the data set name of the IMS Cloning Tool journal file, or a DD name assumed via the JCL to point to a journal data set. The journal is used to pass information between IMS Cloning Tool steps.

- Default: None
- Required: Yes
- Restrictions: None

**BACKUP [ FORCE ] | LIST | UPDATE**

BACKUP requests that the source catalogs be backed up. The backup was not done by COPY because the USRCATALOGS-NOBACKUP keyword was used. If VOLSER was specified for the source catalog when executing COPY with the USRCATALOGS-NOBACKUP keyword, the backup is taken from copies of the source catalogs that reside on target volumes. UCATOPTIONS BACKUP must be run before the RENAME command. If VOLPAIRSDEVN-NOCLIP or VOLPAIRSDEVN-NOCLIP-DDN were used with USRCATALOGS-NOBACKUP in the COPY, VOOPTIONS OFFLINECLIP must be run before UCATOPTIONS BACKUP which must be run before the RENAME command.
BACKUP FORCE requests that the source catalogs be backed up even if they have already been backed up.

LIST requests a display of the current source and target ICF catalog pairs.

UPDATE changes the existing target ICF catalog entries found in the journal with the new target ICF catalog names. UPDATE can not be used if the catalog backup has not been done.

Note: The existing source ICF catalogs must be entered in pairs with the new target ICF catalogs as shown in the NEWTARGETS and NEWTARGETSDDN keyword description.

- Default: LIST
- Required: No
- Restrictions: None for LIST or BACKUP. UPDATE requires one of the following: NEWCATWORKS, NEWCATWORKS-DDN, NEWTARGETS, or NEWTARGETSDDN.

NEWCATWORKS (current-dsn1, new-dsn1, current-dsn2, new-dsn2, ...)

or NEWCATWORKS-DDN( ddname )

NEWCATWORKS specifies the current CATWORK data set name and the new catwork data set name. The current CATWORK data set name must match an IMS Cloning Tool journal entry.

new-dsn1 will replace the current CATWORK data set name with the value of current-dsn1, with the new CATWORK data set name in the journal entry.

NEWCATWORKS-DDN specifies a DD name assumed via the JCL to point to a data set containing the current and new CATWORK data set name pairs. The pairs are the same format as in the NEWCATWORKS keyword.

- Default: None
- Required: No
- Restrictions: May only be specified with UPDATE.

NEWTARGETS( srcusercatalog1, newtgtusercatalog1, srcusercatalog2, newtgtusercatalog2, ...

or NEWTARGETS-DDN( ddname )

NEWTARGETS specifies the current source ICF catalog and the new target ICF catalog. The current source ICF catalog must match an IMS Cloning Tool journal entry.

newtgtusercatalog1 will replace the current target user catalog which is paired with srcusercatalog1 in the journal entry.

NEWTARGETS-DDN specifies a DD name assumed via the JCL to point to a data set containing the source and target ICF catalog pairs. The pairs are the same format as in the NEWTARGETS keyword.

- Default: None
- Required: No
- Restrictions: May only be specified with UPDATE.

**UCATOPTIONS Step JCL Example**

For completeness and to illustrate where JCL parameters and IMS Cloning Tool control statements must match, the following JCL includes sample IMS Cloning Tool control statements.
The UCATOPTIONS step JCL is shown in the following example. The numbers preceding the JCL correspond to notes, (following this sample JCL) containing an explanation of the line of JCL.

```
//?????? JOB , 'GCL UCATOPTIONS',CLASS=A,MSGCLASS=X
1 //S1 EXEC PGM=GCL00010,REGION=8M
2 //STPLIB DD DSN=HLQ?.SGCLLOAD,DISP=SHR
3 //GCLINI DD DSN=HLQ?.SGCLPARM(GCLINI),DISP=SHR
4 //GCLPRINT DD SYSOUT=*
   //SYSUDUMP DD SYSOUT=*
5 //JOURNAL DD DSN=GCL.JRNL,DISP=OLD
   //GCLIN DD *
   UCATOPTIONS
   JOURNAL-DDN(JOURNAL)
   //*
```

1. Execution of IMS Cloning Tool main program.
2. IMS Cloning Tool SGCLLOAD library must be authorized.
3. DD for GCLINI, member of the SGCLPARM library. The GCLINI member of the SGCLPARM library provides variables to the IMS Cloning Tool programs. The GCLINI member also contains the product security license codes.
4. DD for GCLPRINT output.
5. Journal data set used by IMS Cloning Tool commands. This VSAM data set is used to pass information between IMS Cloning Tool steps, and to log information derived from the step executions. The journal file is allocated and cataloged in the COPY step and used as input to the UCATOPTIONS command. In the sample JCL, the control statement JOURNAL-DDN(JOURNAL) specifies specifying that a DD with the name JOURNAL is being used rather than a data set name.

---

**VARYOFF**

This command is not required. VARYOFF is provided to vary target or source volumes offline on only the local system where the command is run, on all systems in the sysplex, or on all systems in the sysplex other than the local system.

Note: VARYOFF should not be used in JES3 environment. The VARYOFF command issues an MVS VARY command, which is not recommended for JES3-managed devices.

The volumes to be varied offline can be specified by:

- Using the vary file. The volumes are determined when the VARYOFF command is run by reading a provided COPY command (COPY-CMD-DDN(COPYCMD) DD that points to a file which contains IMS Cloning Tool COPY command syntax. The COPY syntax is read for volume information but is not executed during the VARYOFF processing). The volumes are then saved in the vary file for use by a subsequent VARYON command to bring the volumes online.
  The vary file can be used when the volumes have different device numbers on different systems. For this case the VARYOFF command would be run with SCOPE(LOCAL) on each system with a separate vary file for each system.
- Using an existing journal data set. The volumes have been predetermined by the IMS Cloning Tool COPY command that created the journal and can be used if the volumes will be varied offline later in the process.

When using SCOPE(SYSPLEX(ALL)) or SCOPE(SYSPLEX(OTHER)) the volumes need to have the same device numbers on the systems in the sysplex.
VARYOFF Command Syntax

VARYOFF

Required Keywords:

{ JOURNAL-DSN( data set name ) | JOURNAL-DDN( ddname ) | VARY-DDN( ddname ) }
TARGET | SOURCE

Required only if VARY-DDN( ddname ) is specified:

COPY-CMD-DDN( ddname )

Optional Keywords:

MAX-VOLS-PER-CMD( nn | 8 )
SCOPE( LOCAL | SYSPLEX( { ALL | OTHER } [ , T( nnn ) ] ) )
SIMULATE
VOL-ALREADY-OFFLINE{ { QUIT | CONTINUE } [ , ( RC( nnn | 8 ) ) ] }

VARYOFF Command & Keyword Definitions

VARYOFF
Optional command to vary volumes offline.
- Required: No
- Restrictions: None

JOURNAL-DSN( data set name )
or JOURNAL-DDN( ddname )
This parameter supplies either the data set name of the IMS Cloning Tool journal file, or a DD name assumed via the JCL to point to a journal data set. The journal is used to pass information between IMS Cloning Tool steps.
- Default: None
- Required: Yes, if VARY-DDN is not specified.
- Restrictions: Mutually exclusive with VARY-DDN.
- Short form(s): JDSN, JDDN

TARGET | SOURCE
Specifies the volume set to use. TARGET specifies that the target volumes will be used. SOURCE specifies that the source volumes will be used.
- Default: None
- Required: Yes
- Restrictions: None

VARY-DDN( ddname )
This parameter supplies the DD name of the IMS Cloning Tool vary file assumed via the JCL to point at a vary data set.

If multiple IMS Cloning Tool setups are used for different volume groups, DO NOT use the same vary data set. Each IMS Cloning Tool volume group needs a different vary data set.

The vary file is used to pass VOLSERs and device numbers between an IMS Cloning Tool VARYOFF step and an IMS Cloning Tool VARYON step. Therefore, as noted in the JCL comments, it must be cataloged in the VARYOFF step when first created, and referenced in the VARYON step.
- Default: None
- Required: Yes, if JOURNAL-DSN and JOURNAL-DDN are not specified.
Restrictions: Mutually exclusive with JOURNAL-DSN and JOURNAL-DDN.

**COPY-CMD-DDN( ddname )**
This parameter supplies the DD name of the IMS Cloning Tool copy command.
- Default: None
- Required: Yes, if VARY-DDN is specified.
- Restrictions: None

**MAX-VOLS-PER-CMD( nn | 8 )**
Specifies the maximum number of volumes that will be used in a single SYSPLEX vary offline command.
- Default: 8
- Required: no
- Restrictions: Used only when SCOPE(SYSPLEX(..)) is specified.

**SCOPE( LOCAL | SYSPLEX( { ALL | OTHER } [, T( nnn ) ] ) )**
Specifies the scope of the vary offline commands.
- LOCAL specifies that the vary offline commands will be issued only on the local system.
- SYSPLEX specifies that the vary offline commands will be issued sysplex-wide.
- ALL specifies that the volumes will be varied offline to the local system and vary offline commands will be routed to all the other systems in the sysplex.
- OTHER specifies that vary offline commands will be routed to all the other systems in the sysplex, no vary offline commands will be issued on the local system.
- T specifies an optional timeout interval that will be added to the sysplex vary commands.
- Default: Local
- Required: No
- Restrictions: None

**SIMULATE**
Simulate will verify the syntax and determine the volumes to be varied offline but will not issue any vary offline commands.
- Default: None
- Required: No
- Restrictions: None
- Short form: SIM

**VOL-ALREADY-OFFLINE( { QUIT | CONTINUE } [, ( RC( nnn | 8 ) ) ] )**
Specifies the action to be taken when a volume to be processed is already offline.
- QUIT specifies that processing will quit when the first volume already offline is encountered.
- CONTINUE specifies that processing will continue with the next volume when a volume already offline is encountered.
RC specifies the return code that will be used when a volume already offline is encountered.

- Default: QUIT, RC(8)
- Required: No
- Restrictions: Used only when SCOPE(LOCAL) or SCOPE(SYSPLEX(ALL)) are specified.

**VARYOFF Step JCL: Example to vary volumes offline using vary file**

For completeness and to illustrate where JCL parameters and IMS Cloning Tool control statements must match, the following JCL includes sample IMS Cloning Tool control statements.

The VARYOFF step JCL is shown in the following example. The numbers preceding the JCL correspond to notes, (following this sample JCL) containing an explanation of the line of JCL.

```plaintext
//??????? JOB , 'GCL VARYOFF',CLASS=A,MSGCLASS=X
//S0 EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=*
//SYSIN DD SYSOUT=* 1
//DEL GCL.VARY
SET MAXCC=0 2
//S1 EXEC PGM=GCL00010,REGION=6M
//STEPLIB DD DSN=HLQ?.SGCLLOAD,DISP=SHR
//GCLINI DD DSN=HLQ?.SGCLPARM(GCLINI),DISP=SHR
//GCLPRINT DD SYSOUT=* 3
//SYSUDUMP DD SYSOUT=*
//VARY DD DSN=GCL.VARY,RECORG=KS,KEYLEN=64,KEYOFF=0,
//      DISP=(,CATLG),UNIT=SYSALLDA,
//      LRECL=600,SPACE=(CYL,(10,10))
//GCLIN DD *
//VARYOFF
VARYOFF 4
//TARGET
//SCOPE(LOCAL)
//COPY-CMD-DDN(COPYCMD)
//VARY-DDN(VARY)

//COPYCMD DD *
COPY
      DATA-MOVER( 5
               COPYCMDLIMIT(24) -
               ) -
      FROM-VOLSER(VSRC02) -
      TO-VOLSER(VTGT02) -
      USERCATALOGS{
               USERCAT.SRC01 USERCAT.TGT01 -
               USERCAT.SRC02 USERCAT.TGT02 -
               }
      CATWORK-DDN(GCL.WRK.* ) -
      JOURNAL-DDN(JOURNAL)

//* 6
1. Deletion of journal data set in anticipation of allocating new for each execution.
2. Execution of IMS Cloning Tool main program.
3. IMS Cloning Tool SGCLLOAD library must be authorized.
4. DD for GCLINI, member of the SGCLPARM library. The GCLINI member of
   the SGCLPARM library provides variables to the IMS Cloning Tool programs.
   The GCLINI member also contains the product security license codes.
5. DD for GCLPRINT output.
```
6. Vary data set. This VSAM data set is used to pass information between the IMS Cloning Tool VARYOFF and VARYON steps. The vary file is allocated and cataloged in the VARYOFF step and used as input to the VARYON command. In the sample JCL, the control statement VARY-DDN(VARY) is specifying that a DD with the name VARY is being used.

7. TARGET parameter that specifies the target volumes found in the journal will be varied offline. In the COPY command, the target volumes specified will be used.

8. SCOPE parameter specifying LOCAL will cause the vary offline commands to be issued only on the local system.

9. The COPY command. The COPY command is used to derive the volumes for processing. In the sample JCL, the control statement COPY-CMD-DDN(COPYCMD) is specifying that a DD with the name COPYCMD is being used to read the copy command.

**VARYOFF Step JCL: Example to vary volumes offline using journal**

For completeness and to illustrate where JCL parameters and IMS Cloning Tool control statements must match, the following JCL includes sample IMS Cloning Tool control statements.

The VARYOFF step JCL is shown in the following example. The numbers preceding the JCL correspond to notes, (following this sample JCL) containing an explanation of the line of JCL.

```
//??????? JOB , 'GCL VARYOFF',CLASS=A,MSGCLASS=X
1 //S1 EXEC PGM=GCL00010,REGION=6M
2 //STEPLIB DD DSN=HLQ?.SGCLLOAD,DISP=SHR
3 //GCLINI DD DSN=HLQ?.SGCLPARM(GCLINI),DISP=SHR
4 //GCLPRINT DD SYSOUT=* 
5 //SYSUDUMP DD SYSOUT=* 
6 //JOURNAL DD DSN=GCL.JRNL,DISP=OLD
7 //GCLIN DD *
8 VARYOFF -
9 TARGET -
10 SCOPE(SYSPLEX(OTHER)) -
11 JOURNAL-DDN(JOURNAL)
```

1. Execution of IMS Cloning Tool main program.
2. IMS Cloning Tool SGCLLOAD library must be authorized.
3. DD for GCLINI, member of the SGCLPARM library. The GCLINI member of the SGCLPARM library provides variables to the IMS Cloning Tool programs. The GCLINI member also contains the product security license codes.
4. DD for GCLPRINT output.
5. Journal data set used by IMS Cloning Tool commands. This VSAM data set is used to pass information between IMS Cloning Tool steps, and to log information derived from the step executions. The journal file is allocated and cataloged in the COPY step and used as input to the VARYOFF command. In the sample JCL, the control statement JOURNAL-DDN(JOURNAL) is specifying that a DD with the name JOURNAL is being used rather than a data set name.
6. TARGET parameter that specifies the target volumes found in the journal will be varied offline.
7. SCOPE parameter specifying SYSPLEX(OTHER) will cause the vary offline commands to be routed to all other systems in the sysplex.
This command is not required. VARYON is provided to vary target or source volumes online. The VARYON command can vary volumes online on only the local system where the command is run, on all systems in the sysplex, or on all systems in the sysplex other than the local system.

When using SCOPE(SYSPLEX(ALL)) or SCOPE(SYSPLEX(OTHER)) the volumes need to have the same device numbers on the systems in the sysplex.

Note: VARYON should not be used in JES3 environment. The VARYON command issues an MVS VARY command, which is not recommended for JES3-managed devices.

The volumes to be varied online can be specified by:

- Using the vary file. By using the vary file, the volumes have been predetermined by the IMS Cloning Tool VARYOFF command that created the vary file. The vary file can be used when the volumes have different device numbers on different systems. For this case, the VARYON command would be run with SCOPE(LOCAL) on each system with a separate vary file for each system.
- Using an existing journal data set. The volumes have been predetermined by the IMS Cloning Tool COPY command that created the journal.

When using SCOPE(SYSPLEX(ALL)) or SCOPE(SYSPLEX(OTHER)) the volumes need to have the same device numbers on the systems in the sysplex.

**VARYON Command Syntax**

```
VARYON
```

**Required Keywords:**

```
{ JOURNAL-DSN( data set name ) | JOURNAL-DDN( ddname ) | VARY-DDN( ddname ) }
```

*Required only if JOURNAL-DSN( data set name ) or JOURNAL-DDN( ddname ) is specified:*

```
TARGET | SOURCE
```

**Optional Keywords:**

```
MAX-VOLS-PER-CMD( nn | 8 )
SCOPE( LOCAL | SYSPLEX( ALL | OTHER ) [ , T( nnn ) ] )
SIMULATE
VOL-ALREADY-ONLINE( { QUIT | CONTINUE } [ , ( RC( nnn | 8 ) ] )
WRONG-VOLSER( { QUIT | CONTINUE } [ , ( RC( nnn | 8 ) ] )
```

**VARYON Command & Keyword Definitions**

**VARYON**

- Optional command to vary volumes online.
  - Required: No
  - Restrictions: None

**JOURNAL-DSN (data set name)**

or **JOURNAL-DDN (ddname)**

This parameter supplies either the data set name of the IMS Cloning Tool
journal file, or a DD name assumed via the JCL to point to a journal data set. The journal is used to pass information between IMS Cloning Tool steps.

- Default: None
- Required: Yes, if VARY-DDN is not specified.
- Restrictions: Mutually exclusive with VARY-DDN.
- Short form(s): JDSN, JDDN

**TARGET | SOURCE**

Specifies the volume set to use. **TARGET** specifies that the target volumes will be used. **SOURCE** specifies that the source volumes will be used.

- Default: None
- Required: Yes, if JOURNAL-DSN or JOURNAL-DDN is specified.
- Restrictions: Mutually exclusive with VARY-DDN.

**VARY-DDN( ddname )**

This parameter supplies the DD name of the IMS Cloning Tool vary file assumed via the JCL to point at a vary data set.

If multiple IMS Cloning Tool setups are used for different volume groups, DO NOT use the same vary data set. Each IMS Cloning Tool volume group needs a different vary data set.

The vary file is used to pass VOLSERs and device numbers between an IMS Cloning Tool VARYOFF step and an IMS Cloning Tool VARYON step. Therefore, as noted in the JCL comments, it must be cataloged in the VARYOFF step when first created, and referenced in the VARYON step.

- Default: None
- Required: Yes, if JOURNAL-DSN and JOURNAL-DDN are not specified.
- Restrictions: Mutually exclusive with VARY-DDN.

**MAX-VOLS-PER-CMD( nn | 8 )**

Specifies the maximum number of volumes that will be used in a single SYSPLEX vary online command.

- Default: 8
- Required: no
- Restrictions: Used only when SCOPE(SYSPLEX(..)) is specified.

**SCOPE( LOCAL | SYSPLEX( { ALL | OTHER } [ , T( nnn ) ] ) )**

Specifies the scope of the vary online commands.

**LOCAL** specifies that the vary online commands will be issued only on the local system.

**SYSPLEX** specifies that the vary online commands will be issued sysplex-wide.

**ALL** specifies that the volumes will be varied online to the local system and vary online commands will be routed to all the other systems in the sysplex.

**OTHER** specifies that vary online commands will be routed to all the other systems in the sysplex, no vary online commands will be issued on the local system.

**T** specifies an optional timeout interval that will be added to the sysplex vary commands.
• Default: Local
• Required: No
• Restrictions: None

SIMULATE
Simulate will verify the syntax and determine the volumes to be varied offline but will not issue any vary online commands.
• Default: None
• Required: No
• Restrictions: None
• Short form: SIM

VOL-ALREADY-ONLINE( { QUIT | CONTINUE } [ , ( RC( nnn | 8 ) ) ] )
Specifies the action to be taken when a volume to be processed is already online.

QUIT specifies that processing will quit when the first volume already offline is encountered.

CONTINUE specifies that processing will continue with the next volume when a volume already online is encountered.

RC specifies the return code that will be used when a volume already online is encountered.
• Default: QUIT, RC(8)
• Required: No
• Restrictions: Used only when SCOPE(LOCAL) or SCOPE(SYSPLEX(ALL)) are specified.

WRONG-VOLSER( { QUIT | CONTINUE } [ , ( RC( nnn | 8 ) ) ] )
Specifies the action to be taken when a volume that is brought online has a different VOLSER than expected.

QUIT specifies that processing will quit when the first volume with a wrong VOLSER is encountered.

CONTINUE specifies that processing will continue with the next volume when a volume with a wrong VOLSER is encountered.

RC specifies the return code that will be used when a volume with a wrong VOLSER is encountered.
• Default: QUIT, RC(8)
• Required: No
• Restrictions: Used only when SCOPE(LOCAL) or SCOPE(SYSPLEX(ALL)) are specified.

VARYON Step JCL: Example to vary volumes online using vary file

For completeness and to illustrate where JCL parameters and IMS Cloning Tool control statements must match, the following JCL includes sample IMS Cloning Tool control statements.

The VARYON step JCL is shown in the following example. The numbers preceding the JCL correspond to notes, (following this sample JCL) containing an explanation of the line of JCL.
VARYOFF Step JCL: Example to vary volumes online using journal

For completeness and to illustrate where JCL parameters and IMS Cloning Tool control statements must match, the following JCL includes sample IMS Cloning Tool control statements.

The VARYOFF step JCL is shown in the following example. The numbers preceding the JCL correspond to notes, (following this sample JCL) containing an explanation of the line of JCL.

1. Execution of IMS Cloning Tool main program.
2. IMS Cloning Tool SGCLLOAD library must be authorized.
3. DD for GCLINI, member of the SGCLPARM library. The GCLINI member of the SGCLPARM library provides variables to the IMS Cloning Tool programs.
4. DD for GCLPRINT output.
5. Journal data set used by IMS Cloning Tool commands. This VSAM data set is used to pass information between IMS Cloning Tool steps, and to log
information derived from the step executions. The journal file is allocated and cataloged in the COPY step and used as input to the VARYON command. In the sample JCL, the control statement JOURNAL-DDN(JOURNAL) is specifying that a DD with the name JOURNAL is being used rather than a data set name.

6. TARGET parameter that specifies the target volumes found in the journal will be varied online.

7. SCOPE parameter specifying SYSPLEX(OTHER) will cause the vary online commands to be routed to all other systems in the sysplex.

VOLOPTONS

This command is not required. VOLOPTONS is intended for situations where the IMS Cloning Tool COPY step is run at one site (SITEA) and the IMS Cloning Tool RENAME step is run at another site (SITEB). VOLOPTONS LIST, CLIP, and UPDATE are intended to support such scenarios.

VOLOPTONS can also be used when the target volumes are offline to the IMS Cloning Tool COPY step and it is not desirable for IMS Cloning Tool COPY to re-label and vary online the target volumes. For instance, the target offline volumes will be backed up prior to the IMS Cloning Tool RENAME step being run. For this function, COPY would use the VOLPAIRSDEVN-NOCLIP or VOLPAIRSDEVN-NOCLIP-DDN keywords, which cause COPY to not re-label or vary online the target volumes. The offline target volumes are then backed up, and VOLOPTONS OFFLINECLIP is used to re-label and vary online the target volumes prior to running the RENAME command.

VOLOPTONS can also be used when the target volumes are online and it is desired to vary them offline and relabel them to their corresponding source volume volser. VOLOPTONS UNCLIP can be used to support this scenario.

For example: SITEA runs the IMS Cloning Tool COPY which FlashCopys (or snaps) source volumes SRC001, SRC002, and SRC003 to target volumes TGT001, TGT002, and TGT003. SITEA then dumps TGT001, TGT002, TGT003 to tape and sends them to SITEB. The COPY also backs up the source user catalogs and establishes the source/target user catalog relationship.

In addition, SITEA backs up the IMS Cloning Tool journal file and the data sets created under the CATWORK-DSN prefix. The journal file and CATWORK-DSN data sets are created by the IMS Cloning Tool COPY command.

SITEB restores the IMS Cloning Tool journal file and the CATWORK-DSN data sets on their system. The CATWORK-DSN data set names must match those used by SITEA. The journal file and CATWORK-DSN data sets must be cataloged.

SITEB restores the tape(s) using 'ADRDSSU RESTORE COPYVOLID'.

At this point, SITEB has SRC001, SRC002, and SRC003 online to their system. The data sets on these volumes are not cataloged.

In order for IMS Cloning Tool RENAME to rename and catalog the SITEB data sets, the volumes need to be clipped to the corresponding target volume serials.

VOLOPTONS CLIP will do this function. It will vary SRC001, SRC002, and SRC003 offline on the image where the command is executed. It will then use
ICKDSF to change SRC001 to TGT001, SRC002 to TGT002, and SRC003 to TGT003.
The target volumes will be varied online by VOLOPTIONS CLIP to the image
where the command is executed.

If SITEB needs to see the volume pairs used by SITEA, VOLOPTIONS LIST will
display the current source/target volume pairs.

IMS Cloning Tool uses the IMS Cloning Tool journal to identify and communicate
source and target volume pairs to IMS Cloning Tool commands. If SITEB needs to
use different target volume serials than those used at SITEA, VOLOPTIONS
UPDATE NEWTARGETS will allow the current target volume serials in the IMS
Cloning Tool journal to be changed.

VOLOPTIONS LIST could be used to provide the initial input for the
NEWTARGETS keyword. The new target volume serial(s) would need to be added
to the source/target pairs from the VOLOPTIONS LIST command.

VOLOPTIONS UPDATE NEWTARGETS and NEWTARGETSDEVN do not support
changing any target volume serial to a source volume serial.

**VOLOPTIONS Command Syntax**

**VOLOPTIONS**

Required Keywords:

{ JOURNAL-DSN( data set name ) | JOURNAL-DDN( ddname ) }

Optional Keywords:

LIST | CLIP | OFFLINECLIP | UNCLIP | UPDATE
RESUME
SIMULATE

Required only if UPDATE is specified:

{ NEWTARGETS( srcvolser1 tgtvolser1 newtgtvolser1 ... [ , srcvolser
tgtvolsern newtgtvolsern ] ) |
NEWTARGETS-DDN( ddname ) |
NEWTARGETSDEVN
( srcvolser1 tgtvolser1 newtgtvolser1 newtgtdevn1 ... [ , srcvolser tgtvolser
newtgtvolsern newtgtdevnn ] ) |
NEWTARGETSDEVN-DDN( ddname ) }

**VOLOPTIONS Command & Keyword Definitions**

**VOLOPTIONS**
Optional command to use when the COPY command is run at one site and
the RENAME command is run at another.

- Required: No
- Restrictions: None

**JOURNAL-DSN (data set name)**
or **JOURNAL-DDN (ddname)**

This parameter supplies either the data set name of the IMS Cloning Tool
journal file, or a DD name assumed via the JCL to point at a journal data
set.

If multiple IMS Cloning Tool setups are used for different volume groups,
DO NOT use the same journal data set. Each IMS Cloning Tool
‘application’ needs a different journal data set.
The journal is used to pass information between IMS Cloning Tool steps (e.g., from the COPY step to the RENAME step). Therefore, as noted in the JCL comments, it must be cataloged in the COPY step when first created, and referenced as OLD in subsequent steps.

Do not delete the data set in the last step, in case restarts or reruns need journal information. It is preferable to delete and replace the data set only at the fresh start of a COPY.

- Default: None
- Required: Yes
- Restrictions: None
- Short form(s): JDSN, JDDN

**LIST | CLIP | OFFLINECLIP | UNCLIP | UPDATE**

**LIST** requests a display of the current source volume serial/target volume serial pairs.

**CLIP** requests that the online source volume serials be changed with ICKDSF to their paired target volume serials.

**OFFLINECLIP** requests that the offline target volumes which currently have source volume serials have their volume serials changed with ICKDSF to their target volume serials and varied online. If VOLPAIRSDEVN-NOCLIP or VOLPAIRSDEVN-NOCLIP-DDN were used with USERCATALOGS-NOBACKUP in the COPY, VOLOPTIONS OFFLINECLIP must be run before UCATOPTIONS BACKUP which must be run before the RENAME command.

**UNCLIP** requests that the online target volumes be varied offline and the target serials be changed with ICKDSF to their paired source volume serials.

**UPDATE** requests changing specified target volume serials to new target volume serials.

- Default: LIST
- Required: No
- Restrictions: UPDATE requires NEWTARGETS or NEWTARGETSDEVN. No restrictions for LIST, CLIP, or OFFLINECLIP, or UNCLIP.

**RESUME**

RESUME specifies that CLIP, OFFLINECLIP, or UNCLIP should resume processing of any volumes that failed to be completely processed by a previous CLIP, OFFLINECLIP, or UNCLIP command.

Prior to running CLIP, OFFLINECLIP, or UNCLIP with RESUME, the problem that caused a volume to not be completely processed by CLIP, OFFLINECLIP, or UNCLIP should be resolved.

- Default: None
- Required: No
- Restrictions: This keyword can only be specified if CLIP, OFFLINECLIP, or UNCLIP is specified.

**SIMULATE**

Simulate will verify the syntax and determine the volumes to be processed and will display what action would have been taken but will not vary any volumes offline or online or change any volume serials with ICKDSF or update the journal.

- Default: None
NEWTARGETS ( srcvolser1 tgtvolser1 newtgtvolser1 ... [, srcvolsern tgtvolsern newtgtvolsern ] )
or NEWTARGETS-DDN ( ddname ) | NEWTARGETSDEVN ( srcvolser1 tgtvolser1 newtgtvolser1 newtgtdevn1 ... [, srcvolsern tgtvolsern newtgtvolsern newtgtdevnn ] )
or NEWTARGETSDEVN-DDN ( ddname )

NEWTARGETS specifies the current source volume serial, the current target volume serial, and the new target volume serial. The current source volume serial and current target volume serial must match the IMS Cloning Tool journal entries. For example: ‘newtgtvolser1’ will replace ‘tgtvolser1’ in the journal entry. The short form is NTGT.

NEWTARGETS-DDN specifies a DD name which has a file containing the volume serial triplets. The triplets are the same format as in the NEWTARGETS keyword.

NEWTARGETSDEVN specifies the current source volume serial, the current target volume serial, and new target device number. The current source volume serial and current target volume serial must match the IMS Cloning Tool journal entries. For example: ‘newtgtvolser1’ will replace ‘tgtvolser1’ and ‘newtgtdevn1’ will replace the target device number in the journal entry. The short form is NTGTD.

NEWTARGETSDEVN-DDN specifies a DD name which has a file containing the volume serial and devn quadruplets. The quadruplets are the same format as in the NEWTARGETSDEVN keyword.

- Default: None
- Required: One of the NEWTARGETS keywords is required if UPDATE is specified.
- Restrictions: May only be specified with UPDATE.

**VOLOPTIONS Step JCL Example**

For completeness and to illustrate where JCL parameters and IMS Cloning Tool control statements must match, the following JCL includes sample IMS Cloning Tool control statements.

The VOLOPTIONS step JCL is shown in the following example. The numbers preceding the JCL correspond to notes, (following this sample JCL) containing an explanation of the line of JCL.

```
//?????? JOB ,'GCL VOLOPTIONS',CLASS=A,MSGCLASS=X
1  //S1   EXEC PGM=GCL00010,REGION=8M
2  //STEPLIB DD DSN=HLQ?.SGCLLOAD,DISP=SHR
3  //GCLINI DD DSN=HLQ?.SGCLPARM(GCLINI),DISP=SHR
4  //GCLPRINT DD SYSOUT=*
5  //SYSUDUMP DD SYSOUT=*  
6  //JOURNAL DD DSN=GCL.JRNL,DISP=OLD
7  //GCLIN DD *
8   VOLOPTIONS
9   -
10  //JOURNAL-DDN(JOURNAL)
11  /*
12   1. Execution of IMS Cloning Tool main program.
13   2. IMS Cloning Tool SGCLLOAD library must be authorized.
```
3. DD for GCLINI, member of the SGCLPARM library. The GCLINI member of the SGCLPARM library provides variables to the IMS Cloning Tool programs. The GCLINI member also contains the product security license codes.

4. DD for GCLPRINT output.

5. Journal data set used by IMS Cloning Tool commands. This VSAM data set is used to pass information between IMS Cloning Tool steps, and to log information derived from the step executions. The journal file is allocated and cataloged in the COPY step and used as input to the VOLOPTONS command. In the sample JCL, the control statement JOURNAL-DDN(JOURNAL) specifies that a DD with the name JOURNAL is being used rather than a data set name.

**Note:** The previous JCL example used LIST, the default, so no keyword was specified. The following two JCL examples are provided for CLIP and UPDATE.

Example using VOLOPTONS (CLIP):

```jcl
VOLOPTONS CLIP -
   JOURNAL-DDN(JOURNAL)
```

Example using VOLOPTONS (UPDATE):

```jcl
VOLOPTONS UPDATE
   NEWTARGETS(VSRC01,VTGT11,VTGT01 -
               VSRC02,VTGT22,VTGT02 -
               VSRC03,VTGT13,VTGT03 -
   JOURNAL-DDN(JOURNAL)
```
Chapter 9. Reference: Database refresh commands

All IMS Cloning Tool commands are invoked by running the main program GCL00010. Functionality is selected by specifying the appropriate IMS Cloning Tool command and parameters.

The following table lists IMS Cloning Tool commands for refreshing databases. Each command is explained in detail in separate topics in this chapter.

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMSDBSTOP</td>
<td>Optional command to stop target databases prior to refreshing.</td>
</tr>
<tr>
<td>IMSDBSTART</td>
<td>Optional command to start databases after the refresh process.</td>
</tr>
<tr>
<td>IMSDBREFRESH</td>
<td>Required command to perform the refreshing of a database</td>
</tr>
<tr>
<td>IMSDBCLEAN</td>
<td>Optional command to delete target data sets that were previously refreshed with the IMSDBREFRESH command</td>
</tr>
</tbody>
</table>

**IMSDBSTOP**

This command is not required. IMSDBSTOP can be used to stop the target IMS database from online access prior to initiating a database refresh if the target databases are on another LPAR.

The GLOBAL keyword can be used to have the database stopped across multiple IMS subsystems in a data sharing environment.

The INDEXES keyword can control whether primary and secondary indexes are also stopped.

After issuing a DBR command to stop a database, IMSDBSTOP will wait for a period of time to see if the database has been stopped. The WAIT keyword can control the amount of time IMSDBSTOP should wait for the database to be stopped, and the return code to use if the wait time has been exceeded.

**Note:**

1. The IMSDBREFRESH command automatically stops the source databases unless FUZZY-COPY(Y) or SIMULATE keywords are used.
2. The IMSDBREFRESH command used with keyword, PRECOPY, automatically stops the source databases unless FUZZY-COPY(Y) or SIMULATE keywords are used.
3. The IMSDBSTOP command must run on the same z/OS image where the target IMS subsystem is active.
IMSDBSTOP Command Syntax

IMSDBSTOP

Required Keywords:
IMS-SSID(ims ssid)
DBD(dbdbname1,dbdbname2,dbdbname3)

Optional Keywords:
GLOBAL
INDEXES(Y|N|P)
LOGICALLY-RELATED(N|Y)
NOFEOV
IMSPLEX(xxxxx)
STOP-COMMAND(DBR|DBD|QUIESCE)
WAIT(nnn | 5 ) [,RC(nn) | 8 ]

SIMULATE

IMSDBSTOP Command & Keyword Definitions

IMSDBSTOP
Optional command to stop a database on a target IMS subsystem.
- Required: No
- Restrictions: None

IMS-SSID(ims ssid)
Required keyword that indicates on which IMS subsystem the target database(s) are to be stopped
- Default: None
- Required: Yes
- Restrictions: None

DBD(dbdbname1,dbdbname2,dbdbname3)
Required keyword that specifies up to 256 databases to be stopped on an IMS subsystem.
- Default: None
- Required: Yes
- Restrictions: None

GLOBAL
Optional keyword that specifies that the /DBR DB command will be issued with the GLOBAL parameter.
- Default: None
- Required: No
- Restrictions: None

IMSPLEX(xxxxx)
Optional keyword that indicates the IMSPLEX name for the source IMS CSL components. The IMSPLEX name is used to issue IMS Type-2 commands such as the UPDATE DB QUIESCE.
- Default: None
- Required: No
- Restrictions: Required if STOP-COMMAND(QUIESCE) is specified

INDEXES(Y|N|P)
Optional keyword that indicates whether any related indexes should be stopped as well. N indicates that only the specified DBDs will be stopped. Y indicates that any related primary or secondary indexes will also be
stopped. P indicates that the primary index, if one exists, will also be stopped but any related secondary indexes will not be stopped. The default is Y.

- Default: Y
- Required: No
- Restrictions: None

**LOGICALLY-RELATED(N|Y)**

Optional keyword that indicates whether a database should be copied if not all logically related databases are copied in the same command. If LOGICALLY-RELATED(N) is specified, then IMS Cloning Tool will only copy a database if all logically related databases are also being copied in the same IMS Cloning Tool command. If LOGICALLY-RELATED(Y) is specified, then IMS Cloning Tool will copy the databases specified even though not all logically related databases may be copied. The default value is N.

- Default: N
- Required: No
- Restrictions: None

**NOFEOV**

Optional keyword that specifies that the /DBR DB command will be issued with the NOFEOV parameter.

- Default: None
- Required: No
- Restrictions: None

**SIMULATE**

Optional keyword that specifies that the actual IMSDBSTOP command is formatted and validated, but not actually issued.

- Default: None
- Required: No
- Restrictions: None

**STOP-COMMAND (DBR|DBD|QUIESCE)**

Optional keyword that indicates the IMS command to be used to stop the source databases. When DBR is specified, the DBRECOVER command is used, and all access to the source databases will be stopped. When DBD is specified, the DBDUMP command will be issued and the full function source databases will be put into read-only mode, and a DBRECOVER command will be issued for DEDBs. When QUIESCE is specified, an UPDATE DB QUIESCE command will be used and IMS will only pause access to the source databases for the duration of the copy.

- Default: DBR
- Required: No
- Restrictions: If 'QUIESCE' is specified, IMSPLEX must also be specified and is only valid for IMS V11 or later.

**WAIT(ann | 5 ) [,RC(rr) | 8 ]**

Optional keyword that specifies the number of minutes (nnn) the IMSDBSTOP command should wait to get exclusive access to the database data sets. If the specified time limit expires before the database(s) has been stopped, IMSDBSTOP will terminate with a return code of rr. The default wait time is 5 minutes. The default return code is 8.
IMSDBSTOP Step JCL Example

For completeness and to illustrate where JCL parameters and IMS Cloning Tool control statements must match, the following JCL includes sample IMS Cloning Tool control statements.

The IMSDBSTOP step JCL is shown in the following example. The numbers preceding the JCL correspond to notes, (following this sample JCL) containing an explanation of the line of JCL.

```
//?????? JOB ,'GCL DB STOP',CLASS=A,MSGCLASS=X
1 //S1 EXEC PGM=GCL00010,REGION=8M
2 //STEPLIB DD DSN=HLQ?.SGCLLOAD,DISP=SHR
3 //GCLINI DD DSN=HLQ?.SGCLPARM(GCLINI),DISP=SHR
4 //GCLPRINT DD SYSOUT=* 
//SYSUDUMP DD SYSOUT=* 
5 //ssidACB DD DSN=ims.ACBLIB,DISP=SHR 
6 //ssidMDA DD DSN=ims.MDALIB,DISP=SHR 
7 //ssidREC1 DD DSN=ims.RECON1,DISP=SHR 
8 //ssidREC2 DD DSN=ims.RECON2,DISP=SHR 
9 //ssidREC3 DD DSN=ims.RECON3,DISP=SHR 
//GCLIN DD *
10 IMS-SSID(IMS1) - 
11 DBD(dbdname1,dbdname2) - 
12 WAIT(2,(RC7))
```

1. Execution of IMS Cloning Tool main program.
2. IMS Cloning Tool SGCLLOAD library must be authorized.
3. DD for GCLINI, member of the SGCLPARM library. The GCLINI member of the SGCLPARM library provides variables to the IMS Cloning Tool programs. The GCLINI member also contains the product security license codes.
4. DD for GCLPRINT output.
5. Required DD that specifies the IMS ACBLIB data sets that contain the DMB control blocks for the target databases to be stopped. The ddname is prefixed with the IMS SSID followed by ‘ACB’.
6. Required DD that specifies the IMS MDALIB data sets that contain the MDA members for the target databases to be stopped. The ddname is prefixed with the IMS SSID followed by ‘MDA’.
7. Required DD that specifies the target IMS RECON1 data set. The ddname is prefixed with the IMS SSID followed by ‘RECON1’.
8. Required DD that specifies the target IMS RECON2 data set. The ddname is prefixed with the IMS SSID followed by ‘RECON2’.
9. Required DD that specifies the target IMS RECON3 data set. The ddname is prefixed with the IMS SSID followed by ‘RECON3’.
10. IMS-SSID parameter specifying the target IMS ssid, IMSI, of the IMS subsystem where the database(s) is to be stopped.
11. DBD parameter that lists the DBDs to be stopped.
12. WAIT parameter that indicates the command should wait a maximum of 2 minutes for all databases specified on the DBD parameter to be stopped. If all databases are not stopped within 2 minutes, the command will end with a return code of 7.
**IMSDBSTART**

*This command is not required.* IMSDBSTART can be used to start an IMS database for online access after a database refresh process has completed. This command can be used in conjunction with the IMSDBREFRESH command when refreshing IMS databases.

The INDEXES keyword can control whether primary and secondary indexes are also started.

The GLOBAL keyword can be used to have the database started across multiple IMS subsystems in a data sharing environment.

The ACCESS keyword can be used to override the default access value a database is assigned when it is started.

**Note:**

1. If the IMSDBREFRESH command includes keywords, AUTO-START-SOURCE-DB(Y) and AUTO-START-TARGET-DB(Y) and the source and target databases are in the same LPAR or in a datasharing environment with the GLOBAL keyword specified, then the IMSDBSTART command is not necessary.

2. If the IMSDBREFRESH command is used with the PRECOPY keyword, and AUTO-START-SOURCE-DB(Y) is specified, then the IMSDBSTART command is not necessary.

3. If the IMSDBREFRESH command is used with the POSTCOPY keyword, and AUTO-START-TARGET-DB(Y) is specified, if the target is in a different LPAR than the source, the job can be run on the target IMS unless in a datasharing environment with the GLOBAL keyword specified. In this case, the IMSDBSTART command is not necessary.

4. The IMSDBSTART command must run on the same z/OS image where the IMS subsystem is active.

**IMSDBSTART Command Syntax**

**IMSDBSTART**

**Required Keywords:**

- **IMS-SSID**(ims ssid)
- **DBD**(dbdname1, dbdname2, dbdname3)

**Optional Keywords:**

- **ACCESS**(cc)
- **GLOBAL**
- **INDEXES**(Y|N|P)
- **SIMULATE**

**IMSDBSTART Command & Keyword Definitions**

**IMSDBSTART**

Optional command to start a database on an IMS subsystem.

- Required: No
- Restrictions: None

**IMS-SSID**(ims ssid)

Required keyword that indicates on which IMS subsystem the database(s) are to be started.
DBD(dbdbname1,dbdbname2,dbdbname3)
Required keyword that specifies up to 256 databases to be started on an
IMS subsystem.
• Default: None
• Required: Yes
• Restrictions: None

ACCESS(cc)
Optional keyword that indicates the ACCESS mode the database is to be
started with. This keyword is not valid if the GLOBAL keyword is
specified. The valid values are RO, RD, UP, or EX as described in the IMS
Command Reference.
• Default: None
• Required: No
• Restrictions: Use of this keyword is not valid if the GLOBAL keyword is
specified.

GLOBAL
Optional keyword that specifies that the /START DB command will be
issued with the GLOBAL parameter. The GLOBAL keyword is not valid if
the ACCESS keyword is specified.
• Default: None
• Required: No
• Restrictions: GLOBAL is not valid if the ACCESS keyword is specified

INDEXES(Y | N | P)
Optional keyword that indicates whether any related indexes should be
started as well. N indicates that only the specified DBDs will be started. Y
indicates that any related primary or secondary indexes will also be
started. P indicates that the primary index, if one exists, will also be started
but any related secondary indexes will not be started. The default is Y.
• Default: Y
• Required: No
• Restrictions: None

SIMULATE
Optional keyword that specifies that the actual IMSDBSTART command is
formatted and validated, but not actually issued.
• Default: None
• Required: No
• Restrictions: None

**IMSDBSTART Step JCL Example**

For completeness and to illustrate where JCL parameters and IMS Cloning Tool
control statements must match, the following JCL includes sample IMS Cloning
Tool control statements.
The IMSDBSTART step JCL is shown in the following example. The numbers preceding the JCL correspond to notes, (following this sample JCL) containing an explanation of the line of JCL.

```jcl
//?????? JOB ,'GCL DB START',CLASS=A,MSGCLASS=X
1 //S1 EXEC PGM=GCL00010,REGION=8M
2 //STEPLIB DD DSN=HLQ?.SGCLLOAD,DISP=SHR
3 //GCLINI DD DSN=HLQ?.SGCLPARM(GCLINI),DISP=SHR
4 //GCLPRINT DD SYSOUT=*
5 //SYSUDUMP DD SYSOUT=*
6 //ssidACB DD DSN=ims.ACBLIB,DISP=SHR
7 //ssidMDA DD DSN=ims.MDALIB,DISP=SHR
8 //ssidREC1 DD DSN=ims.RECON1,DISP=SHR
9 //ssidREC2 DD DSN=ims.RECON2,DISP=SHR
10 //ssidREC3 DD DSN=ims.RECON3,DISP=SHR
11 //GCLIN DD *
   IMSDBSTART
   IMS-SSID(IMS1)
   DBD(dbdname1,dbdname2)
```

1. Execution of IMS Cloning Tool main program.
2. IMS Cloning Tool SGCLLOAD library must be authorized.
3. DD for GCLINI, member of the SGCLPARM library. The GCLINI member of the SGCLPARM library provides variables to the IMS Cloning Tool programs. The GCLINI member also contains the product security license codes.
4. DD for GCLPRINT output.
5. Required DD that specifies the IMS ACBLIB data sets that contain the DMB control blocks for the databases to be started. The ddname is prefixed with the IMS SSID followed by ‘ACB’.
6. Required DD that specifies the IMS MDALIB data sets that contain the MDA members for the databases to be started. The ddname is prefixed with the IMS SSID followed by ‘MDA’.
7. Required DD that specifies the IMS RECON1 data set. The ddname is prefixed with the IMS SSID followed by ‘RECI’.
8. Required DD that specifies the IMS RECON2 data set. The ddname is prefixed with the IMS SSID followed by ‘REC2’.
9. Required DD that specifies the IMS RECON3 data set. The ddname is prefixed with the IMS SSID followed by ‘REC3’.
10. IMS-SSID parameter specifying the IMS ssid, IMS1, of the IMS subsystem where the database(s) is to be started.
11. DBD parameter that lists the DBDs to be started.

**IMSDBFRESH**

*This command is not required.* IMSDBFRESH finds data set names from database names, verifies the compatibility of the source and target databases, optionally stops the target databases, by default stops the source databases (unless keywords, FUZZY-COPY or SIMULATE are used), optionally performs the data set copies, and optionally starts the source and target databases after the copies have been performed and the target DBRC has been updated.

If the DATAMOVER(PGM(ADDRDSSU)) keyword is specified, IMSDBFRESH invokes FlashCopy or SnapShot to perform data set copies.

If the DATAMOVER(PGM(NONE)) keyword is specified, IMSDBFRESH keywords, PRECOPY and POSTCOPY should be used to perform all of the same functions specified with the exception of the actual copy. Instead, a list of data sets
The IMSDBREFRESH command performs the following:

1. Gets the database characteristics from the source IMS subsystem defined by the IMS-SSID keyword.
2. Gets a list of database data sets from the source IMS subsystem RECON and MDA members.
3. Gets the database characteristics from the target IMS subsystem defined by the IMS-SSID keyword.
4. Verifies the compatibility between the source and target databases.
5. Issues IMS DBR commands for the source databases unless keywords, FUZZ-COPY or SIMULATE are used.
6. Issues IMS DBR commands for the target databases (if requested).
7. (If PGM=ADRDSSU): Invokes FlashCopy or SnapShot (if available).
8. (If PGM=NONE): Use IMSDBREFRESH command keywords, PRECOPY and POSTCOPY.
9. Issues IMS START DB commands for the source database if previously stopped.
10. Resets recovery information for the target database.
11. Issues IMS START DB commands for the target database.

**IMSDBREFRESH Command Syntax**

**Required Keywords:**

- **IMS-SSID** *(ims ssid)*
- **DBD** *(dbdname1, dbdname2, dbdname3)*

**Required if source and target IMS-SSID are the same:**

- **TGT-DBD** *(dbdname1, dbdname2, dbdname3)*

**Optional Keywords:**

- **ACCESS** *(cc)*
- **ALLOW-PARTIAL** *(N|Y)*
- **ARCHIVE-WAIT** *(xx, RC nn)*
- **AUTO-START-SOURCE-DB** *(Y|N)*
- **AUTO-START-TARGET-DB** *(Y|N)*
- **AUTO-STOP-TARGET-DB** *(Y|N)*
- **COPY-IF-NO-IMS-TARGET-DB** *(N|Y)*
- **DATA-MOVER** *(PGM(ADRDSSU | EMCAPI | NONE)), (FASTREP(PREF|REQ|NONE)), (FCP|OP|PR|CM|PID | PRIMARY (PRESMIRREQ | PRESMIRPREF | PRESMIRNONE ))
- **DATA-MASKING** *(N|Y), (RESTART|RESTART), (LOGICALS)*
- **BRC-ACTION** *(REDEFINE | REORG, ICOFF | NOICOFF)*
- **DDIN** *(ddname1, ddname2, ddname3, ...)*
- **DDOUT** *(ddname1, ddname2, ddname3, ...)*
- **FUZZY-COPY** *(N|Y)*
- **GLOBAL**
- **IMSPLEX** *(xxxx, yyyy)*
- **INDEXES** *(N|P)*
- **LOG-APPLY** *(N|Y)*
- **LOGICALLY-RELATED** *(N|Y)*
- **NOAUTH-TARGETS** *(N|Y)*
IMSDBREFRESH Command & Keyword Definitions

IMSDBREFRESH
If using FlashCopy or SnapShot, use this command to perform analysis, cause a database, or databases, and indexes to be copied from one IMS subsystem to another and perform target updates.

If using Other Copy Methodologies, use the PRECOPY and POSTCOPY keywords in separate jobs to perform analysis, build the list of data sets as input to your copy methodology, and perform target updates.

- Required: No
- Restrictions: None

IMS-SSID(ims ssid)
Required keyword that provides the specification of IMS subsystem name pairing. The first name in the pair reflects the SOURCE IMS subsystem name, the second, the TARGET IMS subsystem name.

- Default: None
- Required: Yes
- Restrictions: None

DBD(dbdbname1,dbdbname2,dbdbname3)
Required keyword that specifies up to 256 database names to be refreshed from the source IMS subsystem to the target IMS subsystem. If the TGT-DBD parameter is omitted, then the target DBD name will be the same as the source DBD name.

- Default: None
- Required: Yes
- Restrictions: None

An asterisk (*) wildcard, can be used in the dbdbname values in following ways:

- as a database name mask to be applied to the database names defined in the source ACB library
- as a character within a database name to exclude that character position from the comparison. For example: ‘DBD(IV*DB1).
- as the last character in the database name mask to select all databases in the ACB library that match the mask specified up to the wildcard character. For example: ‘DBD(IVP*).

TGT-DBD(dbdbname1,dbdbname2,dbdbname3)
Only required if source and target IMS-SSID are the same, this keyword that specifies up to 256 database pairings to be refreshed from the source IMS subsystem to the target IMS subsystem. If the target DBD names are omitted, the source DBD name is used as the target DBD name.

- Default: None
• Required: If source and target IMS-SSID are the same
• Restrictions: None

ACCESS(cc)
Optional keyword that indicates the ACCESS mode the databases are to be
started with. This keyword is not valid if the GLOBAL keyword is
specified.
• Default: None
• Required: No
• Restrictions: Use of this keyword is not valid if the GLOBAL keyword is
specified.

ARCHIVE-WAIT (nnn | 5) [,RC(rr) | 8]
Optional keyword that indicates how long IMS Cloning Tool should wait
for an online log data set to be archived before the IMSDBREFRESH job
should abnormally terminate. This keyword controls the amount of time in
minutes to wait for an online log data set to be archived and also the
return code IMS Cloning Tool should terminate with if the online log was
not archived in the specified time limit.

The wait time is the first parameter and must be a numeric value between
0 and 999. The value specified indicates the number of minutes to wait.
The return code specified must be a numeric value between 0 and 4095.
• Default: 5,RC(8)
• Required: No
• Restrictions: Is only applicable if LOG-APPLY = Y.

ALLOW-PARTIAL(N | Y)
Optional keyword that indicates that IMS Cloning Tool should continue
processing even if an error is encountered with one of the databases (for
example, if one of the databases being refreshed had a compatibility issue).
When Y (yes) is specified, IMS Cloning would still refresh the other
databases.
• Default: N
• Required: No
• Restrictions: None.

AUTO-START-SOURCE-DB(Y | N)
Optional keyword that indicates whether the source databases should be
started after the copy process is complete. The default value is Y.
• Default: Y
• Required: No
• Restrictions: None

AUTO-START-TARGET-DB(Y | N)
Indicates whether to start each target IMS database after the copy process
is complete. The default value is Y.
• Default: Y
• Required: No
• Restrictions: None

AUTO-STOP-TARGET-DB(Y | N)
Indicates whether the database refresh job should stop (DBR) each target
IMS database prior to the copy process starting. If N is specified, IMS
Cloning Tool will assume that it can get exclusive access to the target database data sets. If the database is not stopped, IMS Cloning Tool will get an allocation error. The default value is Y.

- Default: Y
- Required: No
- Restrictions: None

**COPY-IF-NO-IMS-TARGET-DB(N | Y)**

Optional keyword that indicates whether IMS Cloning Tool defines elements for target databases on the target IMS if they do not currently exist. These elements would include DBRC definitions, MDA members, and ACB members, and a `CREATE DB` command will be submitted to define the database to the target IMS system. The process to perform the `CREATE DB` command requires the CSL and the target IMS system to be active.

If `COPY-IF-NO-IMS-TARGET-DB = N` and elements for the target database are not found, IMS Cloning Tool does not refresh the database. If `COPY-IF-NO-IMS-TARGET-DB = Y`, the `RENAME-MASKS` keyword is required to determine the target data set names. The `RENAME-MASKS` keyword is also required to determine the target DBD and DD names if the target database is in the same IMS system as the source database.

- Default: No
- Required: No
- Restrictions: If YES is specified, `RENAME-MASKS` must also be specified. For IMS V10 systems or later, if `IMSPLEX` is specified, then databases can be created using the `CREATE DB` command on the target IMS. If `IMSPLEX` is not specified, then the `CREATE DB` command will be skipped.

**DATA-MASKING(N | Y, RESTART | RERUN)**

Optional keyword that indicates whether IMS Cloning Tool will apply data masking during the refresh, leaving the data in the source object in its original state, but modifying it before it is moved to the target object. Any changes made to the data are determined by user-specified masking rules applied during the copy. For more information on data masking with IMS Cloning Tool, see Chapter 6, "Masking data while refreshing databases," on page 151.

If N (No) is specified, IMS Cloning Tool will not perform data masking.

If Y (Yes) is specified, IMS Cloning Tool will perform data masking, and the following additional parameter can also be specified:

- **RESTART** or **RERUN**: An IMSDBREFRESH job that is masking some data may be restartable if a JOURNAL DD is included in the original IMSDBREFRESH job. If the IMSDBREFRESH fails, then `DATA-MASKING(Y,RESTART)` can be specified to restart the IMSDBREFRESH from the previous point of failure. If the IMSDBREFRESH job fails and you want to start the database refresh job from the beginning, specify `DATA-MASKING(Y,RERUN)`. If Y (Yes) is specified, IMS Cloning Tool will perform data masking, and the following additional keywords can also be specified:

If Y (Yes) is specified, IMS Cloning Tool will perform data masking, and the following additional parameters can also be specified:
• UNLOAD-FROM(TEMP | SOURCE): Indicates whether to unload from
the original source database or to create a temporary copy of the source
database. The default is TEMP.

• TEMP-DB-HLQ(USERID | xxxxx): Up to 26 byte high level qualifier to
use to allocate the temporary database data sets used during the
IMSDBREFRESH job. This keyword is only applicable if
UNLOAD-FROM(TEMP) is specified. When USERID (the default) is
specified, the user ID associated with the job performing the
IMSDBREFRESH process is used. IMS Cloning Tool appends ‘database
name.ddname’ to this value to create the data set name for the
temporary database data sets.

IMS Cloning Tool creates a temporary unload file for each source database
as part of the masking process. The following parameters are used to
specify the allocation parameters to use when allocating the temporary unload file:

• TEMP-UNLOAD-HLQ(USERID | xxxxx): Specifies the high-level qualifier
to use to allocate the temporary unload file to create during the
IMSDBREFRESH job. This value can be up to 33 bytes. When
USERID, the default, is specified, the user ID associated with the job
performing the IMSDBREFRESH process is used. IMS Cloning Tool
appends ‘database name.T’ to this value to create the data set name for
the temporary unload file.

• TEMP-UNLOAD-UNIT(xxxxxxxx) - Specifies the UNIT to use when
allocating the temporary unload file. There is no default.

• TEMP-UNLOAD-VOLUME(xxxxxxxx) - Specifies the volume serial to
use when allocating the temporary unload file. There is no default.

• TEMP-UNLOAD-STORCLAS(xxxxxxxx) - Specifies the SMS Storage
Class to use when allocating the temporary unload file. There is no
default.

• TEMP-UNLOAD-DATACLAS(xxxxxxxx) - Specifies the SMS Data Class
to use when allocating the temporary unload file. There is no
default.

• TEMP-UNLOAD-MGMTCLAS(xxxxxxxx) - Specifies the SMS
Management Class to use when allocating the temporary unload file.
There is no default.

 IMS Cloning Tool creates a permanent unload file for each source database
as part of the masking process. The following parameters are used to
specify the allocation parameters to use when allocating the permanent unload file.

• PERM-UNLOAD-HLQ(USERID | xxxxx) - Specifies the high-level
qualifier to use to allocate the permanent unload file to create from the
IMSDBREFRESH job. This value can be up to 33 bytes. When
USERID, the default, is specified, the user ID associated with the job
performing the IMSDBREFRESH process is used. IMS Cloning Tool
appends ‘database name.P’ to this value to create the data set name for
the permanent unload file.

• PERM-UNLOAD-UNIT(xxxxxxxx) - Specifies the UNIT to use when
allocating permanent unload file. There is no default.

• PERM-UNLOAD-VOLUME(xxxxxxxx) - Specifies the volume serial to
use when allocating permanent unload file. There is no default.

• PERM-UNLOAD-STORCLAS(xxxxxxxx) - Specifies the SMS Storage
Class to use when allocating permanent unload file. There is no default.
• PERM-UNLOAD-DATACLAS(xxxxxxxx) - Specifies the SMS Data Class to use when allocating permanent unload file. There is no default.
• PERM-UNLOAD-MGMTCLAS(xxxxxxxx) - Specifies the SMS Management Class to use when allocating permanent unload file. There is no default.
  • Default: No
  • Required: No
  • Restrictions:

DATA-MOVER (PGM(ADRDSSU|EMCAPI|NONE),
(FASTREP(PREF|REQ|NONE)), FCTOPPRCPRIMARY (PRESMIRREQ | PRESMIRPREF | PRESMIRNONE )

Optional keyword that specifies the program to be used to initiate copies and copy options.

PGM(ADRDSSU) - (the default) specifies that IMSDBREFRESH command is to initiate FlashCopy or SnapShot ‘under the covers’ via execution of DSS.

PGM(EMCAPI) - species that IMS Cloning Tool Database Refresh is to invoke EMC TimeFinder/Clone to make the copies using the data set snap facility. When IMS Cloning Tool initiates EMC copies using the EMCAPI, most GLOBAL command parameter values use the default EMC value. The following table lists the GLOBAL parameters and the associated default setting used by IMS Cloning Tool for database refreshing.

Table 34. GLOBAL parameter defaults setting by IMS Cloning Tool

<table>
<thead>
<tr>
<th>GLOBAL parameter</th>
<th>IMS Cloning Tool Database Refresh setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>WAIT</td>
<td>NO</td>
</tr>
<tr>
<td>WAITFORCOMPLETION</td>
<td>NO</td>
</tr>
<tr>
<td>NOTIFY LEVEL</td>
<td>DATASET</td>
</tr>
<tr>
<td>REUSEALLOCATION</td>
<td>YES</td>
</tr>
<tr>
<td>TOLERATEALLOCATIONFAILURE</td>
<td>YES</td>
</tr>
<tr>
<td>TOLERATECOPYFAILURE</td>
<td>YES</td>
</tr>
<tr>
<td>TOLERATEREUSEFAILURE</td>
<td>YES</td>
</tr>
<tr>
<td>VERIFY</td>
<td>NO</td>
</tr>
<tr>
<td>VSAMENQMODE</td>
<td>NONE</td>
</tr>
</tbody>
</table>

The following table lists the GLOBAL values that are set during processing using the IMS Cloning Tool Database Refresh parameters.

Table 35. GLOBAL values set during processing by IMS Cloning Tool Database Refresh

<table>
<thead>
<tr>
<th>EMC GLOBAL value</th>
<th>IMS Cloning Tool Database Refresh setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOSTCOPYMODE</td>
<td>If FUZZY-COPY(N), this parameter value is set to EXCLUSIVE. Otherwise, it is set to SHARED</td>
</tr>
<tr>
<td>MAXRC</td>
<td>This parameter always uses the IMS Cloning Tool Database Refresh MAX-COPY-RC value.</td>
</tr>
<tr>
<td>REPLACE</td>
<td>This parameter is set to YES if REPLACE-TARGET-DS(Y). Otherwise, it is set to NO.</td>
</tr>
<tr>
<td>TOLERATEENQFAILURE</td>
<td>If FUZZY-COPY(N), this parameter is set to NO. Otherwise, it is set to YES.</td>
</tr>
</tbody>
</table>
**Table 35. GLOBAL values set during processing by IMS Cloning Tool Database Refresh (continued)**

<table>
<thead>
<tr>
<th>EMC GLOBAL value</th>
<th>IMS Cloning Tool Database Refresh setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>TYRUN</td>
<td>If SIMULATE is specified this value is set to NORUN. Otherwise, it is set to RUN.</td>
</tr>
<tr>
<td>ENQWAIT</td>
<td>If FUZZY-COPY(N), this parameter is set to YES. Otherwise, it is set to NO.</td>
</tr>
</tbody>
</table>

**PGM (NONE)** - specifies that no DATA-MOVER is to be invoked by the IMSDBREFRESH command. NONE infers that data set copies will be initiated by the user. When NONE is specified, IMSDBREFRESH still validates necessary IMS database characteristics, stops the source databases if requested, and builds the list of data sets as input to the user copy.

**FASTREP** (DSS parameter) - indicates whether fast replication is preferred (PREF), required (REQ), or not required (NONE). PREF is the default.

IMS Cloning Tool will set up the source/target pairs for a fast replication if PREF or REQ is specified. IMS Cloning Tool will allow a ‘normal’ copy if NONE is specified. If the level of ADRDSSU indicates it supports this keyword, the keyword will be passed to ADRDSSU.

**FCTOPPRCPRIMARY** (DSS parameter) - Indicates that a FlashCopy target volume can also be a PPRC primary volume. This applies to ESS devices only. This does not apply when FASTREP(NONE) is also specified. IBM Remote Pair FlashCopy (also known as Preserve Mirror) can be specified by including one of the optional keywords. Preserve Mirror mirrors the FlashCopy command that is issued at the local site to the remote site. This allows FlashCopy operations to occur to PPRC primary volumes without affecting the PPRC duplex state. IBM Remote Pair FlashCopy must be installed in the storage controller along with the corresponding software support in z/OS. In addition, both the source and target volumes being PPRC primary volumes and in the same storage controller and their corresponding PPRC secondary volumes being in the same storage controller. Specify one of the following to use this functionality:

- **PRESMIRRREQ**: Require the use of Preserve Mirror. If a Preserve Mirror operation cannot be accomplished, the FlashCopy operation will not be completed.
- **PRESMIRRREF** PREFER the use of Preserve Mirror. If a Preserve Mirror operation cannot be accomplished, the FlashCopy operation is still performed.
- **PRESMIRRNONE**: Do not use Preserve Mirror.

When any of these options is specified, they will be used as part of the source to target volume pairing criteria. The specified option will also be passed to ADRDSSU as part of the generated copy commands. When FCTOPPRCPRIMARY is not specified or if the capability is not supported by the ESS, a PPRC primary volume is not eligible to become a FlashCopy target volume. For additional information about Preserve Mirror, refer to the documentation for your version of z/OS.

**Note:** Do not specify the FCTOPPRCPRIMARY keyword with the FASTREP (NONE) keyword.

- Default: None
- Required: No
• Restrictions: None

**DBRC-ACTION(REDEFINE, REORG, ICOFF|NOICOFF)**

Optional keyword that indicates the DBRC action to perform for the target databases after they are refreshed. If DBRC-ACTION(REORG) is specified, IMS Cloning Tool does a NOTIFY.REORG for all database data sets that were refreshed. If DBRC-ACTION(REDEFINE) is specified, IMS Cloning Tool does a LIST.DB to provide a reference for current DBRC definitions, followed by a DELETE.DB, INIT.DB, and any INIT.DBDS, INIT.PART, and INIT.AREA commands to redefine the target database.

ICOFF or NOICOFF is an optional parameter if REORG is the value for the first operand. ICOFF indicates that after doing the NOTIFY.REORG, IMS Cloning Tool turns off the image copy needed setting in DBRC so that the database can be accessed without taking an image copy first. NOICOFF indicates that IMS Cloning Tool does not reset the image copy needed flag in DBRC and an image copy of the database data set will need to be done. ICOFF is the default value if DBRC-ACTION(REORG) is specified.

• Default: REDEFINE
• Required: No
• Restrictions: If the database being refreshed is a HALDB, and the partition numbers are different between the source and the target databases, then REDEFINE will always be done for those databases.

**DDIN(ddname1,ddname2,ddname3,...)**

Optional keyword that specifies input DDnames to ADRDSSU to locate the volsers for non-SMS managed data sets.

• Default: None
• Required: No
• Restrictions: None

**DDOUT(ddname1,ddname2,ddname3,...)**

Optional keyword that specifies output DDnames to ADRDSSU to locate the volsers for non-SMS managed data sets.

• Default: None
• Required: No
• Restrictions: None

**FUZZY-COPY(Y|N)**

Optional keyword that indicates whether the source databases should be stopped prior to replicating them. If used with DATA-MOVER(PGM(ADRDSSU)) it indicates that ADRDSSU should be invoked with TOLERATE(ENQFAILURE). If used with DATA-MOVER(PGM(NONE)) and the PRECOPY keyword, the source database is not stopped. The default value is N.

• Default: N
• Required: No
• Restrictions: None

**GLOBAL**

Optional keyword that specifies that the /DBR DB and /START DB commands will be issued with the GLOBAL parameter. The GLOBAL keyword is not valid if the ACCESS keyword is specified.

• Default: None
• Required: No
• Restrictions: GLOBAL is not valid if the ACCESS keyword is specified

IMSLEX(\texttt{xxxxx,yyyyy})
Optional keyword that indicates the IMSLEX name for the source and target IMS CSL components. The first parameter specified indicates the IMSLEX name for the source IMS system and the second parameter specified indicates the IMSLEX name for the target IMS system. The IMSLEX name is used to issue IMS Type-2 commands such as the UPDATE DB QUIESCE.
- Default: None
- Required: No
- Restrictions: Required if STOP-COMMAND(QUIESCE) is specified

INDEXESE(\texttt{Y|N|P})
Optional keyword which indicates whether or not any related indexes should be copied as well. N indicates that only the specified DBDs will be copied. Y indicates that any related primary or secondary indexes will also be started. P indicates that the primary index, if one exists, will also be copied but any related secondary indexes will not be copied. The default value is Y.
- Default: Y
- Required: No
- Restrictions: None

LOG-APPLY(\texttt{N|Y})
Optional keyword that indicates if IMS Cloning Tool should apply log updates from the source databases to the target databases after copying the source databases.

If LOG-APPLY = N IMS Cloning Tool does not apply any logs to target data set after the data set has been copied. If LOG-APPLY = Y is specified, after the target data sets have been copied IMS Cloning Tool reads the archive logs from the source IMS system for the source databases and applies them to the target data sets until all of the databases that were refreshed in the IMSDBREFRESH job step do not have any uncommitted updates. This leaves all of the target databases in a transactionally consistent state.

If log updates were applied to a primary target database, any indexes for the target database that are non-recoverable will be flagged as recovery-needed in DBRC. These indexes must be rebuilt in order to bring them in sync with the primary database.

If LOG-APPLY = Y is specified all primary source databases must be marked as recoverable in DBRC.
- Default: No
- Required: No
- Restrictions: Is only applicable if FUZZY-COPY = Y.

LOGICALLY-RELATED(\texttt{Y|N})
Optional keyword that indicates whether a database should be copied if not all logically related databases are copied in the same command. If LOGICALLY-RELATED(Y) is specified, IMS Cloning Tool only copies a database if all logically related databases are also being copied in the same IMS Cloning Tool command. If LOGICALLY-RELATED(N) is specified, IMS
Cloning Tool copies the databases specified even if not all logically related databases may be copied. The default value is Y.

- Default: Y
- Required: No
- Restrictions: None

**NOAUTH-TARGETS(N | Y)**

Optional keyword that indicates that IMS Cloning Tool will set PROHIBIT AUTH=ON in the target RECONS for the target databases prior to starting the data set copy process. This will prevent other IMS jobs from authorizing the target databases until the database refresh process has completed. If IMS Cloning Tool sets PROHIBIT AUTH=ON, the flag will be reset after the data set copy process is complete. Valid values include Y (prevent IMS jobs from authorizing the target databases until the database refresh process is complete), and N (do not set PROHIBIT AUTH=ON).

**Note:** The NOAUTH-TARGETS value from the IMSDBREFRESH command overrides this value from the GCLINI member in the SGCLPARM library.

- Default: N
- Required: No
- Restrictions: None

**NOFEOV**

Optional keyword that specifies that when stopping databases, the /DBR DB command will be issued with the NOFEOV parameter.

- Default: None
- Required: No
- Restrictions: None

**PRECOPY**

Optional keyword that indicates IMS Cloning Tool is to perform pre-copy operations only which includes everything except for the actual copy of the data sets. This keyword is used when IMS Cloning Tool will not be used to perform the copy process.

- Default: None
- Required: No
- Restrictions: None

**POSTCOPY**

Optional keyword that indicates IMS Cloning Tool is to perform post copy operations only such as start the source database, update the target IMS DBRC, and start the target database. This keyword is used when IMS Cloning Tool was not used to perform the copy process.

- Default: None
- Required: No
- Restrictions: None

**RENAME-MASKS(mask value1, mask value2,...,mask value x)**

Optional keyword that specifies the source to target masks to apply when defining new database elements for a target database. RENAME-MASKS are specified in oldname and newname pairs. RENAME-MASKS are
processed in order and can be applied to DBD names, DD names, and data set names when defining elements for target databases if they do not exit on the target IMS system.

RENAME-MASKS are processed in order. The first hit of the source DBD, DD or data set name is the one that is used for the target DBD, DD, or data set name.

**Note:** Whether changing a qualifier to a longer new name qualifier, or using the + feature to add qualifiers, be careful that new names do not exceed 44 characters. Additionally, ensure that rename masks cannot cause two or more old names to rename to the same new name. For more information, see “Rename Considerations” on page 235.

- Default: None
- Required: No
- Restrictions: Required if COPY-IF-NO-IMS-TARGET-DB(Y) is specified

Oldname syntax:

Use the old name filter mask to select the DBD, DD, or data sets to apply the IMSDBREFRESH new name mask against. The following table lists the allowable filter characters and a description for each character.

<table>
<thead>
<tr>
<th>Character</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>*</td>
<td>A single asterisk represents exactly one DSN qualifier of any value. For example: *. or <em>. or .</em> * combined with valid DSN characters or % means 0 to nn characters of any value.</td>
</tr>
<tr>
<td>**</td>
<td>A double asterisk represents 0 to nn DSN qualifiers of any value. For example: <strong>. or <strong>. or ** ** cannot appear with any other characters within a qualifier. Three or more adjacent * are not allowed within a qualifier. ** can be used more than once in an 'old name' mask. Example: <strong>.abcd.</strong> or abc.</strong>.defg.</strong></td>
</tr>
<tr>
<td>%</td>
<td>A percent sign represents one non-blank character.</td>
</tr>
<tr>
<td>!</td>
<td>An exclamation point represents one national character. @ # $</td>
</tr>
<tr>
<td>&lt;</td>
<td>A less-than sign represents one non-numeric character, national symbols included.</td>
</tr>
<tr>
<td>&gt;</td>
<td>A greater-than sign represents one numeric character.</td>
</tr>
</tbody>
</table>

For example, Filter = **.PAYROLL*.%%%%%23*.DATA would match DSN = TLQ050.PAYROLL.CYCLE23.DATA

Newname syntax:

Use the new name mask to rename the data sets selected by the old name filter mask. The following table lists the allowable filter characters and a description for each character.

<table>
<thead>
<tr>
<th>Character</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>*</td>
<td>A single asterisk represents exactly one DSN qualifier. * may not be used for a partial qualifier in a ‘new name’ mask. Example: aaa.<em>bb.</em>* would not be valid.</td>
</tr>
</tbody>
</table>
### Table 37. Filter characters allowed for new name filter masks: (continued)

<table>
<thead>
<tr>
<th>Character</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>**</td>
<td>A double asterisk represents 0 to nn DSN qualifiers. ** cannot appear with any other characters within a qualifier. Three or more adjacent * are not allowed within a qualifier. ** may only be used once in a 'new name' mask. Example: <strong>.abcd.</strong> would not be valid.</td>
</tr>
<tr>
<td>%</td>
<td>A percent sign represents one non-blank character.</td>
</tr>
<tr>
<td>!</td>
<td>An exclamation point represents one national character. @ # $</td>
</tr>
<tr>
<td>+cccccc</td>
<td>A plus sign followed by 1 to 8 characters means 'insert this new qualifier'.</td>
</tr>
<tr>
<td>-</td>
<td>A minus sign means 'remove this qualifier from the new name'.</td>
</tr>
</tbody>
</table>

**REPLACE-TARGET-DS(Y|N)**
Optional keyword that indicates whether or not the target data sets should be overwritten if they exist. If the target data sets do exist, and REPLACE-TARGET-DS(N) is specified, then the copy will fail. The default value is Y.
- Default: Y
- Required: No
- Restrictions: None

**SIMULATE**
Optional keyword that specifies that the actual IMSDBREFRESH command is formatted and the databases are validated, but no stopping of databases and no copying of data sets will actually occur.
- Default: None
- Required: No
- Restrictions: None

**STOP-COMMAND (DBR|DBD|QUIESCE)**
Optional keyword that indicates the IMS command to be used to stop the source databases. When DBR is specified, the DBRECOVER command is used, and all access to the source databases will be stopped. When DBD is specified, the DBDUMP command will be issued and the full function source databases will be put into read-only mode, and a DBRECOVER command will be issued for DEDBs. When QUIESCE is specified, an UPDATE DB QUIESCE command will be used and IMS will only pause access to the source databases for the duration of the copy.
- Default: DBR
- Required: No
- Restrictions: The IMSPLEX keyword must also be specified if QUIESCE is specified.

**SWITCH-OLDS(Y|N)**
Optional keyword that indicates if IMS Cloning Tool issues a /SWI OLDS command to the source IMS system after refreshing the target data sets and before doing log apply updating.

If SWITCH-OLDS = N is specified, IMS Cloning Tool issues a /SWI OLDS command prior to reading the archive log data sets in order to read and apply log updates to the target databases. If SWITCH-OLDS = Y is specified, IMS Cloning Tool issues a /SWI OLDS command to the source IMS system prior to reading the archive log data sets.
• Default: Yes
• Required: No
• Restrictions: Is only applicable if LOG-APPLY = Y.

VERIFY-NO-UPDATERS(N | Y [,RC(rr)])
This optional keyword specifies whether the IMSDBREFRESH command should verify that the source database does not have any updaters prior to refreshing the databases. If any of the databases are currently authorized by an IMS subsystem or batch job for update, IMSDBREFRESH will terminate with a return code of rr. This check is only done when IMSDBREFRESH will be doing a fuzzy copy of the source databases. The default action is to not check for updaters. The default return code is 8.
• Default: N,RC(8)
• Required: No
• Restrictions: This keyword is only applicable if FUZZY-COPY(Y) is specified.

WAIT(nnn | 5) [,RC(rr) | 8]
Optional keyword that specifies the number of minutes (nnn) the IMSDBREFRESH command should wait to get exclusive access to the database data sets – waiting for databases to be stopped. If the specified time limit expires before the database(s) has been stopped, IMSDBREFRESH will terminate with a return code of rr. The default wait time is 5 minutes. The default return code is 8.
• Default: 8
• Required: No
• Restrictions: None

IMSDBREFRESH Step JCL Example

For completeness and to illustrate where JCL parameters and IMS Cloning Tool control statements must match, the following JCL includes sample IMS Cloning Tool control statements.

The IMSDBREFRESH step JCL is shown in the following example. The numbers preceding the JCL correspond to notes, (following this sample JCL) containing an explanation of the line of JCL.

//??????? JOB ,’GCL DB COPY’,CLASS=A,MSGCLASS=X
1 //S1 EXEC PGM=GCL00010,REGION=8M
2 //STEP1 LIB DD DSN=HLQ?.SGCLLOAD,DISP=SHR
3 //GCLI INI DD DSN=HLQ?.SGCLLOAD(GCLI INI),DISP=SHR
4 //GCLPRINT DD SYSOUT=*
//SYSUDUMP DD SYSOUT=*  
5 //ssidsACB DD DSN=msa.ACBLIB,DISP=SHR
6 //ssidsMDA DD DSN=msa.MDALIB,DISP=SHR
7 //ssidsREC1 DD DSN=msa.RECON1,DISP=SHR
8 //ssidsREC2 DD DSN=msa.RECON2,DISP=SHR
9 //ssidsREC3 DD DSN=msa.RECON3,DISP=SHR
10 //ssidtACB DD DSN=msb.ACBLIB,DISP=SHR
11 //ssidtMDA DD DSN=msb.MDALIB,DISP=SHR
12 //ssidtREC1 DD DSN=msb.RECON1,DISP=SHR
13 //ssidtREC2 DD DSN=msb.RECON2,DISP=SHR
14 //ssidtREC3 DD DSN=msb.RECON3,DISP=SHR
15 //IMS DD DSN=msb.DBLLIB,DISP=SHR
16 //JOURNAL DD DISP=SHR,DSN=HLQ?.DBCLEAN.JRNL
//GCLIN DD *
IMSDBFRESH
17  IMS-SSID(imsa,imsb)  -
18  DBD(dbdbname1,dbdbname2)  -
19  DATA-MOVER(PGM(ADRDSSU))

1. Execution of IMS Cloning Tool main program.
2. IMS Cloning Tool SGCLLOAD library must be authorized.
3. DD for GCLINI, member of the SGCLPARM library. The GCLINI member of
   the SGCLPARM library provides variables to the IMS Cloning Tool programs.
   The GCLINI member also contains the product security license codes.
4. DD for GCLPRINT output.
5. Required DD that specifies the source IMS ACBLIB data sets that contain the
   DMB control blocks for the databases to be cloned. The ddname is prefixed
   with the source IMS SSID followed by ‘ACB’.
6. Required DD that specifies the source IMS MDALIB data sets that contain the
   MDA members for the databases to be cloned. The ddname is prefixed
   with the source IMS SSID followed by ‘MDA’.
7. Required DD that specifies the source IMS RECON1 data set. The ddname is
   prefixed with the source IMS SSID followed by ‘REC1’.
8. Required DD that specifies the source IMS RECON2 data set. The ddname is
   prefixed with the source IMS SSID followed by ‘REC2’.
9. Required DD that specifies the source IMS RECON3 data set. The ddname is
   prefixed with the source IMS SSID followed by ‘REC3’.
10. Required DD that specifies the target IMS ACBLIB data sets that contain the
    DMB control blocks for the databases to be cloned. The ddname is prefixed
    with the target IMS SSID followed by ‘ACB’. This DD maybe omitted if the
    databases are being cloned within the same IMS subsystem.
11. Required DD that specifies the target IMS MDALIB data sets that contain the
    MDA members for the databases to be cloned. The ddname is prefixed
    with the target IMS SSID followed by ‘MDA’. This DD maybe omitted if the
    databases are being cloned within the same IMS subsystem.
12. Required DD that specifies the target IMS RECON1 data set. The ddname is
    prefixed with the target IMS SSID followed by ‘REC1’. This DD maybe
    omitted if the databases are being cloned within the same IMS subsystem.
13. Required DD that specifies the target IMS RECON2 data set. The ddname is
    prefixed with the target IMS SSID followed by ‘REC2’. This DD maybe
    omitted if the databases are being cloned within the same IMS subsystem.
14. Required DD that specifies the target IMS RECON3 data set. The ddname is
    prefixed with the target IMS SSID followed by ‘REC3’. This DD maybe
    omitted if the databases are being cloned within the same IMS subsystem.
15. Required DD that specifies the target IMS DBDLIB data set. This DD is
    required to invoke DBRC to update the information on the target IMS
    subsystem.
16. Optional DD that specifies a JOURNAL data set where IMS Cloning Tool will
    record the target data sets that were successfully refreshed. This data set can
    then be used as input to the IMSDBCLEAN command in order to delete the
    target data sets after they are no longer needed.
17. IMS-SSID parameter specifying the source and target IMS subsystem names. If
    the database(s) are to be cloned within the same IMS subsystem, then only
    one IMS SSID needs to be specified.
18. DBD parameter that lists the DBDs to be cloned.
19. DATA-MOVER parameter that indicates DFSMSdss will be invoked to do the data set replications.

**IMSDBCLEAN**

_This command is not required._ IMSDBCLEAN can be used to delete target data sets that were previously refreshed with the IMSDBREFRESH command. This can be done after the target data sets are no longer needed in order to free up disk space.

The JOBNAME keyword can be used to limit the target data sets that are deleted to just those that were refreshed by a specific jobname.

The TGT-SSID keyword can be used to limit the target data sets that are deleted to just those that belong to a specific target IMS SSID.

The BUILDJCL-ONLY keyword can be used to have the IDCAMS control statements to delete the target data sets created in data set specified in the IDCOUT DD.

After selecting and processing the target data sets from the JOURNAL file, information about the target data sets will be deleted from the JOURNAL file unless SIMULATE is specified.

**IMSDBCLEAN Command Syntax**

```
IMSDBCLEAN
```

- **Required Keywords:**
  
  - TGT-SSID(ssid)

- **Optional Keywords:**
  
  - JOBNAME(jobname)
  - BUILDJCL-ONLY(N | Y)
  - DATA-MASKING(N | Y)
  - SIMULATE

**IMSDBCLEAN Command & Keyword Definitions**

**IMSDBCLEAN**

Optional command to delete target database data sets from previous IMSDBREFRESH executions.

- Required: No
- Restrictions: None

**TGT-SSID(ims ssid)**

Required keyword that indicates on which IMS subsystem the target database(s) are to be deleted. Any database data set recorded in the JOURNAL data set that were refreshed by prior IMSDBREFRESH commands will be deleted. The JOBNAME keyword must be used to further limit the database data sets to be deleted.

- Default: None
- Required: Yes
- Restrictions: None

**JOBNAME(jobname)**

Optional keyword used to restrict the data sets to be deleted to just those database data sets that were refreshed by the jobname specified.

- Required: No
- Restrictions: None

---

288 User's Guide
JOBNAME is not specified, then all data sets recorded in the JOURNAL data set for the target IMS ssid will be deleted.

- Default: None
- Required: No
- Restrictions: None

**BUILDJCL-ONLY( N | Y )**

Optional keyword used to indicate whether to build the JCL to invoke IDCAMS to delete the target database data sets, or to delete the target database data set. If BUILDJCL-ONLY(N) is specified IMSDBCLEAN will delete the target database data sets. If BUILDJCL-ONLY(Y) is specified, IMSDBCLEAN will not delete the target database data sets.

- Default: N
- Required: No
- Restrictions: BUILDJCL-ONLY(Y) requires the IDCOUT DD to be specified in the JCL that invokes IMSDBCLEAN.

**DATA-MASKING( N | Y )**

Optional keyword used to indicate whether data set cleanup should be performed on databases that also have an active journal entry associated with an IMSDBREFRESH job that performed data masking.

The DATA-MASKING keyword on the IMSDBCLEAN command specifies whether IMSDBCLEAN deletes any data sets associated with a prior IMSDBREFRESH that performed data masking (when IMSDBREFRESH is executed with DATA-MASKING(Y), data masking journal entries are created so that the job can be restarted if an error occurs).

If IMSDBCLEAN DATA-MASKING(N) is specified, and IMSDBCLEAN attempts to delete any data sets that are associated with data masking, the deletion will fail. If IMSDBCLEAN DATA-MASKING(Y) is specified, IMSDBCLEAN can delete any data sets that are associated with data masking. The default is N.

- Default: No
- Required: No
- Restrictions: None

**SIMULATE**

Optional keyword that specifies that the actual IMSDBCLEAN command should not delete the target data sets but only validate that the JCL and keywords are correct and to list what data sets would be deleted if the command were executed without SIMULATE specified.

- Default: None
- Required: No
- Restrictions: None

**IMSDBCLEAN Step JCL Example**

For completeness and to illustrate where JCL parameters and IMS Cloning Tool control statements must match, the following JCL includes sample IMS Cloning Tool control statements.

The IMSDBCLEAN step JCL is shown in the following example. The numbers preceding the JCL correspond to notes, (following this sample JCL) containing an explanation of the line of JCL.
//??????? JOB ,'GCL DB CLEAN',CLASS=A,MSGCLASS=X
1 //S1 EXEC PGM=GCL00010,REGION=8M
2 //STEPLIB DD DSN=HLQ?.SGCLLOAD,DISP=SHR
3 //GCLINI DD DSN=HLQ?.SGCLPARM(GCLINI),DISP=SHR
4 //GCLPRINT DD SYSOUT=*  
5 //JOURNAL DD DSN=HLQ?.JOURNAL,DISP=SHR
6 //IDCOUT DD DSN=user.IDCOUT(IDCAMS),DISP=SHR
7 //GCLIN DD *
   IMSDBCLEAN -
   TGT-SSID(ssid) -
   JOBNAME(jobname)
 /*

1. Execution of IMS Cloning Tool main program.
2. IMS Cloning Tool SGCLLOAD library must be authorized.
3. DD for GCLINI, member of the SGCLPARM library. The GCLINI member of the SGCLPARM library provides variables to the IMS Cloning Tool programs. The GCLINI member also contains the product security license codes.
4. DD for GCLPRINT output.
5. Required DD that specifies the JOURNAL file that contains the target data set names that were refreshed by a previous or multiple previous IMSDBREFRESH commands.
6. Optional DD that specifies a file where the IMSDBCLEAN command will build JCL to execute IDCAMS to delete the target data sets recorded in the JOURNAL file. The file specified must be LRECL=80, RECFM=F or FB.
7. GCLIN DD to specify the IMSDBCLEAN command and any additional parameters.
Chapter 10. Reference: Messages

Message naming conventions

The product message identifiers (message IDs) are unique and have the format pppmmmnnx.

Where:
- ppp is the 3-alpha-character product code, GCL
- mmm is the module identifier
- nn is the message number
- x is the message type:
  - E: error
  - I: information only
  - W: warning

Example 1: GCL31070I would be the message ID for the message that is from the module GCL00310, has a message number of 70, and is an Informational message.

Example 2: GCLVSE12E is the message ID for the message that is from the module GCL01VSE, has a message number of 12, and is an Error message.

GCL017I The DB2 Cloning Tool is not available

Explanation: The requested DB2 Cloning Tool function is not available.

User response: Verify that the GCLCKZ and GCLCKZCL CLISTs have been configured correctly to point to the proper DB2 Cloning Tool library and CLIST. See Ch. 2 – Customizing the ISPF CLIST.

GCL018I The DB2 Subsystem Cloning Tool is not available

Explanation: The requested DB2 Cloning Tool function is not available.

User response: Verify that the GCLCKZ and GCLCKZCL CLISTs have been configured correctly to point to the proper DB2 Cloning Tool library and CLIST. See Ch. 2 – Customizing the ISPF CLIST.

GCL019I The DB2 Tablespace Cloning Tool is not available

Explanation: The requested DB2 Cloning Tool function is not available.

User response: Verify that the GCLCKZ and GCLCKZCL CLISTs have been configured correctly to point to the proper DB2 Cloning Tool library and CLIST. See Ch. 2 – Customizing the ISPF CLIST.

GCL01000E ??????? SUPPORT MODULE MISSING | ??????? DD STATEMENT MISSING

Explanation: During program start, either required modules or DD statements were not discovered.

User response: For missing modules, ensure the proper //STEPLIBs are available. For missing DDs, add the appropriate DD statement to the execution JCL.

GCL01001I IMS CLONING TOOL (C) dd mmm yyyy hh:mm:ss

Explanation: Welcome message.

User response: None.

GCL01002E UNRECOGNIZABLE COMMAND (N) ccccccccc

Explanation: During command interpretation, command ccccccccc could not be identified. As this situation can be determined in several places, sequence "N" isolates the point the error was detected.

User response: Check the spelling of the command.

GCL01003E COMMAND HAS NO OPERANDS

Explanation: During command interpretation, the command preceding this message did not have any operands.
GCL01005E  Most commands have operands. Ensure continuation indicators are present if the command was continued onto a second line.

GCL01005E  FATAL ERRORS HAVE OCCURRED DURING //GCLINI PROCESSING.
Explanation: During program start, one or more problems occurred during decoding of the //GCLINI member. As the //GCLINI provides vital information for IMS Cloning Tool, the program cannot continue execution.
User response: Contact IBM Software Support. Have available the listing that contains this message and the GCLINI parmlib member that controls execution of IMS Cloning Tool.

GCL01006E  IMS CLONING TOOL MUST EXECUTE AS AN Z/OS APF AUTHORIZED PROGRAM.
Explanation: During program start, IMS Cloning Tool determined it was not z/OS APF authorized. Due to restraints set forth by z/OS, numerous functions will not work, thus the program cannot continue execution.
User response: Ensure that the library from which IMS Cloning Tool is executing is z/OS APF authorized.

GCL01007E  INI AND MODULE RELEASES DO NOT MATCH.
Explanation: During program start, IMS Cloning Tool determined that the release in the INI does not match the internal release. Processing terminates.
User response: Ensure that INIMERGE has been run.

GCL01009E  ABEND DURING GCL PROCESSING
Explanation: During execution of a command within IMS Cloning Tool, an abend took place that the command did not rectify.
User response: Ensure that all parameters on the command are coded correctly, that external data sets used in the command are valid and try again. If the problem persists, contact IBM Software Support. Ensure all software run information is available: this includes the original JCL and control statements used to invoke IMS Cloning Tool, and all the spooled output from its execution.

GCL01010E  UNABLE TO DETERMINE MASTER CATALOG
Explanation: During program start, a problem occurred attempting to determine the name of the master catalog. Processing terminates.
User response: Contact IBM Software Support. Have available the listing that contains this message and the GCLINI parmlib member that controls execution of IMS Cloning Tool.

GCL01011E  SWAREQ FAILED; R15=nnnnnnnn
BLOCK REQUESTED=block
Explanation: An SWAREQ has failed for the indicated block. Processing terminates.
User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL01020I  PROGRAM: name info
Explanation: Displays the maintenance level of a loaded IMS Cloning Tool program.
User response: None.

GCL01030E  xxx ENVIRONMENT SETUP FAILED
Explanation: The xxx environment has failed to initialize.
User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL01089E  AUTHORIZATION DID NOT INITIALIZE CORRECTLY
Explanation: During program start, an error was detected in the AUTHCODE.
User response: Compare the //GCLINI member's "Product_security" section entries with those sent by IBM. If the contents agree, letter for letter, contact IBM Software Support. Have available the listing that contains this message and the GCLINI parmlib member that controls execution of IMS Cloning Tool.

GCL02001I  hh:mm:ss COPY PROCESS STARTED - PROGRAM REV=rrr | hh:mm:ss COPY PROCESS COMPLETED; RETURN CODE=nnn
Explanation: COPY command processing message. For the 'completed' message, if the return code is non-zero, check other messages for errors and/or warnings.
User response: None.
GCL02003I DDNAME=ddname ALLOCATED FOR DSN=datasetname
Explanation: 'ddname' has been dynamically allocated for the specified data set.
User response: None.

GCL02004E DDNAME MISSING: ddname
Explanation: 'ddname' was specified for IMS Cloning Tool to use. Processing terminates.
User response: Either correct the ddname specified, or, add the appropriate ddname to the job's JCL.

GCL02005E ALLOCATION FAILED FOR DSN: datasetname
Explanation: Dynamic allocation for a data set failed. The associated z/OS messages are displayed. If an allocation failure occurs, processing terminates.
User response: If unable to determine the reason for the failure from the associated z/OS messages, contact IBM Software Support. Have available the listing containing these messages.

GCL02005W DEALLOCATION FAILED FOR DDNAME: ddname
Explanation: Dynamic deallocation for a ddname failed. The associated z/OS messages are displayed. If a deallocation failure occurs, processing continues.
User response: If unable to determine the reason for the failure from the associated z/OS messages, contact IBM Software Support. Have available the listing containing these messages.

GCL02006E ERROR CALLING GCL01VV1 tttttttttttt FUNCTION: function R15=nnnn
Explanation: A problem occurred using a dataspace. tttttttttttt is the name of the internal table, and llllll is the location where the error occurred. Processing terminates.
User response: Contact IBM Software Support. Have available the listing that contains this message and the GCLINI parmlib member that controls execution of IMS Cloning Tool.

GCL02007W ERROR CALLING GCL01HEX;
FUNCTION: function R15=nnnn
Explanation: An error occurred using GCL01HEX to print a record. Processing continues.
User response: Report this message to IBM Software Support.

GCL02008E UNABLE TO LOAD PROGRAM: program name
Explanation: The indicated program name was not found. Processing terminates.
User response: Check that the job's //STEPLIB library is correct. If unable to resolve the problem, contact IBM Software Support.

GCL02009E ERROR ACCESSING JOURNAL FILE; LOC=lllll
Explanation: VSAM error occurred accessing the journal file. Processing terminates.
User response: See associated GCLVSEnnE error messages. If unable to resolve problem, contact IBM Software Support. Have available the listing that contains these messages.

GCL02010E DUPLICATE JOURNAL ENTRY;
LOC=lllll
Explanation: A duplicate record was detected. Processing terminates.
User response: See associated GCLVSEnnE error messages. If unable to resolve problem, Contact IBM Software Support. Have available the listing that contains these messages.

GCL02011E JOURNAL CONTROL RECORD NOT FOUND
Explanation: An expected record was not found in the IMS Cloning Tool journal file. Processing terminates.
User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL02017E THE DDNAME IS EMPTY OR HAS BEEN DUMMIED, DDNAME: ddname
Explanation: No records were read from the ddname specified for a keyword. Processing terminates.
User response: Check that the DD has not been specified as 'DD DUMMY' or 'DD DSN=NULLFILE'. Check that the DSN specified in the ddn has been created successfully.

GCL02018E THE DDNAME INPUT HAS EXCEEDED THE CURRENT CAPACITY, DDNAME: ddname
Explanation: The number of entries read from the ddname exceeded the current capacity. Processing terminates.
User response: Contact IBM Software Support. Have available the listing that contains this message.
**GCL02019E**  The keyword DOES NOT HAVE A LRECL OF 80, DDNAME: ddn

**Explanation:** The data set allocated to the ddname for the keyword does not have a LRECL of 80. The LRECL of this dataset must be 80.

**User response:** Change the data set allocated to the ddname to have a LRECL of 80.

---

**GCL02020I**  TARGET VOLUMES WILL BE CLIPPED WHEN THE VOLOPTIONS OFFLINECLIP COMMAND IS EXECUTED

**Explanation:** The target volumes will not be clipped by the COPY command due to the use of the VOLPAIRSDEVN-NOCLIP or VOLPAIRSDEVN-NOCLIP-DDN keywords. The target volumes will be clipped when the VOLOPTIONS OFFLINECLIP command is executed.

**User response:** None.

---

**GCL02021I**  SOURCE USER CATALOGS WILL BE BACKED UP WHEN THE UCATOPTIONS BACKUP COMMAND IS EXECUTED

**Explanation:** The source user catalogs will not be backed by the COPY command due to the use of the USERCATALOGS-NOBACKUP keyword. The source user catalogs will be backed up when the UCATOPTIONS BACKUP command is executed.

**User response:** None.

---

**GCL02022I**  VOLSER: volser LOGICAL NUMBER OF CYLINDERS: nnnnnnnnn IS LESS THAN PHYSICAL NUMBER OF CYLINDERS: nnnnnnnnn

**Explanation:** The identified volume has a logical size, from the Format 4 DSCB, that is less than the physical size, from the DCE. The logical size will be used for pairing this volume. This may lead to a condition where there are not enough target volumes available of the correct size to pair with all the source volumes.

**User response:** None is required. ICKDSF can be used to make the logical size equal to the physical size.

---

**GCL02023I**  ANTRQST LEVEL=nn; ESRSVCS LEVEL=nnn

**Explanation:** The level returned by ANTRQST REQUEST=LEVEL.

**User response:** None.

---

**GCL02024W**  ANTRQST LEVEL NOT SUPPORTED; LEVEL=nn

**Explanation:** For FlashCopy support, the level must be greater than four (4). For SnapShot support, the level must be greater than one (1). The level returned by ANTRQST is not supported. Processing terminates.

**User response:** None.

---

**GCL02025E**  ANTMAIN NOT ACTIVE

**Explanation:** An ANTRQST request failed because the system task, ANTMAIN, is not active. Processing terminates.

**User response:** Start the system task, ANTMAIN.

---

**GCL02027E**  ANTRQST ERROR; request type RETURN CODE=nnnn X'hhhh' REASON CODE=nnnn X'hhhh' LOC=lllll VOLSER=volser

**Explanation:** An ANTRQST request failed. 'request type' indicates if the macro was incorrect, or, if the Data Mover failed the request. The return code and reason code are displayed in decimal and hexadecimal format. 'lllll' is an internal indicator of where the problem occurred. Processing terminates.

**User response:** Contact IBM Software Support. Have available the listing that contains this message.
GCL02048I  OPTIONS IN EFFECT FOR THIS EXECUTION: merged options

Explanation:  Informational message indicating how COPY will handle the options. The displayed options are derived from the INI and any overriding specifications in the command input.

User response:  None.

GCL02050E  ERROR IN PARAMETERS FOR keyword

Explanation:  The parameters for the indicated keyword were incorrect. Processing terminates.

User response:  Check the keyword parameters. Mutually exclusive keywords may have been used.

GCL02051E  REQUIRED KEYWORD MISSING: keyword

Explanation:  A keyword required for processing has been omitted. Processing terminates.

User response:  Specify the required keyword.

GCL02052E  REQUIRED INI SECTION/TOKEN MISSING: SECTION=section

Explanation:  An error occurred validating the GCLINI parmlib options. Processing terminates.

User response:  Correct the GCLINI member in the IMS Cloning Tool PARMLIB data set.

GCL02053E  KEYWORD: keyword MAXIMUM LENGTH: mnn EXCEEDED | TOKEN: token MAXIMUM LENGTH: mnn EXCEEDED

Explanation:  The operand entered for a keyword or INI token exceeded the maximum length allowed. mnn is the maximum allowed length. Processing terminates.

User response:  Correct the length of the keyword's operand or the token's value.

GCL02054E  KEYWORD HAS MORE THAN 1 OPERAND; ONLY 1 ALLOWED: keyword

Explanation:  Multiple operands were detected for a keyword; only one operand is permitted. Processing terminates.

User response:  Correct the keyword to use one operand.

GCL02055E  STORAGE GROUPS NOT SUPPORTED WITH DATA-MOVER PROGRAM NONE

Explanation:  The DATA-MOVER program was specified as 'NONE'. Storage group names/masks were specified for the source and/or target volume serials. Processing terminates.

User response:  Correct the DATA-MOVER program specified, or, use keywords FROM-VOLSER/TO-VOLSER for the volume serials.

GCL02056E  NOTHING SPECIFIED FOR KEYWORD: keyword

Explanation:  A keyword was entered without an appropriate operand. Processing terminates.

User response:  Specify an appropriate operand for the keyword.

GCL02057E  DUPLICATE FOUND; KEYWORD: keyword ENTRY: entry

Explanation:  The indicated 'entry' for the keyword was previously specified. Processing terminates.

User response:  Remove the duplicate entry.

GCL02058E  INVALID VALUE IN KEYWORD: keyword VALUE: value error text

Explanation:  The value in the keyword is invalid. 'error text' indicates the problem detected with the value. Processing terminates.

User response:  Correct the value specified in the keyword.

GCL02059E  ALLOCATION FOR USERCATALOG FAILED; DSN=BCS dname

Explanation:  The BCS dname was not successfully allocated for further checking.

User response:  Check that the user catalogs have been specified correctly.

GCL02060E  UCBSCAN ERROR; RETURN CODE=mnn REASON CODE=mnn | UCBINFO ERROR; RETURN CODE=mnn REASON CODE=mnn

Explanation:  An error occurred using UCBSCAN or UCBINFO. Processing terminates.

User response:  Contact IBM Software Support. Have available the listing containing this message.
**GCL02061E  GCL02070E**

**GCL02061E**  GCL01SMF ERROR; RETURN
CODE=nnnn  LOC: lllllll  entry

**Explanation:** An error occurred using GCL01SMF to obtain SSI information for the 'entry'. lllllll is the internal location where the error occurred. Processing terminates.

**User response:** Contact IBM Software Support. Have available the listing containing this message.

---

**GCL02062E**  NO STORAGE GROUPS RETURNED BY SSI | NO VOLUME SERIALS RETURNED BY SSI

**Explanation:** Storage groups: The COPY command was requested to determine volume serial numbers by storage group names. SSI did not return any storage groups to GCL01SMF. Processing terminates.

Volume serials: The COPY command was requested to check the SMS status of volume serials. SSI did not return any volume serials to GCL01SMF. Processing terminates.

**User response:** Storage groups: Check that storage groups are defined on the system. If unable to determine the cause of this message, contact IBM Software Support. Have available the listing containing this message.

Volume serials: Check that storage groups are defined on the system. If unable to determine the cause of this message, contact IBM Software Support. Have available the listing containing this message.

---

**GCL02063W**  NO VOL/STG MATCH FOUND;
KEYWORD: keyword ENTRY: entry (If the keyword involved source volumes, one of the following will be issued.) | EXPLICIT SOURCE STORAGE GROUP NOT FOUND | EXPLICIT VOLSER NOT FOUND ONLINE | MASK FOR SOURCE NOT RESOLVED

**Explanation:** The indicated 'entry' for the keyword was not matched. For VOL, the indicated volser, or, the volser derived from a storage group, was not found. For STG, the indicated storage group was not found. Processing continues if only a warning ('W') message was issued.

**User response:** None required for a warning. For an error with a source keyword, correct the keyword specification, or ensure that all source volumes are online.

---

**GCL02064E**  INVALID VOLSER: volser IN
KEYWORD: keyword

**Explanation:** The volume serial number specified is invalid. Processing terminates.

**User response:** Correct the volser specification.

---

**GCL02065E**  STORAGE GROUP REFERENCED AS BOTH SOURCE AND TARGET: storage group name

**Explanation:** The storage group was used in both the FROM-STORAGEGROUP and TO-STORAGEGROUP keywords. Processing terminates.

**User response:** Correct the storage group specification.

---

**GCL02066E**  VOLSER REFERENCED AS BOTH SOURCE AND TARGET: volser

**Explanation:** The volume serial was used in both the FROM-VOLSER and TO-VOLSER keywords. Processing terminates.

**User response:** Correct the volume serial specification.

---

**GCL02067W**  NO VOLUME SERIALS FOR STORAGE GROUP: storage group

**Explanation:** SSI did not return any volsers for the storage group to GCL01SMF. Processing continues.

**User response:** None.

---

**GCL02068E**  UNMATCHED ENTRIES IN KEYWORD: keyword

**Explanation:** For USERCATALOGS, there must be a source BCS followed by a target BCS. An uneven number of BCS's was specified. For VOLPAIRS, there must be a source volume serial, target volume serial. An uneven number of entries was specified. For VOLPAIRSDEVN, there must be a source volume serial, target volume serial, target device number. Unmatched entries were found. Processing terminates.

**User response:** Correct the keyword specification.

---

**GCL02069E**  UNRESOLVED SYMBOL IN KEYWORD: keyword R15=nnnn
ERR=error text

**Explanation:** A symbol was used in the keyword. GCL01KSS was unable to resolve the symbol. Processing terminates.

**User response:** Define the symbol or remove the symbol.

---

**GCL02070E**  SECURITY PRODUCT DENIED ACCESS TO DSN: datasetname

**Explanation:** The dsn indicated is not authorized for alter by your security product. If the RACF profile that is associate

**User response:** Change the dsn to one you can use, or, have your security administrator give you 'ALTER' authority to the data set.
GCL02071E RACROUTE ERROR; SAF RC=nnnn
RACF RC=nnnn RACF REASON CODE=nnnn
Explanation: An unexpected return code from SAF or RACF occurred. Processing terminates.
User response: Contact IBM Software Support. Have available the listing containing this message.

GCL02072E MORE SOURCE VOLSERS THAN TARGET VOLSERS
Explanation: More volsers were found in the FROM-VOLSER or FROM-STORAGEGROUP keywords than were found in the TO-VOLSER or TO-STORAGEGROUP keywords. Processing terminates.
User response: Correct the FROM- or TO-specifications. There must be at least as many target volumes as source volumes.

GCL02073E DATA-MOVER PGM NOT RECOGNIZED; PROGRAM=program
Explanation: A program was specified in the DATA-MOVER(PGM(..)) keyword. The program is not recognized. Processing terminates.
User response: Correct the program specification.

GCL02074E USERCATALOG USED AS BOTH SOURCE AND TARGET: BCS dsname
Explanation: The BCS dsname was designated as a source in one pair and as a target in another pair. Processing terminates.
User response: Correct the USERCATALOGS specification.

GCL02075E NO VOLUME SERIALS SELECTED FOR source/target
Explanation: No volume serials have been found for IMS Cloning Tool to use as source volser, or, no volume serials have been found for IMS Cloning Tool to use as target volser. Processing terminates.
User response: For 'SOURCE', check if volsers specified in the FROM- keyword have been removed by use of the EXCLUDE-FROM- keyword. For 'TARGET', check if volsers specified in the TO-keyword have been removed by use of the EXCLUDE-TO- keyword.

GCL02076E DEVICE TYPE AND MODEL NOT FOUND FOR volser
Explanation: IOSCDS for the volser did not return information needed to pair source with target volsers.
User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL02077E EXCLUDE NOT ACCEPTED WITH DATA-MOVER PROGRAM NONE
Explanation: EXCLUDE-FROM-VOLSER and EXCLUDE-TO-VOLSER are not accepted with DATA-MOVER program 'NONE'. Processing terminates.
User response: Remove the EXCLUDE keyword.

GCL02078E VOLPAIRS ONLY ACCEPTED WITH DATA-MOVER PROGRAM NONE. VOLPAIRSDEVN ONLY ACCEPTED WITH DATA-MOVER PROGRAM NONE or PPRC.
Explanation: Keyword VOLPAIRS was used, but, the DATA-MOVER program is not 'NONE'. Keyword VOLPAIRSDEVN was used, but, the DATA-MOVER program was neither 'NONE' nor 'PPRC'. Processing terminates.
User response: Correct the keyword specifications.

GCL02079E TARGET DEVICE NUMBER mmmm IS CURRENTLY ONLINE; VOLSER: volser
Explanation: Keyword VOLPAIRSDEVN was used, but, a specified target device number is online. Processing terminates.
User response: Check the VOLPAIRSDEVN specification. The target volume serials should be offline to the executing system and have the paired source volume serial in the label.

GCL02080E TARGET DEVICE NUMBER mmmm PREVIOUSLY SELECTED FOR VOLSER: previous volser CURRENT VOLSER: current volser
Explanation: DESCRIPTION: The same device number was used for more than one target volume serial. Processing terminates.
User response: Check the VOLPAIRSDEVN specification. The target volume serials should be offline to the executing system and have the paired source volume serial in the label.

GCL02081E VOLUME volser DEVICE NUMBER mmmm HAS NO chpid PATHS AVAILABLE
Explanation: The indicated device has no paths available for IMS Cloning Tool to use to access the volume. Processing terminates.
User response: Ensure that at least one chpid is online for each target device specified.
### GCL02082E

**TARGET DEVICE NUMBER: nnnn IS NOT AN ECKD DEVICE**

**Explanation:** The indicated device does not appear to support ECKD commands. Processing terminates.

**User response:** Ensure that only supported devices are specified.

### GCL02083E

**FASTREP PARAMETER NOT RECOGNIZED; PARM=parameter**

**Explanation:** The parameter specified in the DATA-MOVER(FASTREP(...)) keyword is not recognized. Processing terminates.

**User response:** Correct the parameter specification.

### GCL02084E

**OFFLINE SOURCES NOT ACCEPTED WITH DATA-MOVER PROGRAM ADRDSSU**

**Explanation:** SOURCESOFFLINE(Y) was specified with DATA-MOVER(PGM(ADRDSU)) specified (or defaulted). The source volumes must be online for ADRDSSU. Processing terminates.

**User response:** Either remove the SOURCESONLINE keyword, or, specify DATA-MOVER(PGM(NONE)).

### GCL02085I

**DSNS FOR KEYWORD: keyword list of dsns**

**Explanation:** Parsing found the listed dsns for the keyword.

**User response:** None.

### GCL02086I

**STORAGE GROUPS/MASKS FOR KEYWORD: keyword**

**Explanation:** Parsing found the listed storage groups/masks for the keyword.

**User response:** None.

### GCL02087I

**nnnnn VOLUMES OR MASKS FOR KEYWORD: keyword | nnnnn VOLUMES DERIVED FOR KEYWORD: keyword | nnnnn VOLUMES RESOLVED FOR KEYWORD: keyword | nnnnn VOLUME PAIRS FOR KEYWORD: keyword nnnnn | VOLUMES/DEVICES FOR KEYWORD: keyword list of volers**

**Explanation:** Parsing found the listed volers/masks for a keyword, or derived the listed volers from a storage group keyword. nnnnn is the number of volume serials. The third format, RESOLVED, indicates the number of volume serials found online for the associated keyword.

**User response:** None.

### GCL02088I

**VOLUME SERIALS TO BE USED FOR SOURCE | VOLUME SERIALS TO BE USED FOR TARGET list of volers**

**Explanation:** The listed volers will be used during IMS Cloning Tool COPY processing.

**User response:** None.

### GCL02089I

**TARGET VOLUMES WILL NOT BE CHECKED FOR EMPTY**

**Explanation:** Informational message.

**User response:** None.

### GCL02090I

**TARGET VOLUMES WILL BE CHECKED FOR EMPTY**

**Explanation:** Informational message.

**User response:** None.

### GCL02091I

**VALIDATING KEYWORD: keyword**

**Explanation:** Parsing is checking the indicated keyword indicated in the command.

**User response:** None.

### GCL02101I

**hh:mm:ss VOLUME COPY STARTED - PROGRAM REV=rrr (** SIMULATION **) | hh:mm:ss VOLUME COPY COMPLETED; RETURN CODE=nnn**

**Explanation:** VOLUME PAIRING processing message.

**User response:** None.

### GCL02111E

**JOURNAL VOLUME PAIR RECORD(S) NOT FOUND | JOURNAL UCAT PAIR RECORD(S) NOT FOUND**

**Explanation:** An expected record was not found in the IMS Cloning Tool journal file. Processing terminates.

**User response:** Contact IBM Software Support. Have available the listing that contains this message.

### GCL02104E

**OPEN FAILED FOR DDNAME=ddname**

**Explanation:** 'ddname' was allocated for IMS Cloning Tool to use, but the open for the file failed. Processing terminates.

**User response:** If unable to determine the reason the open failed, contact IBM Software Support. Have available the listing that contains this message.
GCL02107W ERROR CALLING GCL01HEX;  
FUNCTION: function R15=nnnn
Explanation: An error occurred using GCL01HEX to print a record. Processing continues.
User response: Report this message to IBM Software Support.

GCL02108E UNABLE TO LOAD PROGRAM: program name
Explanation: The indicated program name was not found. Processing terminates.
User response: Check that the job’s /STEPLIB library is correct. If unable to resolve the problem, contact IBM Software Support.

GCL02109E ERROR ACCESSING JOURNAL FILE; LOC=lllll
Explanation: A VSAM error occurred accessing the journal file. Processing terminates.
User response: See associated GCLVSEnnE error messages. If unable to resolve problem, contact IBM Software Support. Have available the listing that contains these messages.

GCL02110E DUPLICATE JOURNAL ENTRY; LOC=lllll
Explanation: A duplicate record was detected. Processing terminates.
User response: Contact IBM Software Support. Have available the listing that contains these messages.

GCL02112E JOURNAL UCAT PAIR RECORD IS WRONG VERSION
Explanation: The journal record does not match the expected format. The record is printed. Processing terminates.
User response: Verify that different releases of IMS Cloning Tool have not been run using the same journal data set. If unable to resolve problem, IBM Software Support. Have available the listing that contains this message.

GCL02131I PRE-COPIED VOLUME PAIRS ACCEPTED: SOURCE TARGET
Explanation: The DATA-MOVER program was NONE. The source and target volume serials have been paired as entered.
User response: None.

GCL02132E UNEXPECTED CONDITION; error text
Explanation: An unexpected condition occurred while dispatching a copy task or while waiting for the completion of a copy task. Processing terminates.
User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL02141E INTERNAL ERROR; DATA MOVER SETTING xx INVALID
Explanation: The setting for the data mover to be used was not recognized. Processing terminates.
User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL02142E MORE SOURCE VOLSERS THAN TARGET VOLSERS
Explanation: Volume pairing detected more source volumes than target volumes. Processing terminates.
User response: This may have been caused by the use of TARGET-VOLS-SHOULD-BE-EMPTY eliminating target volumes. If unable to determine the cause, contact IBM Software Support. Have available the listing that contains this message.

GCL02144E ANTRQST LEVEL NOT SUPPORTED
Explanation: For FlashCopy support, the level must be greater than four (4). For SnapShot support, the level must be greater than one (1). The level returned by ANTRQST is not supported. Processing terminates.
User response: Check with your system programmer for upgrading the system.

GCL02145E ANTRMAIN NOT ACTIVE
Explanation: An ANTRQST request failed because the system task, ANTRMAIN, is not active. Processing terminates.
User response: Start the system task, ANTRMAIN.

GCL02146E ANTRQST DID NOT RETURN ANY INFORMATION; RESTART ANTRMAIN SYSTEM TASK
Explanation: The ANTRQST REQUEST=FCQUERY
GCL02147E • GCL02151E

did not receive information for a device. Processing terminates.

User response: Restart the ANTMAIN system task, or, apply IBM apar OW47323.

GCL02147E ANTRQST ERROR; request type
RETURN CODE=nnnn X'hbbbi' REASON
CODE=nnnn X'hbbbi' LOC=lllll
VOLSER=volser

Explanation: An ANTRQST request failed. 'request type' indicates if the macro was incorrect, or, if the Data Mover failed the request. The return code and reason code are displayed in decimal and hexadecimal format. 'lllll' is an internal indicator of where the problem occurred. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL02148E SOURCE VOLUME NOT ELIGIBLE
FOR PROCESSING; VOLSER=volser | TARGET VOLUME NOT ELIGIBLE
FOR PROCESSING; VOLSER=volser
WILL BE SKIPPED, 'reason text'

Explanation: A request for SDVCINFO or SQRYDVCS indicated the indicated volume serial is not eligible for FlashCopy or SnapShot. 'reason text' indicates the system response. For a source volume, processing terminates. For a target volume, the target volume is eliminated for pairing; processing continues.

User response: If this message was for a source volume, eliminate source volumes which are not eligible for FlashCopy or SnapShot. If this message was for a target volume, no action is required.

GCL02149E SOURCE VOLSER=volser ACTIVE IN COPY RELATIONSHIP | TARGET
VOLSER=volser ACTIVE IN COPY RELATIONSHIP

Explanation: An FCQUERY request indicated the volser is currently in a copy relationship. The FCQUERY response is printed. For a source volser, processing terminates. For a target volser, processing continues, but, that target volser will not be used by IMS Cloning Tool.

The format of the FCQUERY response for FlashCopy V1 is: devn,ssid,lss,cca,cu,serial,status

Where:
• devn is the device number.
• ssid is the subsystem ID for the device.
• lss is logical subsystem number.
• cca is the subsystem device address.
• cu is the subsystem type number.
• serial is the subsystem serial number.
• status is the current status of the device:
  – XRC: Device is in XRC pair.
  – PPRC: Device is in PPRC pair.
  – CCL: Device is in CC session.
  – FC: Device is in FlashCopy (no background copy).
  – FC..xxx%: Device is in FlashCopy (background copy).
  – SIMPLEX: Device is not in any copy status.

The format of the FCQUERY response for FlashCopy V2 is: devn,ssid,lss,cca,cu,serial,act,max,xc,pc,cc

• devn is the device number.
• ssid is the subsystem ID for the device.
• lss is logical subsystem number.
• cca is the subsystem device address.
• cu is the subsystem type number.
• serial is the subsystem serial number.
• act is the current number of FlashCopy relationships that the device has. This value is indicated in decimal format.
• max is the maximum number of FlashCopy relationships that the device may have. This value is indicated in decimal format.
• xc is either S indicating that the device is an XRC source volume, or is N indicating that the device is not an XRC source volume.
• pc is either P indicating that the device is a PPRC primary volume, is S indicating that the device is an PPRC secondary volume, or is N for neither.
• cc is either S indicating that the device is a concurrent copy source volume, or is N indicating that the device is not a concurrent copy source volume.

User response: Exclude that source volume from processing, or, ensure that all copy relationships have terminated before initiating the COPY.

GCL02150E NO INFORMATION RETURNED FOR SOURCE VOLSER=volser

Explanation: SDVCINFO did not return information for the indicated source volume. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL02151E NO TARGETS RETURNED FOR SOURCE VOLSER=volser

Explanation: SQRYDVCS did not return any target volsers for the indicated source volume. Processing terminates.

User response: Ensure that for every source volume, there is a target volume that meets the criteria required for FlashCopy or SnapShot. If unable to determine the reason for this message, contact IBM Software Support.
GCL02152E  NO TARGET VOLSER FOUND FOR
SOURCE VOLSER=volser source volser information returned volser(s)
information

Explanation: Based on the source volume's device type, FlashCopy or SnapShot capability, LSS, and number of tracks, no suitable target volume was found for a COPY FULL.

User response: Ensure that for every source volume, there is a target volume that meets the criteria required. If volser masks were used, you may need to explicitly code volume serial pairs in the FROM/TO parameters to ensure particular volumes are paired. If unable to determine the reason for this message, contact IBM Software Support. Have available the listing that contains this message.

GCL02154I  TARGET VOLUME ELIMINATED,
VOLSER=volser | DATA SET OTHER
THAN SYS1.VTOCIX OR SYS1.VVDS
FOUND: datasetname

Explanation: An unexpected data set was found on a target volume in response to TARGET-VOLS-SHOULD-BE-EMPTY. Processing continues.

User response: None required, unless this causes fewer target volumes than source volumes for the pairing process.

GCL02155I  SMS SOURCE VOLSER=volser HAS BEEN PAIRED TO NON SMS TARGET
VOLSER=volser | NON SMS SOURCE
VOLSER=volser HAS BEEN PAIRED TO
SMS TARGET VOLSER=volser

Explanation: A source volume has been paired to a target volume that does not have the same SMS attribute. There may be problems when accessing or deleting data sets on the target volume.

User response: None.

GCL02156E  SOURCE VOLSER: volser NOT
FLASHCOPY CAPABLE | TARGET
VOLSER: volser \NOT FLASHCOPY
CAPABLE

Explanation: An FCQUERY request indicated the volser is not FlashCopy capable. Information returned by FCQUERY is printed. For a source volser, processing continues, but, that target volser will not be used.

User response: Exclude that source volume from processing, or, determine why the volume is not FlashCopy capable and correct if possible.

GCL02157E  type VOLSER: volser IS EXTENDED
ADDRESS VOLUME

Explanation: The indicated volser is an Extended Address Volume (EAV). Extended Address Volumes are not currently supported by IMS Cloning Tool. Processing terminates.

User response: Exclude the volume from processing.

GCL02160E  THE VOLSER SPECIFIED FOR A
SOURCE USERCATALOG IS NOT A
SOURCE VOLSER VOLSER=volser
BCS=catalogname

Explanation: The volser specified for a source catalog in the USERCATALOGS keyword is not a source volser. Processing terminates.

User response: Correct the volser specified for the source catalog in the USERCATALOGS keyword to be source volser.

GCL02161I  SOURCE USERCATALOG WILL BE
READ FROM TARGET VOLUME;
VOLSER=volser BCS=catalogname

Explanation: The source catalog will be read from the shown target volume.

User response: None.

GCL02201I  hh:mm:ss BCS BACKUP STARTED -
PROGRAM REV=rrr | hh:mm:ss BCS
BACKUP COMPLETED; RETURN
CODE=nnn

Explanation: BCS backup processing message.

User response: None.

GCL02205E  ALLOCATION FAILED FOR DSN:
datasetname | DEALLOCATION FAILED
FOR DSN: datasetname

Explanation: Dynamic allocation for a data set failed, or, dynamic deallocation for a ddname failed. The associated z/OS messages are displayed. Processing terminates.

User response: If unable to determine the reason for the failure from the associated z/OS messages, contact IBM Software Support. Have available the listing containing these messages.

GCL02206E  ERROR CALLING GCL01VV1
FUNCTION: function R15=nnnn
R0=nnnnnnnn LOC=lillll

Explanation: A problem occurred using a dataspace. lillll is the name of the internal table. lillll is the location where the error occurred. Processing terminates.
GCL02207W  ERROR CALLING GCL01HEX;
          FUNCTION: function R15=nnnn
Explanation: An error occurred using GCL01HEX to print a record. Processing continues.
User response: Report this message to IBM Software Support.

GCL02209E  ERROR ACCESSING JOURNAL FILE;
          LOC=lllll
Explanation: A VSAM error occurred accessing the journal file. Processing terminates.
User response: See associated GCLVSEnnE error messages. If unable to resolve problem, contact IBM Software Support. Have available the listing that contains these messages.

GCL02211E  JOURNAL CONTROL RECORD NOT FOUND | JOURNAL USER CATALOG RECORD(S) NOT FOUND
Explanation: An expected record was not found in the IMS Cloning Tool journal file. Processing terminates.
User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL02212E  JOURNAL CONTROL RECORD IS WRONG VERSION | JOURNAL UCAT PAIR RECORD IS WRONG VERSION
Explanation: The journal record does not match the expected format. The record is printed. Processing terminates.
User response: Verify that different releases of IMS Cloning Tool have not been run using the same journal data set. If unable to resolve problem, contact IBM Software Support. Have available the listing that contains this message.

GCL02213E  COUNT MISMATCH; RECORDS READ=rrrr PARM COUNT=pppp
Explanation: The number of User Catalog records read from the IMS Cloning Tool journal, rrrr, is not the same as the number indicated in the IMS Cloning Tool journal control record, pppp. Processing terminates.
User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL02230I  BCS BACKUP TASK COMPLETED;
          RETURN CODE=nn SYSOUT DD=ddname
Explanation: A BCS backup task has ended.
User response: None if the RETURN CODE is zero. If the RETURN CODE is not zero, check the indicated sysout file for warning or error messages for the BCS backup task.

GCL02241I  BCS=bsname WILL BE BACKED UP TO DSN=backup dsname
Explanation: The indicated BCS will be backed up to the indicated backup dataset name. The backup dataset name was derived from the CATWORK-DSN parameter.
User response: None.

GCL02242E  ERROR PARSING CATWORK-DSN: catwork dsn
Explanation: An internal error occurred handling the CATWORK-DSN.
User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL02501I  hh:mm:ss COPYRESTART STARTED - PROGRAM REV=rrr | hh:mm:ss COPYRESTART COMPLETED;
          RETURN CODE=nnn
Explanation: COPYRESTART processing message.
User response: None.

GCL02503I  DDNAME=ddname ALLOCATED FOR DSN=datasetname
Explanation: ‘ddname’ has been dynamically allocated for the indicated data set.
User response: None.

GCL02504E  DDNAME MISSING: ddname
Explanation: ‘ddname’ was specified for IMS Cloning Tool to use. Processing terminates.
User response: Either correct the ddname specified, or, add the appropriate ddname to the job’s JCL.
GCL02505E  ALLOCATION FAILED FOR DSN: datasetname
          DEALLOCATION FAILED FOR DDNAME: ddname

Explanation: Dynamic allocation for a data set failed, or, dynamic deallocation for a ddname failed. The associated z/OS messages are displayed. If an allocation failure occurs, processing terminates. If a deallocation failure occurs, processing continues.

User response: If unable to determine the reason for the failure from the associated z/OS messages, Contact IBM Software Support. Have available the listing containing these messages.

GCL02506E  ERROR CALLING GCL01VV1 function
          R15=nnnn
          R0=nnnnnnnn
          LOC=lllll

Explanation: A problem occurred using a dataspace. function is the name of the internal table. lllll is the location where the error occurred. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message and the GCLINI parmlib member that controls execution of IMS Cloning Tool.

GCL02507W  ERROR CALLING GCL01HEX;
          FUNCTION: function R15=nnnn

Explanation: An error occurred using GCL01HEX to print a record. Processing continues.

User response: Report this message to IBM Software Support.

GCL02508E  UNABLE TO LOAD PROGRAM:
          program name

Explanation: The indicated program name was not found. Processing terminates.

User response: Check that the job's /STEPLIB library is correct. If unable to resolve the problem, Contact IBM Software Support.

GCL02509E  ERROR ACCESSING JOURNAL FILE;
          LOC=lllll

Explanation: A VSAM error occurred accessing the journal file. Processing terminates.

User response: See associated GCLVSEMnE error messages. If unable to resolve problem, Contact IBM Software Support. Have available the listing that contains these messages.

GCL02511E  JOURNAL CONTROL RECORD NOT FOUND ! JOURNAL VOLUME PAIR RECORD(S) NOT FOUND

Explanation: An expected record was not found in the IMS Cloning Tool journal file. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL02513E  RECORD COUNT IS ZERO; LOC=lllll
          R15=nnnn
          R0=nnnnnnnn
          LOC=lllll

Explanation: There was a problem with the journal records needed to initiate the command. For the first format, the journal control record indicates no entries were added. For the second format, the number of records read from the journal, rrrr, is not the same as the number indicated in the journal control record, cccc. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL02515E  THE COPY PROCESS WAS NOT INITIATED BY A METHOD WHICH IS SUPPORTED BY RESTART

Explanation: Only a copy initiated by PPRC where the pairs have not been terminated may be restarted. Processing terminates.

User response: If PPRC was used to initiated the volume copies and the copies are still in progress, Contact IBM Software Support. Have available the listing that contains this message.

GCL02516E  COPY STATUS IS n

Explanation: Only a copy initiated by PPRC supports the COPYRESTART command. The journal indicates that PPRC was not initiated by IMS Cloning Tool. Processing terminates.

User response: If PPRC was used as the COPY DATA-MOVER PGM, contact IBM Software Support. Have available the listing that contains this message.

GCL02531W  COPY STEP WAS A SIMULATION

Explanation: The journal indicates that the COPY command was a simulation. No restart of the copy will be done.

User response: None.
GCL02551E  REQUIRED KEYWORD MISSING:

**keyword**

Explanation: A keyword required for processing has been omitted. Processing terminates.

User response: Specify the required keyword.

-----

GCL02553E  KEYWORD: **keyword**  MAXIMUM LENGTH: **nnn**  EXCEEDED

Explanation: The operand entered for a keyword exceeded the maximum length allowed for the operand. **nnn** is the maximum allowed length for the keyword. Processing terminates.

User response: Correct the length of the keyword's operand.

-----

GCL02554E  KEYWORD HAS MORE THAN 1 OPERAND; ONLY 1 ALLOWED:

**keyword**

Explanation: Multiple operands were detected for a keyword; only one operand is permitted. Processing terminates.

User response: Correct the keyword to use one operand.

-----

GCL02556E  NOTHING SPECIFIED FOR KEYWORD: **keyword**

Explanation: A keyword was entered without an appropriate operand. Processing terminates.

User response: Specify an appropriate operand for the keyword.

-----

GCL02557E  DUPLICATE FOUND; KEYWORD: **keyword**  ENTRY: **entry**

Explanation: The indicated 'entry' for the keyword was previously specified. Processing terminates.

User response: Remove the duplicate entry.

-----

GCL02558E  INVALID VALUE IN KEYWORD:

**keyword**  VALUE: **value error text**

Explanation: The value in the keyword is invalid. 'error text' indicates the problem detected with the value. Processing terminates.

User response: Correct the value specified in the keyword.

-----

GCL02564E  INVALID VOLSER: **volser** IN KEYWORD: **keyword**

Explanation: The volume serial number indicated is invalid. Processing terminates.

User response: Correct the volser specification.
GCL02632I  PPRC RELATIONSHIP ESTABLISHED;  
SOURCE: sourcevolser sourcedevicenumber  
TARGET: targetvolser targetdevicenumber  
Explanation: A new PPRC relationship has been established between the indicated volumes.  
User response: None.

GCL02644E  system task NOT ACTIVE  
Explanation: An ANTRQST request failed because a system task is not active. Processing terminates.  
User response: Start the indicated system task.

GCL02644E  system task NOT ACTIVE  
Explanation: An ANTRQST request failed because a system task is not active. Processing terminates.  
User response: Start the indicated system task.

GCL02646E  ANTRQST DID NOT RETURN ANY INFORMATION; RESTART system task SYSTEM TASK  
Explanation: The ANTRQST REQUEST=PQUERY did not receive information for a device. Processing terminates.  
User response: Restart the indicated system task.

GCL02647E  ANTRQST ERROR; request type RETURN CODE=nnnn X'hhhh' REASON CODE=nnnn X'hhhh' LOC=lllll  
Explanation: An ANTRQST request failed. 'request type' indicates if the macro was incorrect, or, if the Data Mover failed the request. The return code and reason code are displayed in decimal and hexadecimal format. 'lllll' is an internal indicator of where the problem occurred. Processing terminates.  
User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL03003I  DDNAME=ddname ALLOCATED FOR DSN=datasetname  
Explanation: 'ddname' has been dynamically allocated for the indicated data set.  
User response: None.

GCL03004E  OPEN FAILED FOR DDNAME=ddname  
Explanation: 'ddname' was allocated for IMS Cloning Tool to use, but, the open for the file failed. Processing terminates.  
User response: If unable to determine the reason the open failed, contact IBM Software Support. Have available the listing that contains this message.

GCL03005E  ALLOCATION FAILED FOR DSN: datasetname 1 ALLOCATION FAILED FOR DDNAME: ddname 1 DEALLOCATION FAILED FOR DDNAME: ddname  
Explanation: Dynamic allocation for a data set or ddname failed, or dynamic deallocation for a ddname failed. The associated z/OS messages are displayed. If an allocation failure occurs, processing terminates. If a deallocation failure occurs, processing continues.  
User response: If unable to determine the reason for the failure from the associated z/OS messages, Contact IBM Software Support. Have available the listing containing these messages.

GCL03008E  UNABLE TO LOAD PROGRAM: program name  
Explanation: The indicated program name was not found. Processing terminates.  
User response: Check that the job's //STEPLIB library is correct. If unable to resolve the problem, Contact IBM Software Support.

GCL03012E  UNABLE TO ESTABLISH ESTAEX; R15=nnnn  
Explanation: The program was not able to establish an estaex environment. Processing terminates.  
User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL03021E  ADRDSSU COPY FAILED; R15=nnnn  
Explanation: A non-zero return code was received from ADRDSSU. The ADRDSSU messages will be contained in the sysout for the copy task. Processing terminates.  
User response: Check the ADRDSSU messages for the cause of the failure. If assistance is required, Contact
IBM Software Support. Have available the listing that contains this message.

**GCL03041E**  
**GCL03105E**  
**GCL03105W**  
**GCL03099E**  
**GCL03041E**  
**GCL03042E**  
**GCL03043E**  
**GCL03104E**  
**GCL03108E**  
**GCL03122E**

**GCL03041E**  
Undefined results;  
*error text*

**Explanation:** An unexpected condition occurred calling program GCL00900. *error text* has a description of the problem. Processing terminates.

**User response:** Contact IBM Software Support. Have available the listing that contains this message.

**GCL03042E**  
**GCL03105E**  
**GCL03105W**  
**GCL03099E**  
**GCL03041E**  
**GCL03043E**  
**GCL03104E**  
**GCL03108E**  
**GCL03122E**

**GCL03042E**  
NO MATCH FOUND FOR DSS TASK NUMBER: *nnn*

**Explanation:** The DSS task number was not matched to any of the volume pairs for this task. Processing terminates.

**User response:** Contact IBM Software Support. Have available the listing that contains this message.

**GCL03043E**  
NO MATCH FOUND FOR TASK DD IN VOLUME PAIRS

**Explanation:** The copy task was dispatched, but, no volume pairs had been assigned to it. Processing terminates.

**User response:** Contact IBM Software Support. Have available the listing that contains this message.

**GCL03099E**  
NO MATCH FOUND FOR TASK DD IN VOLUME PAIRS

**Explanation:** An abend occurred for a copy task. Processing terminates.

**User response:** Contact IBM Software Support. Have available the listing that contains this message.

**GCL03104E**  
OPEN FAILED FOR DDNAME=ddname

**Explanation:** *ddname* was allocated for IMS Cloning Tool to use, but, the open for the file failed. Processing terminates.

**User response:** If unable to determine the reason the open failed, contact IBM Software Support. Have available the listing that contains this message.

**GCL03105E**  
ALLOCATION FAILED FOR DSN: datasetname

**Explanation:** Dynamic allocation for a data set failed. The associated z/OS messages are displayed. Processing terminates.

**User response:** If unable to determine the reason for the failure from the associated z/OS messages, Contact IBM Software Support. Have available the listing containing these messages.

**GCL03105W**  
DEALLOCATION FAILED FOR DDNAME: ddname

**Explanation:** Dynamic deallocation for a ddname failed. Processing continues.

**User response:** If unable to determine the reason for the failure from the associated z/OS messages, Contact IBM Software Support. Have available the listing containing these messages.

**GCL03108E**  
UNABLE TO LOAD PROGRAM: program name

**Explanation:** The indicated program name was not found. Processing terminates.

**User response:** Check that the job's //STEPLIB library is correct. If unable to resolve the problem, Contact IBM Software Support.

**GCL03131E**  
CAPTURE FOR UCB FAILED; UCB ADDRESS: nnnnnnnnn R15: nnnn
  TARGET VOLUME SERIAL: volser

**Explanation:** An attempt to use IOSCAPU to capture a UCB failed. Processing terminates.

**User response:** Contact IBM Software Support. Have available the listing that contains this message.

**GCL03132E**  
UNCAPTURE FOR UCB FAILED; UCB ADDRESS: nnnnnnnnn R15: nnnn
  TARGET VOLUME SERIAL: volser

**Explanation:** An attempt to use IOSCAPU to uncapture a UCB failed. Processing terminates.

**User response:** Contact IBM Software Support. Have available the listing that contains this message.
GCL03133E EXCP FAILED FOR DEVICE: mmmm
TARGET VOLSER: volser SYNAD TEXT: text

Explanation: An error occurred reading the volume label for an offline target device. Processing terminates.
User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL03134E VOLUME SERIAL FOR DEVICE: mmmm
IS existing volser; VOLUME SERIAL SHOULD BE: paired source volser

Explanation: The volume serial number for the indicated device is 'existing volser'. Based on the volume pairs specified, the expected volume serial number is 'paired source volser'. Processing terminates.
User response: Correct the volume pairs specified.

GCL03135E ICKDSF COMMAND FAILED FOR TARGET VOLSER: volser

Explanation: The invocation of ICKDSF to change a device label failed. The messages from ICKDSF are printed.
User response: If unable to determine the reason for the failure from the associated ICKDSF messages, Contact IBM Software Support. Have available the listing containing these messages.

GCL03136W IEEVARYD VARY ONLINE FAILED FOR TARGET VOLSER: volser INVALID PARAMETERS

Explanation: The parameters given to IEEVARYD are incorrect. Processing continues.
User response: Contact IBM Software Support. Have available the listing that contains this message. The indicated target volume serial will need to be manually varied online in order to proceed with IMS Cloning Tool RENAME processing.

GCL03137W IEEVARYD VARY ONLINE FAILED FOR TARGET VOLSER: volser DEVICE: mmmm RETURN CODE: mmmmmmm
REASON CODE: mmmmmmm

Explanation: The vary online for the indicated device failed. Processing continues.
User response: When the problem that caused the vary to fail is corrected, the indicated target volume serial will need to be manually varied online in order to proceed with IMS Cloning Tool RENAME processing.

GCL03138W IEEVARYD VARY ONLINE FAILED FOR TARGET VOLSER: volser DEVICE: mmmm R15: mmmmmmm

Explanation: The vary online for the indicated device failed. Processing continues.
User response: When the problem that caused the vary to fail is corrected, the indicated target volume serial will need to be manually varied online in order to proceed with IMS Cloning Tool RENAME processing.

GCL03139I DEVICE NUMBER: mmmm SUCCESSFULLY CHANGED TO VOLUME SERIAL: volser

Explanation: The label of the indicated device has been changed by ICKDSF to the indicated volume serial number.
User response: None.

GCL03140I VOLUME SERIAL: volser DEVICE NUMBER: mmmm IS NOW ONLINE

Explanation: The indicated target volume is now online to the current image.
User response: None.

GCL03141W DEVICE NUMBER: mmmm IS ONLINE AS TARGET VOLUME SERIAL: volser

Explanation: The indicated device is currently online with the target volume serial.
User response: None.

GCL03142W DEVICE NUMBER: mmmm IS ONLINE AS SOURCE VOLUME SERIAL: volser

Explanation: The indicated device is currently online with the source volume serial. The device is expected to be either offline or online with the target volume serial. Processing terminates.
User response: The device should be taken offline and the command rerun.

GCL03143W DEVICE NUMBER: mmmm IS ONLINE AS SOURCE VOLUME SERIAL: volser

Explanation: The indicated device is currently online with a volume serial that is neither the source or target volume serial. The device is expected to have a volume serial that is either the source or target volume serial. Processing terminates.
User response: Verify the device has not been overlaid with the contents of the wrong volume.
GCL03145I  ALREADY CHANGED TO
TARGET VOLUME SERIAL: volser
Explanation: The indicated device currently has the
desired target volume serial.
User response: None.

GCL03146I  DEVICE NUMBER: nnnn ICKDSF
FAILED; DEVICE MAY HAVE
ALREADY BEEN CLIPPED
Explanation: The clip of the indicated device by
ICKDSF has failed. This failure is probably caused by
the device having already been clipped.
User response: See the next IMS Cloning Tool
message in the listing to determine the appropriate
action.

GCL03148I  VOLUME SERIAL: vvvv
DEVICE NUMBER: nnnn NOT CLIPPED TO
VOLUME SERIAL: vvvv DUE TO
SIMULATION
Explanation: The clip of the indicated device was not
done because this run is a simulation.
User response: None.

GCL03501I  hh:mm:ss CHECK USERCATALOGS
STARTED - PROGRAM REV=r
hh:mm:ss CHECK USERCATALOGS
COMPLETED; RETURN CODE=nnn
Explanation: CHECK USERCATALOGS processing
message.
User response: None.

GCL03503I  DDNAME=ddname ALLOCATED FOR
DSN=datasetname
Explanation: 'ddname' has been dynamically allocated
for the indicated data set.
User response: None.

GCL03505W  DEALLOCATION FAILED FOR
DDNAME: ddname
Explanation: Dynamic deallocation for a ddname
failed. The associated z/OS messages are displayed.
Processing continues.
User response: None.

GCL03507W  ERROR CALLING GCL01HEX;
FUNCTION: function R15=nnnn
Explanation: An error occurred using GCL01HEX to
print a record. Processing continues.

User response: Report this message to IBM Software
Support.

GCL03559E  ALLOCATION FOR USERCATALOG
FAILED; DSN=bs dsname
Explanation: The BCS dsname was not successfully
allocated for further checking.
User response: Check that the user catalog have been
specified correctly.

GCL03560I  WAITING FOR SHARED CONTROL
OF BCS bs name
Explanation: The BCS is currently in use by another
job. The wait will continue until the BCS is no longer in
use by another job or the wait time limit is exceeded.
Processing continues.
User response: None.

GCL03561E  UNABLE TO ALLOCATE BCS: bs name;
WAIT TIME LIMIT EXCEEDED
Explanation: The wait for shared control of the BCS
has exceeded the wait time limit. Processing terminates.
User response: Change the scheduling of the jobs so
the IMS Cloning Tool job does not run when another
job has the BCS allocated. Or increase the wait time
limit so the IMS Cloning Tool job can wait longer for
the other job to terminate. The wait time limit is set by
the GCLINI parameter
CONCURRENT_EXECUTIONS_WAIT_TIME.

GCL03570E  SECURITY PRODUCT DENIED
ACCESS TO DSN: datasetname
Explanation: The dsn indicated is not authorized for
alter by your security product. If the RACF profile that
is associated is returned, it will be displayed.
Processing terminates.
User response: Change the dsn to one you can use, or,
have your security administrator give you 'ALTER'
authority to the data set.

GCL03571E  RACROUTE ERROR; SAF RC=nnnn
RACF RC=nnnn RACF REASON
CODE=nnnn
Explanation: An unexpected return code from SAF or
RACF occurred. Processing terminates.
User response: Contact IBM Software Support. Have
available the listing containing this message.
GCL04001I  hh:mm:ss BCS BACKUP STARTED - 
PROGRAM REV=rrr | hh:mm:ss BCS 
BACKUP COMPLETED; RETURN 
CODE=nnn

Explanation:  BCS BACKUP processing message.
User response:  None.

GCL04003I  DDNAME=ddname ALLOCATED FOR 
DSN=datasetname

Explanation:  'ddname' has been dynamically allocated 
for the indicated data set.
User response:  None.

GCL04004E  OPEN FAILED FOR DDNAME=ddname

Explanation:  'ddname' was allocated for IMS Cloning 
Tool to use, but, the open for the file failed. Processing 
terminates.
User response:  If unable to determine the reason the 
open failed, contact IBM Software Support. Have 
available the listing that contains this message.

GCL04005E  ALLOCATION FAILED FOR DSN: 
datasetname | ALLOCATION FAILED 
FOR DDNAME: ddname

Explanation:  Dynamic allocation for a data set or 
ddname failed. The associated z/OS messages are 
displayed. If an allocation failure occurs, processing 
terminates.
User response:  If unable to determine the reason for 
the failure from the associated z/OS messages, contact 
IBM Software Support. Have available the listing 
containing these messages.

GCL04005W  DEALLOCATION FAILED FOR 
DDNAME: ddname

Explanation:  Dynamic deallocation for a ddname 
failed. The associated z/OS messages are displayed. If 
a deallocation failure occurs, processing continues.
User response:  If unable to determine the reason for 
the failure from the associated z/OS messages, contact 
IBM Software Support. Have available the listing 
containing these messages.

GCL04007W  ERROR CALLING GCL01HEX; 
FUNCTION: function R15=nnnn

Explanation:  An error occurred using GCL01HEX to 
print a record. Processing continues.
User response:  Report this message to IBM Software 
Support.

GCL04008E  UNABLE TO LOAD PROGRAM: 
program name

Explanation:  The indicated program name was not 
found. Processing terminates.
User response:  Check that the job's //STEPLIB library 
is correct. If unable to resolve the problem, Contact 
IBM Software Support.

GCL04030E  AMSOPEN FAILED; R15=nnnn

Explanation:  An attempt was made to issue an 
IDCAMS command. Processing terminates.
User response:  Contact IBM Software Support. Have 
available the listing that contains this message.

GCL04031I  IDCAMS VERIFY FOR BCS WAS 
SUCCESSFUL

Explanation:  An IDCAMS VERIFY was issued for the 
BCS to be backed up. The VERIFY completed normally.
User response:  None.

GCL04034I  IDCAMS EXAMINE INDEXTEST FOR 
BCS WAS SUCCESSFUL

Explanation:  An IDCAMS EXAMINE INDEXTEST 
was issued for the BCS to be backed up. The 
EXAMINE completed normally.
User response:  None.

GCL04035I  NUMBER OF RECORDS READ FROM 
BCS: mmmmm

Explanation:  The indicated number of records were 
read from the BCS.
User response:  None.
<table>
<thead>
<tr>
<th>Code</th>
<th>Message</th>
<th>Explanation</th>
<th>User response</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCL04036I</td>
<td>NUMBER OF RECORDS WRITTEN TO BACKUP: nnnnnnn</td>
<td>The indicated number of records were written to the BCS backup file.</td>
<td>None</td>
</tr>
<tr>
<td>GCL04040W</td>
<td>BCS RECORD HAS BEEN SKIPPED; LENGTH MISMATCH; VSAM RECORD LENGTH: nnnnnnnnn BCS RECORD LENGTH: nnnnnnnnn</td>
<td>There is a mismatch in records lengths. VSAM READ returned a length that was different than the length indicated in the BCS record. The BCS record is printed, but, because of this length error, the BCS record is not written to the backup file.</td>
<td>None required. But, this does indicate a problem with the entry in the source usercatalog.</td>
</tr>
<tr>
<td>GCL04045E</td>
<td>ERROR ACCESSING BCS=bc dsname; LOC=llll</td>
<td>A VSAM error occurred accessing the indicated BCS. Processing terminates.</td>
<td>See associated GCLERRnnE error messages. If unable to resolve problem, Contact IBM Software Support. Have available the listing that contains these messages.</td>
</tr>
<tr>
<td>GCL04046E</td>
<td>ERROR CALLING GCL00045; FUNCTION: function R15=nnnn</td>
<td>An error occurred using GCL00045 to read a source catalog. Processing terminates.</td>
<td>See associated GCLnnnnE error messages. If unable to resolve problem, Contact IBM Software Support. Have available the listing that contains these messages.</td>
</tr>
<tr>
<td>GCL04047W</td>
<td>READING OF SOURCE USERCATALOG BYPASSED DUE TO SIMULATION AND SOURCE VOLUME BEING OFFLINE VOLSER=volser BCS=catalogname</td>
<td>The source catalog can not be read because this is a simulation run and the source volume is not online. For a simulation run the source catalog is read from the source volume. Processing continues.</td>
<td>None, unless a RENAME simulation is desired. To have RENAME SIM process with this catalogs entries either bring the source volume online for COPY SIM or run COPY without SIM.</td>
</tr>
<tr>
<td>GCL04050I</td>
<td>GCL00045 PROGRAM REV=x</td>
<td>Program GCL00045 displaying its versioning information.</td>
<td>None</td>
</tr>
<tr>
<td>GCL04051E</td>
<td>VOLSER xxx not found online</td>
<td>The specified catalog xxx was not found on the volume. Processing terminates.</td>
<td>Correct USERCATALOGS parameters to specify the source volser where the catalog resides.</td>
</tr>
<tr>
<td>GCL04051E</td>
<td>UNRECOGNIZED DEVICE TYPE: devicetype</td>
<td>The UCBTYP for to volume is not defined as dasd. Processing terminates.</td>
<td>Contact IBM Software Support. Have available the listing that contains this message.</td>
</tr>
</tbody>
</table>
GCL04517E  Error processing VVCNs: message
Explanation:  An error occurred during VVDS processing. Processing terminates.
User response:  Contact IBM Software Support. Have available the listing containing this message.

GCL04521E  UCBLOOK ERROR FOR VOLSER=volser RETURN CODE=nn REASON CODE=nn
Explanation:  An error occurred during UCBLOOK processing. Processing terminates.
User response:  Contact IBM Software Support. Have available the listing containing this message.

GCL04572I  Accessing catalog xxx on volume yyy
Explanation:  The identified catalog is being accessed.
User response:  None.

GCL04573I  Closing catalog xxx
Explanation:  The identified catalog is no longer being accessed.
User response:  None.

GCL04584E  XXSETR FAILED
Explanation:  Initialization of the catalog processor failed.
User response:  Contact IBM Software Support. Have available the listing that contains this message.

GCL04621E  APF AUTHORIZATION FAILURE.
Explanation:  The EXCP access routine requires APF authorization. Processing terminates.
User response:  The load library being used (or one in the concatenation) is not APF authorized. Ensure all specified load libraries are authorized on that LPAR.

GCL04624E  LDS DATASETS NOT SUPPORTED
Explanation:  An attempt was made to process a LDS using EXCPMODE. LDS support is not anticipated. Processing terminates.
User response:  Only process LDS using record mode technology, not EXCP. This message should not occur, as the invoking code should be aware of the EXCPMODE inability.

GCL04626W  DSN=component not found on volser VTOC.
Explanation:  The Format-1 DSCB for the VSAM component was not found on the VTOC. EXCP processing will attempt to use the data set extents carried in the VVR, instead. However, I/O errors may occur if the physical data on the tracks has been reused by another data set.
User response:  None. Informational warning message.

GCL04627E  ERROR CALLING GCL01VV1 TABLE=tablename FUNC=function R15=register15 R0=register0 LOC=location
Explanation:  An error occurred processing an internal table. Processing terminates.
User response:  Contact IBM Software Support.

GCL04628E  UCB CAPTURE FAILED FOR VOLUME volser, ADR=ucbaddress, RC='returncode', RSN='reasoncode'
Explanation:  An error occurred attempting to acquire the UCB for the specified volume. Processing terminates.
User response:  Contact IBM Software Support.

GCL04629E  VVR IS MISSING volumeinformationcell DSN=dsname
Explanation:  The VSAM Volume Record for the specified DSN was not located in the VVDS. Processing terminates.
User response:  Ensure the validity of VVDS by executing a DIAGNOSE. If the problem persists contact IBM Software Support, for assistance.

GCL04631E  DSN=dsname NOT FOUND - module(returncode - reason code)
Explanation:  An error occurred attempting to retrieve volume data from the catalog. Processing terminates.
User response:  Contact IBM Software Support.

GCL04633A  EBLOCK ERROR(code) volser CCHHR=cyl_head_record RDF_OFFSET=offset
Explanation:  An error occurred while deblocking a control interval. Processing continues, but certain affected logical records may be unrecoverable. The CCHHR value indicates the physical block that is in error on the DASD device. The physical contents of that track can be displayed using the ADRDSSU PRINT command.
GCL04634A  •  GCL04645E

ADRDSSU command example:

PRINT TRACKS (X'cccc',X'hh',X'cccc',X'hh')
INDY(volser)

User response:  Contact IBM Software Support.
Provide the sysout of the failing job, including the Joblog output. Tech Support may also request the ADRDSSU output for the PRINT TRACKS command.

GCL04634A  Invalid CIDF Data X'?????????? volser
               CCHHR=cccc_hhhh_rr

Explanation:  A control interval failed validation and could not be deblocked. Processing continues, but certain affected logical records may be unrecoverable. The CCHHR value indicates the physical block that is in error on the DASD device. The physical contents of that track can be displayed using the ADRDSSU PRINT command.

ADRDSSU command example:

PRINT TRACKS (X'cccc',X'hh',X'cccc',X'hh')
INDY(volser)

User response:  Contact IBM Software Support.
Provide the sysout of the failing job, including the Joblog output. Tech Support may also request the ADRDSSU output for the PRINT TRACKS command.

GCL04635A  SPANNED RECORD ERROR - volser
               CCHHR=cccc_hhhh_rr

Explanation:  While processing a spanned record, an error occurred. Spanned records, for all but ESDS, must be re-assembled by using the data on the index entry - specifically the sequence of segments is controlled by the FLP in the index entry. The Volser and CCHHR value represents the physical address of the beginning of the Control Interval that is in error. Processing continues.

User response:  Refer to other associated messages issued in conjunction with this error.

GCL04636W  TRUNCATED RECORD -
               RBA=X'xxxxxxxxxxxxx'

Explanation:  While processing a spanned record, an error occurred. Processing continues.

User response:  Refer to other associated messages issued in conjunction with this error.

GCL04638E  EXTENDED-FORMAT STRIPPED DATASETS NOT SUPPORTED.

Explanation:  An attempt was made to process a striped object in EXCPMODE. This is not supported. Processing terminates.

User response:  Contact IBM Software Support.

GCL04639E  EXTENDED-FORMAT COMPRESSED DATASETS NOT SUPPORTED.

Explanation:  An attempt was made to process a compressed object in EXCPMODE. This is not supported. Processing terminates.

User response:  Contact IBM Software Support.

GCL04640E  DATASET NOT FOUND OR NOT SPECIFIED

Explanation:  The EXCPMODE interface was incorrectly used. Processing terminates.

User response:  Contact IBM Software Support.

GCL04641E  DATASET NOT FOUND OR NOT SPECIFIED

Explanation:  The XXSET macro had one or more incorrectly specified arguments. Processing terminates.

User response:  Contact IBM Software Support.

GCL04642E  VOLSER NOT SPECIFIED

Explanation:  The XXSET macro had no VOLSER argument coded. Processing terminates.

User response:  Contact IBM Software Support.

GCL04643E  INVALID VOLSEQ VALUE SPECIFIED

Explanation:  The XXSET macro had an invalid SEQ argument coded. Processing terminates.

User response:  Contact IBM Software Support.

GCL04644E  DUPLICATE XXSET FOR component
               DSN=datasetname VOL=volser
               SEQ=sequence#

Explanation:  Multiple XXSET macros with the same arguments were processed. Processing terminates.

User response:  Contact IBM Software Support.

GCL04645E  First VOLSEQ Missing for Data Component DSN=comp.name

Explanation:  The first volume of a multi-volume set for the Data Component was not identified. Processing cannot continue because necessary information such as the C/I Size cannot be determined. Processing terminates.

User response:  Contact IBM Software Support.
Provide the sysout listing for the JOB execution, including the Job log. IBM Software Support may ask for additional listings from various utilities to identify the problem.
GCL04645W  First VOLSEQ Missing for Index Component DSN=comp.name

Explanation: The first volume of a multi-volume set for the Index Component was not identified. Processing continues without the Index Component to assist in reassembling spanned logical records. However, if any spanned records are encountered, deblocking errors are likely to occur.

User response: None. Informational warning message.

GCL04646W  First Data Component VVR not a "Z" record, DSN=comp.name

Explanation: The first volume's VVR for the Data Component was an unexpected type. Processing cannot continue because necessary information such as the C/I Size cannot be determined. Processing terminates.

User response: Contact IBM Software Support. Provide the sysout listing for the JOB execution, including the Job log. IBM Software Support may ask for additional listings from various utilities to identify the problem.

GCL04647W  EXCP Error - cmd descr volser cc_hh_r dsn

Explanation: An EXCP error occurred while reading the dataset. Information is extracted from the standard IBM SYNAD Message. It is likely that the data set has been physically corrupted. Processing continues.

User response: None. Informational warning message.

GCL04647W  EXCP Error - cmd descr volser cc_hh_r dsn

GCL04701E  GCL00047 Parameter Error. (parameter description)

Explanation: GCL00047 has detected invalid parameters from the calling routine. This is an internal error.

User response: Contact IBM Software Support. Have the execution output listing available.

GCL04702I  PGM GCL00047 invoked to perform ??????? function on VOL=volser UNIT=addr - PROGRAM REV=rrr

GCL04704E  DSPSERV CREATE Error RC=xx,RSN=yy, requesting nnnnn 4K Dataspace Blocks.

Explanation: Dataspace Creation failed with the above Return and Reason codes.

User response: Contact IBM Software Support. Have the execution output listing available.

GCL04705E  ALESERV ADD Error R15=xx Creating Dataspace Alet

Explanation: An error occurred while attempting to add an entry into the DU-AL for a private dataspace that has been created.

User response: Contact IBM Software Support. Have the execution output listing available.

GCL04706I  PGM GCL00047 returncode Processing Completed RC=xx timestamp

Explanation: Program GCL00047 processing is terminating with the above return-code.

User response: If RC=00, None. If the Return-Code is any non-zero value, then Contact IBM Software Support, and have the execution output listing available. There will be previous messages indicating the error causing the bad return code.

GCL04710E  GCL00047 ABENDED S-xxx | GCL00047 ABENDED U-xxxx

Explanation: Program GCL00047 has suffered an abend and is taking appropriate recovery and cleanup actions. The requested function appearing in the GCL04700I message has failed.

User response: Contact IBM Software Support. Have the execution listings and the SYSDUMP output available. Also, make note of the MVS operating system
GCL04720E • GCL04761E

release, and the type of hardware that was being accessed.

GCL04720E I/O Error Reading Volume Label on Device /xxxx
Explanation: Program GCL00047 was unable to read the volume label at the indicated device address.
User response: Determine if the device at the indicated address can be varied OFFLINE and ONLINE. The volume may be uninitialized. If the volume can be successfully mounted, then contact IBM Software Support. Have the execution output listing available. Also, make note of the MVS operating system release, and the type of hardware that was being accessed.

GCL04721E Validation on Device /xxxx failed.
Detected VOL=yyyyyy
Explanation: Program GCL00047 read the volume label at the indicated device address and found a volume serial number that was different than what was expected.
User response: Contact IBM Software Support. Have the execution output listing available.

GCL04733E DataSpace size is Insufficient.
Explanation: While preparing to DUMP the VTOC and/or VVDS of the volume indicated by the GCL04700I message, program GCL00047 was unable to allocate a private dataspace of a sufficient size.
User response: Contact IBM Software Support. Have the execution output listing available. Also, make note of the MVS operating system release.

GCL04747E Error Allocating ???? bytes for record ????? of ???? | Dataspace size ????-K is insufficient. | ????-K used up to this point.
Explanation: While preparing to RESTORE the VTOC and/or VVDS of the indicated volume, GCL00047 exceeded a predetermined dataspace size.
User response: Contact IBM Software Support. Have the execution output listing available. If possible, save the backup data set indicated by this message in case it is requested by IBM Software Support.

GCL04749E Buffer Capacity Exceeded. TYPE=????
Explanation: RESTORE processing has failed due to incorrect buffer size calculations. This is an internal error.
User response: Contact IBM Software Support, and have the execution output listing available. Also, make note of the MVS operating system release, and the type of hardware that was being accessed.

GCL04750E ** EXCP I/O ERROR processing the ???? ?????? ** | Track(CCHH) Address: cchh | Synad: <SYNAD error text>
Explanation: An uncorrectable error has occurred to the device being DUMPed or RESTORed while GCL00047 was performing I/O using the EXCP access method.
User response: Contact IBM Software Support, and have the execution output listing available. Also, make note of the MVS operating system release, and the type of hardware that was being accessed.

Explanation: While attempting to access the device, GCL00047 could not identify an available channel path to the device slated for DUMP or RESTORE processing.
User response: Verify that channel paths are available to device by issuing MVS display commands such as D M=DEV(xxxx) and D M=CHP(yy). If device pathing appears valid, then contact IBM Software Support, and have the execution output listing available. Also, make note of the MVS operating system release, and the type of hardware that was being accessed.

GCL04755E Storage Subsystem for Device ???? Does not Support ECKD CCWs.
Explanation: GCL00047 has detected an old technology DASD Control Unit that does not support hardware features that are minimally required by this. Such control units are typically used for supporting devices that pre-date 3380's. All control units for 3390's support ECKD transfer protocol.
User response: None. IMS Cloning Tool cannot be used for this device.

GCL04761E ** ERROR ** Requested VVDS Dataset Not Found. | ** ERROR ** Required VVDS Dataset Not Found.
Explanation: A VVDS was not found on the volume
that was being processed for dump. In addition, the volume was SMS managed, and/or contained VSAM data sets.

**User response:** Verify that the volume is usable. If not, then a volume restore is in order. In either case, contact IBM Software Support, and have the execution output listings available.

---

**GCL04761I**  
variable text

**Explanation:** Informational statistics regarding DUMP processing.

**User response:** None.

---

**GCL04761W**  
Note: Requested VVDS Dataset not in use.

**Explanation:** Informational warning regarding DUMP processing. The caller of GCL00047 specified a non-standard dataset name for the VVDS, which was not found on the volume. The correct data set name for the VVDS was found, and will be assumed as valid for DUMP processing.

**User response:** None. DUMP processing continues.

---

**GCL04807W**  
ERROR CALLING GCL01HEX; FUNCTION: function R15=nnnn

**Explanation:** An error occurred using GCL01HEX to print a record. Processing continues.

**User response:** Report this message to IBM Software Support.

---

**GCL04808E**  
UNABLE TO LOAD PROGRAM:  
program name

**Explanation:** The indicated program name was not found. Processing terminates.

**User response:** Check that the job's //STEPLIB library is correct. If unable to resolve the problem, Contact IBM Software Support.

---

**GCL04817E**  
UNABLE TO LOAD PROGRAM:  
program name

**Explanation:** The indicated program name was not found. Processing terminates.

**User response:** Check that the job’s //STEPLIB library is correct. If unable to resolve the problem, Contact IBM Software Support.

---

**GCL04818E**  
VOLSER: vvvvv IS NOT ONLINE

**Explanation:** The indicated volume is not online. Processing terminates.

**User response:** Bring the volume online.

---

**GCL04860E**  
UCBLOCK ERROR; RETURN  
CODE=nn reason code=nnn LOC=llll

**Explanation:** An error occurred during UCBLOOK processing. Processing terminates.

**User response:** Contact IBM Software Support. Have available the listing containing this message.

---

**GCL04861E**  
IOSCAPU function ERROR; RETURN  
CODE=nn reason code=nnn LOC=llll

**Explanation:** An attempt to use IOSCAPU to capture or uncapture a UCB failed. Processing terminates.

**User response:** Contact IBM Software Support. Have available the listing that contains this message.

---

**GCL05003I**  
DDNAME=ddname ALLOCATED FOR  
DSN=datasetname

**Explanation:** ‘ddname’ has been dynamically allocated for the indicated data set.

**User response:** None.

---

**GCL05004E**  
DDNAME MISSING: ddname

**Explanation:** ‘ddname’ was specified for IMS Cloning Tool to use, but, the ddname was not found in the JCL. Processing terminates.

**User response:** Compare the specification of the ddname with the JCL used for the command.

---

**GCL05005E**  
ALLOCATION FAILED FOR DSN:  
datasetname  |  ALLOCATION FAILED  
FOR DDNAME: ddname

**Explanation:** Dynamic allocation for a data set or ddname failed. The associated z/OS messages are displayed. If an allocation failure occurs, processing terminates.

**User response:** If unable to determine the reason for the failure from the associated z/OS messages, Contact IBM Software Support. Have available the listing containing these messages.

---

**GCL05005W**  
ALLOCATION FAILED FOR DSN:  
datasetname  |  ALLOCATION FAILED  
FOR DDNAME: ddname

**Explanation:** Dynamic deallocation for a ddname failed. The associated z/OS messages are displayed. If a deallocation failure occurs, processing continues.

**User response:** If unable to determine the reason for the failure from the associated z/OS messages, Contact IBM Software Support. Have available the listing containing these messages.

---
GCL05007W • GCL05056E

GCL05007W  ERROR CALLING GCL01HEX;
FUNCTION: function R15=nnnn

Explanation:  An error occurred using GCL01HEX to
print a record. Processing continues.

User response:  Report this message to IBM Software
Support.

GCL05008E  UNABLE TO LOAD PROGRAM:
program name

Explanation:  The indicated program name was not
found. Processing terminates.

User response:  Check that the job’s //STEPLIB library
is correct. If unable to resolve the problem, Contact
IBM Software Support.

GCL05009E  ERROR ACCESSING JOURNAL FILE;
LOC=lllll

Explanation:  A VSAM error occurred accessing the
journal file. Processing terminates.

User response:  See associated GCLVSEnnE error
messages. If unable to resolve problem, Contact IBM
Software Support. Have available the listing that
contains these messages.

GCL05011E  JOURNAL CONTROL RECORD NOT
FOUND | JOURNAL VOLUME PAIR
RECORD(S) NOT FOUND

Explanation:  An expected record was not found in the
IMS Cloning Tool journal file. Processing terminates.

User response:  Contact IBM Software Support. Have
available the listing that contains this message.

GCL05013E  RECORD COUNT IS ZERO; LOC=lllll
| COUNT MISMATCH; RECORDS
READ=rrrr CONTROL RECORD
COUNT=cccc

Explanation:  There was a problem with the journal
records needed to initiate the command. For the first
format, the journal control record indicates no entries
were added. For the second format, the number of
records read from the journal, rrrr, is not the same as
the number indicated in the journal control record, cccc.
Processing terminates.

User response:  Contact IBM Software Support. Have
available the listing that contains this message.

GCL05015E  THE COPY COMMAND WAS NOT
INITIATED BY A METHOD
REQUIRING THE COPYSYNC
COMMAND.

Explanation:  Only a copy initiated by PPRC requires
the COPYSYNC command. Processing terminates.

User response:  If PPRC was used to initiated the
volume copies, contact IBM Software Support. Have
available the listing that contains this message.

GCL05016E  COPY STATUS IS n

Explanation:  Only a copy initiated by PPRC requires
the COPYSYNC command. Processing terminates.

User response:  Contact IBM Software Support. Have
available the listing that contains this message.

GCL05031I  COPY STEP WAS A SIMULATION

Explanation:  The journal indicates that the COPY
command was a simulation. No volume
synchronization checking will be done.

User response:  None.

GCL05051E  REQUIRED KEYWORD MISSING:
keyword

Explanation:  A keyword required for processing has
been omitted. Processing terminates.

User response:  Specify the required keyword.

GCL05053E  KEYWORD: keyword MAXIMUM
LENGTH: nnn EXCEEDED

Explanation:  The operand entered for a keyword
exceeded the maximum length allowed for the
operand. nnn is the maximum allowed length for the
keyword. Processing terminates.

User response:  Correct the length of the keyword’s
operand.

GCL05054E  KEYWORD HAS MORE THAN 1
OPERAND; ONLY 1 ALLOWED:
keyword

Explanation:  Multiple operands were detected for a
keyword; only one operand is permitted. Processing
terminates.

User response:  Correct the keyword to use one
operand.

GCL05056E  NOTHING SPECIFIED FOR
KEYWORD: keyword

Explanation:  A keyword was entered without an
appropriate operand. Processing terminates.

User response:  Specify an appropriate operand for the
keyword.
GCL05058E  INVALID VALUE IN KEYWORD:
    keyword VALUE: value error text
Explanation:  The value in the keyword is invalid. 'error text' indicates the problem detected with the value. Processing terminates.
User response:  Correct the value specified in the keyword.

GCL05101I  hh:mm:ss PPRC COPYSYNC STARTED
    - PROGRAM REV=rrr hh:mm:ss
    PPRC COPYSYNC COMPLETED;
    RETURN CODE=nnn
Explanation:  PPRC COPYSYNC processing message.
User response:  None.

GCL05107W  ERROR CALLING GCL01HEX;
    FUNCTION: function R15=nnnn
Explanation:  An error occurred using GCL01HEX to print a record. Processing continues.
User response:  Report this message to IBM Software Support.

GCL05108E  ERROR CALLING GCL01HEX;
    FUNCTION: function R15=nnnn
Explanation:  An error occurred using GCL01HEX to print a record. Processing continues.
User response:  Report this message to IBM Software Support.

GCL05130I  VOLUME PAIRS STATUS
    source volser/target volser status
Explanation:  The status of each source/target volume serial pair is displayed.
User response:  None.

GCL05141W  TIME LIMIT EXCEEDED
Explanation:  The WAIT time for the command has been reached. Some volume pairs may still be in a copy relationship.
User response:  Rerun the COPYSYNC command with a higher WAIT time specified.

GCL05143I  ANTRQST LEVEL=nn
Explanation:  The level returned by ANTRQST REQUEST=LEVEL.
User response:  None.

GCL05144E  ANTRQST LEVEL NOT SUPPORTED
Explanation:  For PPRC support, the level must be one (1). The level returned by ANTRQST is not supported. Processing terminates.
User response:  Check with your system programmer for upgrading the system.

GCL05145E  system task NOT ACTIVE
Explanation:  An ANTRQST request failed because a system task is not active. Processing terminates.
User response:  Start the indicated system task.

GCL05146E  ANTRQST DID NOT RETURN ANY INFORMATION; RESTART system task SYSTEM TASK
Explanation:  The ANTRQST REQUEST=PQUERY did not receive information for a device. Processing terminates.
User response:  Restart the indicated system task.

GCL05147E  ANTRQST ERROR; request type
    RETURN CODE=nnnn X'hbbb' REASON CODE=nnnn X'hbbb' LOC=lllll
Explanation:  An ANTRQST request failed. 'request type' indicates if the macro was incorrect, or, if the Data Mover failed the request. The return code and reason code are displayed in decimal and hexadecimal format. 'lllll' is an internal indicator of where the problem occurred. Processing terminates.
User response:  Contact IBM Software Support. Have available the listing that contains this message.

GCL05150E  UNRECOGNIZED STATUS FROM PQUERY
Explanation:  The device status returned by PQUERY was not recognized. Processing terminates.
User response:  Contact IBM Software Support. Have available.

GCL05151I  VOLSER PAIR
    source volser/target volser COPY STILL IN PROGRESS, nnn%
    COMPLETED
Explanation:  PQUERY indicates the volumes are still in a copy relationship. nnn% indicates the percent of the copy that is completed.
User response:  None.
GCL05152I  VOLSER PAIR source volser/target volser
PDELPAIR ISSUED
Explanation: PDELPAIR has been issued for the volumes.
User response: None.

GCL05501I  hh:mm:ss VOLUME CHECK STARTED
- PROGRAM REV=rrr | hh:mm:ss
VOLUME CHECK COMPLETED;
RETURN CODE=nnn
Explanation: COPYCHECK command processing message.
User response: None.

GCL05503I  DDNAME=ddname ALLOCATED FOR DSN=datasetname
Explanation: 'ddname' has been dynamically allocated for the indicated data set.
User response: None.

GCL05504E  DDNAME MISSING: ddname
Explanation: 'ddname' was specified for IMS Cloning Tool to use. Processing terminates.
User response: Either correct the ddname specified, or, add the appropriate ddname to the job’s JCL.

GCL05505E  ALLOCATION FAILED FOR DSN=datasetname
Explanation: Dynamic allocation for a data set failed. The associated z/OS messages are displayed. If an allocation failure occurs, processing terminates.
User response: If unable to determine the reason for the failure from the associated z/OS messages, Contact IBM Software Support. Have available the listing containing these messages.

GCL05505W  DEALLOCATION FAILED FOR DDNAME: ddname
Explanation: Dynamic deallocation for a ddname failed. The associated z/OS messages are displayed. If a deallocation failure occurs, processing continues.
User response: If unable to determine the reason for the failure from the associated z/OS messages, Contact IBM Software Support. Have available the listing containing these messages.

GCL05507W  ERROR CALLING GCL01HEX;
FUNCTION: function R15=nnnn
Explanation: An error occurred using GCL01HEX to print a record. Processing continues.
User response: Report this message to IBM Software Support.

GCL05508E  UNABLE TO LOAD PROGRAM:
program name
Explanation: The indicated program name was not found. Processing terminates.
User response: Check that the job’s //STEPLIB library is correct. If unable to resolve the problem, Contact IBM Software Support.

GCL05509E  ERROR ACCESSING JOURNAL FILE;
LOC=lllll
Explanation: A VSAM error occurred accessing the journal file. Processing terminates.
User response: See associated GCLVSENSnnE error messages. If unable to resolve the problem, Contact IBM Software Support. Have available the listing that contains these messages.

GCL05511E  JOURNAL CONTROL RECORD NOT FOUND | JOURNAL VOLUME PAIR RECORD(S) NOT FOUND
Explanation: An expected record was not found in the IMS Cloning Tool journal file. Processing terminates.
User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL05512E  JOURNAL CONTROL RECORD IS WRONG VERSION | JOURNAL VOLP RECORD IS WRONG VERSION
Explanation: The journal record does not match the expected format. The record is printed. Processing terminates.
User response: Verify that different releases of IMS Cloning Tool have not been run using the same journal data set. If unable to resolve problem, contact IBM Software Support. Have available the listing that contains this message.
GCL05513E  RECORD COUNT IS ZERO; LOC=lllll
COUNT MISMATCH; RECORDS READ=rrrr CONTROL RECORD
COUNT=cccc LOC=lllll

Explanation: There was a problem with the journal records needed to initiate the volume check. For the first format, the journal control record indicate no entries were added. For the second format, the number of records read from the journal, rrrr, is not the same as the number indicated in the journal control record, cccc
Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL05515W  THE COPY PROCESS DID NOT COMPLETE SUCCESSFULLY

Explanation: The journal indicates that the COPY command did not complete successfully. Processing continues.

User response: None.

GCL05531I  COPY STEP WAS A SIMULATION

Explanation: The journal indicates that the COPY command was a simulation. No volume checking will be done.

User response: None.

GCL05540W  COPIES DONE OUTSIDE OF GCL; NO VOLUME CHECKING WILL BE DONE

Explanation: The volume pairing was not initiated by the IMS Cloning Tool COPY command.

User response: None.

GCL05550E  ERROR IN PARAMETERS FOR keyword

Explanation: The parameters for the indicated keyword were incorrect. Processing terminates.

User response: Check the keyword parameters. Mutually exclusive keywords may have been used.

GCL05551E  REQUIRED KEYWORD MISSING: keyword

Explanation: A keyword required for processing has been omitted. Processing terminates.

User response: Specify the required keyword.

GCL05553E  KEYWORD: keyword MAXIMUM LENGTH: nnn EXCEEDED

Explanation: The operand entered for a keyword exceeded the maximum length allowed for the operand. nnn is the maximum allowed length for the keyword. Processing terminates.

User response: Correct the length of the keyword’s operand.

GCL05554E  KEYWORD HAS MORE THAN 1 OPERAND; ONLY 1 ALLOWED:

keyword

Explanation: Multiple operands were detected for a keyword; only one operand is permitted. Processing terminates.

User response: Correct the keyword to use one operand.

GCL05555E  NOTHING SPECIFIED FOR KEYWORD: keyword

Explanation: A keyword was entered without an appropriate operand. Processing terminates.

User response: Specify an appropriate operand for the keyword.

GCL05556E  INVALID VALUE IN KEYWORD:

keyword VALUE: value error text

Explanation: The value in the keyword is invalid. 'error text' indicates the problem detected with the value. Processing terminates.

User response: Correct the value specified in the keyword.

GCL05558E  ERRORS IN KEYWORD:

keyword

Explanation: Parsing is checking the indicated keyword indicated in the command.

User response: None.

GCL05601I  hh:mm:ss VOLUME STATUS STARTED
- PROGRAM REV=rrr | hh:mm:ss
VOLUME STATUS COMPLETED;
RETURN CODE=nnn

Explanation: Volume status processing message.

User response: None.

GCL05607W  ERROR CALLING GCL01HEX;
FUNCTION: function R15=nnnn

Explanation: An error occurred using GCL01HEX to print a record. Processing continues.

User response: Report this message to IBM Software Support.
GCL05608E  UNABLE TO LOAD PROGRAM:

**Explanation:** The indicated program name was not found. Processing terminates.

**User response:** Check that the job's //STEPLIB library is correct. If unable to resolve the problem, Contact IBM Software Support.

---

GCL05630I  VOLUME PAIRS STATUS

**source volser/target volser status**

**Explanation:** The status of each source/target volume serial pair is displayed.

**User response:** None.

---

GCL05641W  TIME LIMIT EXCEEDED

**Explanation:** The WAIT time for the command has been reached. Some volume pairs may still be in a copy relationship.

**User response:** None required. If desired, rerun the COPYCHECK command with a higher WAIT time specified.

---

GCL05643I  ANTRQST LEVEL=nn

**Explanation:** The level returned by ANTRQST REQUEST=LEVEL.

**User response:** None.

---

GCL05644E  ANTRQST LEVEL NOT SUPPORTED; LEVEL=nn

**Explanation:** For FlashCopy support, the level must be greater than four (4). For SnapShot support, the level must be greater than one (1). For PPRC support, the level must be one (1). The level returned by ANTRQST is not supported. Processing terminates.

**User response:** Check with your system programmer for upgrading the system.

---

GCL05645E  ANTRQST DID NOT RETURN ANY INFORMATION; RESTART system task SYSTEM TASK

**Explanation:** The ANTRQST REQUEST=FCQUERY did not receive information for a device, or, REQUEST=PQUERY did not receive information for a device. Processing terminates.

**User response:** Restart the indicated system task.

---

GCL05647E  ANTRQST ERROR; request type

RETURN CODE=nnnn X'hhhh' REASON CODE=nnnn X'hhhh' LOC=lillll

**Explanation:** An ANTRQST request failed. 'request type' indicates if the macro was incorrect, or, if the Data Mover failed the request. The return code and reason code are displayed in decimal and hexadecimal format. 'lillll' is an internal indicator of where the problem occurred. Processing terminates.

**User response:** Contact IBM Software Support. Have available the listing that contains this message.

---

GCL05650E  UNRECOGNIZED STATUS FROM FCQUERY | UNRECOGNIZED STATUS FROM PQUERY

**Explanation:** The device status returned by the indicated query was not recognized. Processing terminates.

**User response:** Contact IBM Software Support. Have available the listing that contains this message.

---

GCL05651I  VOLSER PAIR source volser/target volser

COPY STILL IN PROGRESS, nnn% COMPLETED | VOLSER PAIR source volser/target volser COPY STILL IN PROGRESS, FCNOCOPY

**Explanation:** FCQUERY indicates the volumes are still in a copy relationship. If the background copy was initiated, nnn% will indicate the percent of the copy that is completed. If FCNOCOPY was used, no background copy was initiated and the second form of the message will be issued.

**User response:** None.

---

GCL05652I  VOLSER PAIR source volser/target volser

FCWITHDRAW ISSUED | VOLSER PAIR source volser/target volser PDELPAIR ISSUED

**Explanation:** FCWITHDRAW or PDELPAIR has been issued for the volumes.

**User response:** None.

---

GCL06001I  hh:mm:ss BACKINFO REFORMAT STARTED - PROGRAM REV=rrr | hh:mm:ss BACKINFO REFORMAT COMPLETED; RETURN CODE=nnn

**Explanation:** BACKINFO-REFORMAT processing message.

**User response:** None.
GCL06004E DDNAME MISSING: ddname | OPEN FAILED FOR DDNAME: ddname

Explanation: 'ddname' was specified for IMS Cloning Tool to use. Processing terminates.

User response: Either correct the ddname specified, or, add the appropriate ddname to the job's JCL.

GCL06006E ERROR CALLING GCL01VV1; FUNCTION: function R15=nnnn R0=nnnnnnnnn LOC=lllll

Explanation: A problem occurred using a dataspace. tttttttt is the name of the internal table. llill is the location where the error occurred. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message and the GCLINI parmib member that controls execution of IMS Cloning Tool.

GCL06007W ERROR CALLING GCL01HEX; FUNCTION: function R15=nnnn

Explanation: An error occurred using GCL01HEX to print a record. Processing continues.

User response: Report this message to IBM Software Support.

GCL06008E UNABLE TO LOAD PROGRAM: program name

Explanation: The indicated program name was not found. Processing terminates.

User response: Check that the job's //STEPLIB library is correct. If unable to resolve the problem, Contact IBM Software Support.

GCL06019E THE keyword DOES NOT HAVE A LRECL OF 80, DDNAME: ddname

Explanation: The data set allocated to the ddname does not have a LRECL of 80. The LRECL of this data set must be 80. Processing terminates.

User response: Change the data set allocated to the ddname to have a LRECL of 80.

GCL06020E UNKNOWN RECORD TYPE FOUND IN BACKINFO record

Explanation: An unknown record type was found in the backinfo data set. Processing terminates.

User response: Check that a correct backinfo data set is being used. If unable to resolve the problem, Contact IBM Software Support.

GCL06021E DUPLICATE type VOLSER FOUND IN BACKINFO; VOLSER: vvvvvv

Explanation: The indicated volser was found multiple times in the backinfo data set. Processing terminates.

User response: Check that a correct backinfo data set is being used. If unable to resolve the problem, Contact IBM Software Support.

GCL06022E DUPLICATE CATALOG DSN FOUND IN BACKINFO; DSN: dataset

Explanation: The indicated catalog DSN was found multiple times in the backinfo data set. Processing terminates.

User response: Check that a correct backinfo data set is being used. If unable to resolve the problem, Contact IBM Software Support.

GCL06023E NO VOLMAP RECORDS FOUND IN BACKINFO

Explanation: No VOLMAP type records were found in the backinfo data set. Processing terminates.

User response: Check that a correct backinfo data set is being used. If unable to resolve the problem, Contact IBM Software Support.

GCL06024E NO VOLMAP RECORDS FOUND IN BACKINFO

Explanation: No VOLMAP type records were found in the backinfo data set. Processing terminates.

User response: Check that a correct backinfo data set is being used. If unable to resolve the problem, Contact IBM Software Support.

GCL06025E NO VOLMAP RECORDS FOUND IN BACKINFO

Explanation: No VOLMAP type records were found in the backinfo data set. Processing terminates.

User response: Check that a correct backinfo data set is being used. If unable to resolve the problem, Contact IBM Software Support.

GCL06026E NO VOLMAP RECORDS FOUND IN BACKINFO

Explanation: No VOLMAP type records were found in the backinfo data set. Processing terminates.

User response: Check that a correct backinfo data set is being used. If unable to resolve the problem, Contact IBM Software Support.
GCL06027E  SPECIFIED BACKUP VOLSER: vvvvvv
IS ONLINE ON DEVN: dddd WHICH IS
NOT ITS SPECIFIED DEVN: dddd
Explanation: The indicated backup volume volser is
online but it is on a different device number than
specified in the backinfo data set. Processing
terminates.
User response: Check that a correct backinfo data set
is being used. If unable to resolve the problem, Contact
IBM Software Support.

GCL06028E  UNABLE TO GENERATE BACKUP
VOLSER FOR SOURCE VOLSER:
vvvvvv NO MATCHING VOLSER
RENAME MASK FOUND
Explanation: A backup volume volser needs to be
generated but there is no entry in the
VOLSER-RENAME-MASKS keyword that matches the
volser of its corresponding source volume. Processing
terminates.
User response: Add a entry to the
VOLSER-RENAME-MASKS keyword that matches the
indicated source volser.

GCL06029E  SPECIFIED BACKUP DEVN: dddd IS
NOT DEFINED TO Z/OS
Explanation: The device number specified for a
backup volume in the backinfo data set is not defined
to z/OS. Processing terminates.
User response: Check that the device number
specified is correct and the job is running on a z/OS
system where the device is defined.

GCL06030E  BACKUP VOLSER NOT SPECIFIED
FOR SOURCE VOLSER: vvvvvv
Explanation: A unique volser was not specified for a
backup volume in the backinfo data set and the
CLIP-IF-OFFLINE(Y) keyword was not used.
Processing terminates.
User response: Determine if the CLIP-IF-OFFLINE(Y)
keyword should be used or correct the backinfo data
set to have a unique volser for the backup volume.

GCL06031E  DUPLICATE BACKUP VOLSER: vvvvvv
FOUND FOR SOURCE VOLSER: vvvvvv
AND SOURCE VOLSER: vvvvvv
Explanation: The backinfo data set has two VOLMAP
records for different source volumes that have the same
backup volser specified. Processing terminates.
User response: Check that a correct backinfo data set
is being used. If unable to resolve the problem, Contact
IBM Software Support.

GCL06032E  SOURCE VOLSER: vvvvvv IS ALSO
USED AS A BACKUP VOLSER FOR
SOURCE VOLSER: vvvvvv
Explanation: The backinfo data set has a source volser
that is also used as a backup volser for a different
source volume. Processing terminates.
User response: Check that a correct backinfo data set
is being used. If unable to resolve the problem, Contact
IBM Software Support.

GCL06033E  VOLSER: vvvvvv FOR UCAT: usercatalog
\DOES NOT MATCH ANY SOURCE
VOLSER
Explanation: The backinfo data set has a UCAT record
for the indicated user catalog but the volser specified
for it is not a source volser in a VOLMAP record.
Processing terminates.
User response: Check that a correct backinfo data set
is being used. If unable to resolve the problem, Contact
IBM Software Support.

GCL06034E  USRCATALOGS ENTRY: usercatalog
\DOES NOT MATCH ANY UCAT
ENTRY FOUND IN BACKINFO
Explanation: The indicated user catalog was specified
in the USRCATALOGS keyword but the backinfo data
set does not have a UCAT entry for that user catalog.
Processing terminates.
User response: Check that a correct backinfo data set
is being used and the user catalog has been specified
correctly in the USRCATALOGS keyword.

GCL06035I  NO BACKUP VOLUMES NEED TO BE
CLIPPED
Explanation: All the backup volumes are already
online with their expected volser.
User response: None.

GCL06036E  NO BACKUP VOLSER SPECIFIED IN
BACKINFO FOR SOURCE VOLSER:
vvvvvv BUT ITS SPECIFIED DEVN:
dddd IS ONLINE WITH VOLSER:
vvvvvv
Explanation: The VOLMAP record in the backinfo
data set for source volser has no backup volume volser.
This condition means that the backup volume is
expected to be offline but the backup volume device
was found to be online with the indicated volser.
Processing terminates.
User response: Check that a correct backinfo data set
is being used. If this is a rerun of a prior failed
CLIP-IF-OFFLINE(Y) run specify the RESUME
keyword.
GCL06037I BACKUP VOLUME ON DEVN: dddd
APPEARS TO HAVE ALREADY BEEN CLIPPED TO VOLSER: vvvvv

Explanation: The CLIP-IF-OFFLINE(Y) and RESUME keywords have been specified and the indicated backup volume appears to have already been clipped to the indicated volser.

User response: None.

GCL06038I BACKUP VOLUME ON DEVN: dddd
WILL BE CLIPPED TO {GENERATED | SPECIFIED} VOLSER: vvvvv |
BACKUP VOLUME ON DEVN: dddd IS ALREADY ONLINE WITH SPECIFIED VOLSER: vvvvv

Explanation: The backup volume on the indicated device will clipped to the indicated generated or specified volser. OR The backup volume on the indicated device is already with the specified volser.

User response: None.

GCL06040E GCL00900 UNEXPECTED RESULTS;
error text

Explanation: An unexpected condition occurred calling program GCL00900. 'error text' has a description of the problem. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL06041E VOLUME PAIRS BEING USED: list of pairs

Explanation: The listed pairs were found in the backinfo data set.

User response: None.

GCL06042I VOLUME PAIRS BEING USED: list of pairs

Explanation: The listed pairs were found in the backinfo data set.

User response: None.

GCL06043I INTERNAL ERROR; LOC=llllll

Explanation: An internal error has occurred. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL06044I VOLUME PAIRS BEING USED: list of pairs

Explanation: The listed pairs were found in the backinfo data set.

User response: None.

GCL06045I VOLUME PAIRS BEING USED: list of pairs

Explanation: The listed pairs were found in the backinfo data set.

User response: None.

GCL06046I VOLUME PAIRS BEING USED: list of pairs

Explanation: The listed pairs were found in the backinfo data set.

User response: None.

GCL06047I VOLUME PAIRS BEING USED: list of pairs

Explanation: The listed pairs were found in the backinfo data set.

User response: None.

GCL06048I VOLUME PAIRS BEING USED: list of pairs

Explanation: The listed pairs were found in the backinfo data set.

User response: None.

GCL06049I VOLUME PAIRS BEING USED: list of pairs

Explanation: The listed pairs were found in the backinfo data set.

User response: None.

GCL06050E ERROR IN PARAMETERS FOR keyword

Explanation: The parameters for the indicated keyword were incorrect. Processing terminates.

User response: Check the keyword parameters. Mutually exclusive keywords may have been used.

GCL06051E REQUIRED KEYWORD MISSING:
keyword

Explanation: A keyword required for processing has been omitted. Processing terminates.

User response: Specify the required keyword.

GCL06052E THE SAME DDNAME HAS BEEN SPECIFIED FOR MULTIPLE KEYWORDS: ddname

Explanation: The indicated ddname has been specified in multiple keywords. The specified ddnames must all be different. Processing terminates.

User response: Specify the required keyword.

GCL06053E KEYWORD: keyword MAXIMUM LENGTH: nnn EXCEEDED

Explanation: The operand entered for a keyword exceeded the maximum length allowed for the operand. nnn is the maximum allowed length for the keyword. Processing terminates.

User response: Specify different ddnames in the keywords.

GCL06054E KEYWORD HAS MORE THAN 1 OPERAND; ONLY 1 ALLOWED:
keyword

Explanation: Multiple operands were detected for a keyword; only one operand is permitted. Processing terminates.

User response: Correct the keyword to use one operand.

GCL06055E NOTHING SPECIFIED FOR KEYWORD: keyword

Explanation: A keyword was entered without an appropriate operand. Processing terminates.

User response: Specify an appropriate operand for the keyword.

GCL06056E DUPLICATE FOUND; KEYWORD: keyword ENTRY: entry

Explanation: The indicated 'entry' for the keyword was previously specified. Processing terminates.

User response: Remove the duplicate entry.

GCL06057E INVALID VALUE IN KEYWORD:
keyword VALUE: value error text

Explanation: The value in the keyword is invalid. 'error text' indicates the problem detected with the value. Processing terminates.
**GCL06060E** • **GCL10005E**

**User response:** Correct the value specified in the keyword.

**GCL06060E** UCBLOOK ERROR; RETURN CODE=nn REASON CODE=nn LOC=llll

**Explanation:** An error occurred during UCBLOOK processing. Processing terminates.

**User response:** Contact IBM Software Support. Have available the listing containing this message.

**GCL06064E** INVALID VOLSER: volser IN KEYWORD: keyword

**Explanation:** The volume serial number specified is invalid. Processing terminates.

**User response:** Correct the volser specification.

**GCL06068E** UNMATCHED ENTRIES IN KEYWORD: keyword

**Explanation:** For USERCATALOGS, there must be a source BCS followed by a target BCS. An uneven number of BCS's was specified. For VOLSER-RENAME-MASKS, there must be a source mask followed by a backup mask. An uneven number of masks was specified. Processing terminates.

**User response:** Correct the keyword specification.

**GCL06081I** DSNS FOR KEYWORD: keyword list of dsns

**Explanation:** Parsing found the listed dsns for the keyword.

**User response:** None.

**GCL06082I** VOLSER RENAME MASK PAIRS FOR KEYWORD: keyword list of mask pairs

**Explanation:** Parsing found the listed mask pairs for the keyword.

**User response:** None.

**GCL06083W** VOLSER-RENAME-MASKS SPECIFIED BUT WILL NOT BE USED DUE TO CLIP-IF-OFFLINE(N)

**Explanation:** The VOLSER-RENAME-MASKS keyword has been specified but CLIP-IF-OFFLINE(N) has also been specified or defaulted to. The volser rename masks will not be used.

**User response:** None, or remove the VOLSER-RENAME-MASKS keyword, or use CLIP-IF-OFFLINE(Y).

**GCL06086I** VALIDATING KEYWORD: keyword

**Explanation:** Parsing is checking the indicated keyword in the command.

**User response:** None.

**GCL10001I** hh:mm:ss RENAME PROCESS STARTED - PROGRAM REV=rrr 1
hh:mm:ss RENAME PROCESS COMPLETED; RETURN CODE=nnn

**Explanation:** RENAME command processing message.

**User response:** None.

**GCL10003I** DDNAME=ddname ALLOCATED FOR DSN=datasetname

**Explanation:** 'ddname' has been dynamically allocated for the indicated data set.

**User response:** None.

**GCL10004E** DDNAME MISSING: ddname | OPEN FAILED FOR DDNAME: ddname

**Explanation:** 'ddname' was specified for IMS Cloning Tool to use. Processing terminates.

**User response:** Either correct the ddname specified, or, add the appropriate ddname to the job's JCL.

**GCL10005E** ALLOCATION FAILED FOR DSN: datasetname | ALLOCATION FAILED FOR DDNAME: ddname

**Explanation:** Dynamic allocation for a data set or ddname failed. The associated z/OS messages are displayed. If an allocation failure occurs, processing terminates.

**User response:** If unable to determine the reason for the failure from the associated z/OS messages, contact IBM Software Support. Have available the listing containing these messages.

**GCL10005E** DEALLOCATION FAILED FOR DDNAME: ddname

**Explanation:** Dynamic deallocation for a ddname failed. The associated z/OS messages are displayed. If a deallocation failure occurs, processing continues.

**User response:** If unable to determine the reason for the failure from the associated z/OS messages, contact IBM Software Support. Have available the listing containing these messages.
GCL10006E  ERROR CALLING GCL01VV1  
FUNCTION:  function  R15=nnnn  
R0=nnnnnnnn  LOC=lllll  

Explanation:  A problem occurred using a dataspace.  
tttttttt is the name of the internal table.  lllll is the 
location where the error occurred.  Processing 
terminates.  

User response:  Contact IBM Software Support.  Have 
available the listing that contains this message.  

GCL10007W  ERROR CALLING GCL01HEX;  
FUNCTION:  function  R15=nnnn  

Explanation:  An error occurred using GCL01HEX to 
print a record.  Processing continues.  

User response:  Report this message to IBM Software 
Support.  

GCL10008E  UNABLE TO LOAD PROGRAM:  
program name  

Explanation:  The indicated program name was not 
found.  Processing terminates.  

User response:  Check that the job's //STEPLIB library 
is correct.  If unable to resolve the problem, Contact 
IBM Software Support.  

GCL10009E  ERROR ACCESSING JOURNAL FILE;  
LOC=lllll  

Explanation:  A VSAM error occurred accessing the 
journal file.  Processing terminates.  

User response:  See associated GCLVSEnnE error 
messages.  If unable to resolve problem, Contact IBM 
Software Support.  Have available the listing that 
contains these messages.  

GCL10010E  DUPLICATE JOURNAL ENTRY;  
LOC=lllll  

Explanation:  A duplicate record was detected. 
Processing terminates.  

User response:  Contact IBM Software Support.  Have 
available the listing that contains this message.  

GCL10011E  JOURNAL CONTROL RECORD NOT 
FOUND  |  JOURNAL CONTROL RECORD IS WRONG VERSION  |  
JOURNAL USER CATALOG RECORD(S) NOT FOUND  |  JOURNAL VOLUME PAIR RECORD(S) NOT FOUND  |  JOURNAL EXCLUDE RENAME MASK RECORD(S) NOT FOUND  

Explanation:  An expected record was not found in the 
IMS Cloning Tool journal file.  Processing terminates.  

User response:  Contact IBM Software Support.  Have 
available the listing that contains this message.  

GCL10013E  RECORD COUNT IS ZERO;  LOC=lllll  |  COUNT MISMATCH;  RECORDS 
READ=rrrr  CONTROL RECORD COUNT=cccc  

Explanation:  There was a problem with the journal 
records needed to initiate the command.  For the first 
format, the journal control record indicates no entries 
were added.  For the second format, the number of 
records read from the journal, rrrr, is not the same as 
the number indicated in the journal control record, cccc 
Processing terminates.  

User response:  Contact IBM Software Support.  Have 
available the listing that contains this message.  

GCL10015E  THE COPY PROCESS DID NOT 
COMPLETE SUCCESSFULLY  

Explanation:  The journal indicates that the COPY 
command did not complete successfully.  Processing 
terminates.  

User response:  Check that the COPY command has 
completed successfully before initiating the RENAME 
command.  

GCL10016I  COPY WAS A SIMULATION;  RENAME 
CHANGED TO SIMULATION  

Explanation:  The journal indicates that the COPY 
command was a simulation.  Processing continues, but, 
the RENAME will be run as a simulation.  

User response:  None required.  

GCL10017E  THE DDNAME IS EMPTY OR HAS 
BEEN DUMMIED,  DDNAME:  ddn  

Explanation:  No records were read from the ddnme 
specified for a keyword.  Processing terminates.  

User response:  Check that the DD has not been 
specified as 'DD DUMMY' or 'DD DSN=NULLFILE'. 
Check that the DSN specified in the ddn has been 
created successfully.  

GCL10019E  THE EXCLUDE-SRCNAME-MASKS-DDN 
DOES NOT HAVE A LRECL OF 80,  DDNAME:  ddn  

Explanation:  The data set allocated to the ddnme 
does not have a LRECL of 80.  The LRECL of this data 
set must be 80.  Processing terminates.  

User response:  Change the data set allocated to the 
ddname to have a LRECL of 80.  

Chapter 10. Reference: Messages  325
**GCL10020E**  SOURCE CATALOG BACKUP HAS NOT BEEN DONE

**Explanation:** The source catalogs have not been backed up. Processing terminates.

**User response:** Run UCATOPTIONS BACKUP to backup the source catalogs.

---

**GCL10040E**  ERROR ATTACHING DRIVER, PGM=program name 1 UNEXPECTED CONDITION, TASK NOT POSTED

**Explanation:** ERROR ATTACHING DRIVER, PGM=program name: The indicated program name was not found. Processing terminates. or

**Explanation:** UNEXPECTED CONDITION, TASK NOT POSTED: The program returned from a 'WAIT', but, had not been posted. Processing terminates.

**User response:** ERROR ATTACHING DRIVER, PGM=program name: Check that the job's //STEPLIB library is correct. If unable to resolve the problem, Contact IBM Software Support.

**User response:** UNEXPECTED CONDITION, TASK NOT POSTED: Contact IBM Software Support. Have available the listing that contains this message.

---

**GCL10041E**  GCL00900 UNEXPECTED RESULTS; error text

**Explanation:** An unexpected condition occurred calling program GCL00900. 'error text' has a description of the problem. Processing terminates.

**User response:** Contact IBM Software Support. Have available the listing that contains this message.

---

**GCL10042E**  RERUN NOT SPECIFIED AND PREVIOUS RUN WAS NOT A SIMULATION

**Explanation:** A RENAME was attempted without the RERUN parameter, but the journal indicates that a non-simulation RENAME has already been attempted.

**User response:** If 'SAFE' mode was used for the first RENAME, specify 'RERUN' for the RENAME command.

---

**GCL10043E**  VOLBKUP DSNAME MISMATCH: CURRENT DSN=current dsn in command PREVIOUS DSN=previous dsn used

**Explanation:** A RENAME with RERUN is pointing to a different data set for the volume backup file.

**User response:** Correct the data set name for the volume backup file in the JCL.

---

**GCL10044E**  RERUN WAS SPECIFIED AND PREVIOUS RUN WAS NOT SAFE

**Explanation:** A RENAME RERUN was attempted, but the journal indicates that a previous RENAME did not include the SAFE parameter.

**User response:** The COPY command will need to be run before initiating the RENAME command without the RERUN parameter.

---

**GCL10048I**  OPTIONS IN EFFECT FOR THIS EXECUTION: merged options

**Explanation:** Informational message indicating how RENAME will handle the options. The displayed options are derived from the INI and any overriding specifications in the command input.

**User response:** None.

---

**GCL10050E**  ERROR IN PARAMETERS FOR keyword

**Explanation:** The parameters for the indicated keyword were incorrect. Processing terminates.

**User response:** Check the keyword parameters. Mutually exclusive keywords may have been used.

---

**GCL10051E**  REQUIRED KEYWORD MISSING: keyword

**Explanation:** A keyword required for processing has been omitted. Processing terminates.

**User response:** Specify the required keyword.

---

**GCL10052E**  REQUIRED INI SECTION/TOKEN MISSING: SECTION=section TOKEN=token | REQUIRED INI VALUE MISSING FOR SECTION=section TOKEN=token | INVALID INI VALUE FOR SECTION=section TOKEN=token

**Explanation:** An error occurred validating the GCLINI parmlib member options. Processing terminates.

**User response:** Correct the GCLINI member in the IMS Cloning Tool PARMLIB data set.

---

**GCL10053E**  KEYWORD: keyword MAXIMUM LENGTH: nnn EXCEEDED

**Explanation:** The operand entered for a keyword exceeded the maximum length allowed for the operand. nnn is the maximum allowed length for the keyword. Processing terminates.

**User response:** Correct the length of the keyword's operand.
GCL10054E  KEYWORD HAS MORE THAN 1 OPERAND; ONLY 1 ALLOWED:

keyword

Explanation: Multiple operands were detected for a keyword; only one operand is permitted. Processing terminates.

User response: Correct the keyword to use one operand.

GCL10056E  NOTHING SPECIFIED FOR KEYWORD: keyword

Explanation: A keyword was entered without an appropriate operand. Processing terminates.

User response: Specify an appropriate operand for the keyword.

GCL10057E  DUPLICATE FOUND; KEYWORD:

keyword

ENTRY: entry

Explanation: The indicated 'entry' for the keyword was previously specified. Processing terminates.

User response: Remove the duplicate entry.

GCL10058E  INVALID VALUE IN KEYWORD:

keyword

VALUE: value error text

Explanation: The value in the keyword is invalid. 'error text' indicates the problem detected with the value. Processing terminates.

User response: Correct the value specified in the keyword.

GCL10059E  SMF IS NOT RECORDING THE SPECIFIED RECORD TYPE: mnn

Explanation: The SMF audit log has been requested but SMF is not recording the specified record type. Processing terminates.

User response: Correct the keyword specification to use a record type that SMF is recording or have SMF record the specified record type.

GCL10061E  GCL01SMF ERROR; RETURN CODE=nnnn LOC: lllllll INVALID smstype CLAS NAME: class entry

Explanation: An error occurred using GCL01SMF to verify the SMS class specified. lllllll is the internal location where the error occurred. smstype indicates DATA, MGMT, or, STOR. Processing terminates.

User response: Correct the indicated SMS class entry.

GCL10068E  UNPAIRED ENTRIES IN KEYWORD:

keyword

Explanation: The keyword requires pairs of entries. An odd number of entries was found. Processing terminates.

User response: Correct the keyword specification.

GCL10085I  DSNS FOR KEYWORD: keyword

PROCESSING SEQUENCE list of dsns number

Explanation: Parsing found the listed dsns for the keyword. The processing sequence number shows the order that the dsns were entered and will be the order used during processing.

User response: None.

GCL10086I  VALIDATING KEYWORD: keyword

Explanation: Parsing is checking the indicated keyword indicated in the command.

User response: None.

GCL11001I  hh:mm:ss VOLUME UPDATES STARTED - PROGRAM REV=rrr (** SIMULATION **) | hh:mm:ss VOLUME UPDATES COMPLETED; RETURN CODE=nnn

Explanation: VOLUME UPDATES processing message.

User response: None.

GCL11030I  VOLUME CONVERSION STARTED FOR source volume/target volume | VOLUME CONVERSION COMPLETED FOR source volume/target volume; RETURN CODE=nn DATA SETS=nnnnnn | VOLUME CONVERSION FAILED FOR source volume/target volume; RETURN CODE=nn DATA SETS=nnnnnn

Explanation: Volume processing information message. DATA SETS=nnnnnn indicates the number of format 1 dscb's renamed on the target volume.

User response: None, unless the message includes the word FAILED or the RETURN CODE= is greater than four (4). If so, check the sysout for that target volume for the error messages.
OPEN FAILED FOR DDNAME=ddname

Explanation: 'ddname' was allocated for IMS Cloning Tool to use, but the open for the file failed. Processing terminates.

User response: If unable to determine the reason the open failed, contact IBM Software Support. Have available the listing that contains this message.

ERROR CALLING GCL01VV1
FUNCTION: function
R15=nnnn
R0=nnnnnnnn
LOC=lll

Explanation: A problem occurred using a dataspace. tttttttt is the name of the internal table. llllll is the location where the error occurred. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message and the GCLINI parmlib member that controls execution of GCL.

ERROR CALLING GCL01HEX;
FUNCTION: function
R15=nnnn

Explanation: An error occurred using GCL01HEX to print a record. Processing continues.

User response: Report this message to IBM Software Support.

ERROR ACCESSING JOURNAL FILE;
LOC=llll

Explanation: A VSAM error occurred accessing the journal file. Processing terminates.

User response: See associated GCLVSEnnE error messages. If unable to resolve problem, Contact IBM Software Support. Have available the listing that contains these messages.

JOURNAL VOLUME PAIR RECORD NOT FOUND FOR source volume/target volume

Explanation: An expected record was not found in the IMS Cloning Tool journal file. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

VOLUME BACKUP FAILED FOR volser.
SEE SYSOUT DRSTATS FOR MORE INFORMATION

Explanation: An error occurred during SAFE mode attempting to backup a volume. Processing terminates.

User response: Check the DRSTATS for the error that occurred. If unable to correct the problem, Contact IBM Software Support.

VOLUME CONVERSION TOTAL DATA SETS: mmmmmmm

Explanation: Volume processing information message. The number is the total number of format 1 dscb's renamed on all target volumes.

User response: None.

VOLUME BACKUP STARTED FOR target volume | VOLUME BACKUP COMPLETED FOR target volume

Explanation: Volume processing information message. During 'SAFE' mode, the target volume's VTOC, VTOCIX, and VVDS are backed up before any changes occur.

User response: None.

VOLUME CONVERSION BYPASSED FOR source volume/target volume DUE TO PRIOR ERRORS

Explanation: Volume processing has not been done for the target volume due to errors that happened while processing another volume. The other volumes with errors can be determined from the prior messages: GCL11030I VOLUME CONVERSION FAILED FOR srcvol/gtvol

User response: Correct the cause for the errors that happened to the other volumes and do a RENAME RERUN if possible. If RENAME RERUN is not possible the COPY will have to be redone.

TOTAL BYTES WRITTEN TO VOLBKUP DDNAME=ddname;
mnmnmnm

Explanation: Volume processing information message. This shows the number of bytes that were written to the VOLBKUP file.

User response: None.

TARGET VOLUME volser IS AN EXTENDED ADDRESS VOLUME; ICKDSF WILL BE USED TO REBUILD THE VTOCIX

Explanation: The identified volume is an Extended Address Volume and VTOCIX_REBUILDER = MSC has been specified in the INI. For Extended Address Volumes ICKDSF will always be used to rebuild the VTOCIX.

User response: None.
GCL11040E • GCL1106E

GCL11040E  UNEXPECTED CONDITION; error text
Explanation:  An unexpected condition occurred while dispatching a volume task or while waiting for the completion of a volume task. Processing terminates.
User response:  Contact IBM Software Support. Have available the listing that contains this message.

GCL11041E  TARGET VOLUME target volume IS NOT IN A PROPER STATE FOR RENAME
Explanation:  The target volume is not in a proper state for RENAME processing. The volume may have been modified between COPY and RENAME which is not allowed. Processing terminates.
User response:  The COPY will need to be run again to put the target volume into the proper state for RENAME processing.

GCL11042W  UNEXPECTED CONDITION; error text
Explanation:  An unexpected condition occurred while dispatching a service task. Processing continues.
User response:  Contact IBM Software Support. Have available the listing that contains this message.

GCL11060E  ERROR DURING function FOR VOLSER=volume - RETURN CODE=nnnn REASON CODE=nnnn
Explanation:  An error occurred using IOSCAPU, UCBLOOK, or UCBPIN. Processing terminates.
User response:  A return code 4 from UCBLOOK may indicate the volser is offline. If unable to determine the cause of the error, contact IBM Software Support. Have available the listing containing this message.

GCL11089I  NOT ALL DATASETS HAVE BEEN RENAMED ON THE VOLUMES
Explanation:  An error occurred during volume rename processing that caused some data sets to not be renamed on a volume. Message GCL11030I will indicate which volume pair had an error.
User response:  Correct the cause of the error and rerun RENAME if possible.

GCL11101I  hh:mm:ss VOLUME UPDATE STARTED - PROGRAM REV=rrr (** SIMULATION ***) | hh:mm:ss VOLUME UPDATE COMPLETED; RETURN CODE=nnnn FIDSCB COUNT=nnnnnnnn
Explanation:  Individual VOLUME UPDATE processing message.
User response:  None.

GCL11102I  RENAMING VTOC ENTRIES ON VOLUME: target volume(** SIMULATION **) | RENAMING VTOCIX ENTRIES ON VOLUME: target volume (** SIMULATION **)
Explanation:  Individual VOLUME UPDATE processing messages.
User response:  None.

GCL11104E  OPEN FAILED FOR DDNAME=ddname
Explanation:  'ddname' was allocated for IMS Cloning Tool to use, but the open for the file failed. Processing terminates.
User response:  If unable to determine the reason the open failed, contact IBM Software Support. Have available the listing that contains this message.

GCL11105E  ALLOCATION FAILED FOR DDNAME: ddname
Explanation:  Dynamic allocation for a ddname failed. The associated z/OS messages are displayed. If an allocation failure occurs, processing terminates.
User response:  If unable to determine the reason for the failure from the associated z/OS messages, Contact IBM Software Support. Have available the listing containing these messages.

GCL11105W  DEALLOCATION FAILED FOR DDNAME: ddname
Explanation:  Dynamic deallocation for a ddname failed. The associated z/OS messages are displayed. If a deallocation failure occurs, processing continues.
User response:  If unable to determine the reason for the failure from the associated z/OS messages, Contact IBM Software Support. Have available the listing containing these messages.

GCL11106E  ERROR CALLING GCL01VV1 ttttttt FUNCTION: function R15=nnnn R0=nnnnnnnn LOC=llllll
Explanation:  A problem occurred using a dataspace. ttttttt is the name of the internal table. lllll is the location where the error occurred. Processing terminates.
User response:  Contact IBM Software Support. Have available the listing that contains this message and the GCLINI parmlib member that controls execution of GCL.
GCL11107W  ERROR CALLING GCL01HEX;  
FUNCTION: function R15=nnnn  

Explanation:  An error occurred using GCL01HEX to print a record. Processing continues.  
User response:  Report this message to IBM Software Support.

GCL11109E  ERROR ACCESSING JOURNAL FILE;  
LOC=llll  

Explanation:  A VSAM error occurred accessing the journal file. Processing terminates.  
User response:  See associated GCLVSEnnE error messages. If unable to resolve problem, Contact IBM Software Support. Have available the listing that contains these messages.

GCL11110W  VOLSER IN FORMAT 1 NOT IN VOLSER PAIRS: volser found DSN:  
datasetname  

Explanation:  The volume serial found in the format 1 dscb for the indicated data set is not in the volume pairs. Processing continues.  
User response:  This probably is a condition copied from the source volumes. If desired, correct the format 1 dscb on the source volume for the data set. (An incorrect volume serial in the format 1 dscb will not prevent accessing the data set.)

GCL11112W  DATA SET MATCHES NO RENAME MASK: datasetname (MATCHES EXCLUDE MASK)  

Explanation:  The indicated data set did not match any source rename mask. If the message includes (MATCHES EXCLUDE MASK) the data set matched an entry in the EXCLUDE-SRCNAME-MASKS keyword. Processing continues. Processing continues.  
User response:  None required.

GCL11114E  UNEXPECTED VALUE FOUND IN VVDS  

Explanation:  During rename of the SYS1.VVDS data set, something unexpected was found in the self-defining entry. The entry is printed. Processing terminates.  
User response:  Contact IBM Software Support. Have available the listing that contains this message.

GCL11115E  VOLUME VOLSER NOT EQUAL TO NEW VOLSER: volser in label  

Explanation:  During volume processing, the volume serial in the label does not match the target volume. Processing terminates.  
User response:  Contact IBM Software Support. Have available the listing that contains this message.

GCL11117E  RENAME WOULD CAUSE A DUPLICATE DSN IN VTOC: source dsn  
NEWNAME: target dsn  

Explanation:  The target dsn would result in a duplicate name in the VTOC. Processing terminates.  
User response:  Correct the RENAME-MASKS to prevent the creation of duplicate data set names.

GCL11120E  UNPOPULATED SECTION; VIR ENTRIES AVAILABLE  

Explanation:  An internal error occurred during VTOCIX processing.  
User response:  Contact IBM Software Support. Have available the listing that contains this message.

GCL11121E  EXPECTED VIXM ENTRY NOT FOUND  

Explanation:  An internal error occurred during VTOCIX processing.  
User response:  Contact IBM Software Support. Have available the listing that contains this message.

GCL11122E  EXPECTED VIB ENTRY NOT FOUND  

Explanation:  An internal error occurred during VTOCIX processing.  
User response:  Contact IBM Software Support. Have available the listing that contains this message.

GCL11123E  UNKNOWN RECORD TYPE FOUND IN VTOCIX  

Explanation:  An internal error occurred during VTOCIX processing.  
User response:  Contact IBM Software Support. Have available the listing that contains this message.

GCL11124E  UNABLE TO VALIDATE DCE FOR VOLUME: target volume  

Explanation:  The DCE fields for the target volume have not been set. Accessing the VTOC did not cause the DCE fields to be corrected.  
User response:  Contact IBM Software Support. Have available the listing that contains this message.
GCL1130E  RETURN CODE 8 SET FOR NOT RENAMED DATA SET(S) | RETURN CODE 8 SET FOR TEMPORARY DATA SET(S)

**Explanation:** A return code of 8 was requested for the indicated condition. Processing terminates.

**User response:** None required, unless a return code of 0 or 4 is desired for the condition. If a return code other than 8 is wanted, either change the GCLINI member in PARMLIB, or, override the return code in the RENAME command.

---

GCL1131I  RENAMED DATA SETS:

**Explanation:** A RENAME SIMULATE was requested. The data set names that are listed will be renamed on the target volume.

**User response:** None.

---

GCL1133I  EXCP FAILED; function | SYNAD TEXT: error text from SYNADAF

**Explanation:** An EXCP request failed. SYNADAF was invoked to help diagnose the problem. Processing terminates.

**User response:** Contact IBM Software Support. Have available the listing that contains this message.

---

GCL1134I  UNABLE TO RENAME DSN=source|datasetname USING MASK=target mask

**Explanation:** The new name of a data set will exceed 44 characters. Processing terminates.

**User response:** Correct the RENAME-MASKS specification.

---

GCL1135I  type VOLSER: volser IS EXTENDED ADDRESS VOLUME

**Explanation:** The indicated volser is an Extended Address Volume (EAV). Extended Address Volumes are not currently supported by GCL. Processing terminates.

**User response:** Exclude the volume from processing.

---

GCL1136I  ERROR DURING function FOR VOLSER=volume - RETURN CODE=nnnn REASON CODE=nnnn

**Explanation:** An error occurred using IOSCAPU, UCBLOOK, or UCBPIN. Processing terminates.

**User response:** A return code 4 from UCBLOOK may indicate the volser is offline. If unable to determine the cause of the error, contact IBM Software Support. Have available the listing containing this message.

---

GCL1137I  ERROR CALLING SMFWTM; R15=nnnn

**Explanation:** An error occurred using the SMFWTM macro. Processing terminates.

**User response:** If unable to determine the cause of the error, contact IBM Software Support. Have available the listing containing this message.

---

GCL11201I  hh:mm:ss VOLUME UPDATE COMPLETED; RETURN CODE=nnnn F1DSCB COUNT=nnnnnnnn F8DSCB COUNT=nnnnnnnn

**Explanation:** Individual VOLUME UPDATE processing message.

**User response:** None.

---

GCL11202I  RENAMING VTOC ENTRIES ON VOLUME: target volume (** SIMULATION **)

**Explanation:** Individual VOLUME UPDATE processing message.

**User response:** None.

---

GCL11203I  DDNAME=ddname ALLOCATED FOR DSN=datasetname

**Explanation:** 'ddname' has been dynamically allocated for the indicated data set.

**User response:** None.

---

GCL11204I  OPEN FAILED FOR DDNAME=ddname

**Explanation:** 'ddname' was allocated for IMS Cloning Tool to use, but the open for the file failed. Processing terminates.

**User response:** If unable to determine the reason the open failed, contact IBM Software Support. Have available the listing that contains this message.

---

GCL11205E  ALLOCATION FAILED FOR DSN=datasetname | ALLOCATION FAILED FOR DDNAME=ddname

**Explanation:** Dynamic allocation for a data set or ddname failed. The associated z/OS messages are displayed. If an allocation failure occurs, processing terminates.

**User response:** If unable to determine the reason for the failure from the associated z/OS messages, Contact IBM Software Support. Have available the listing containing these messages.
GCL11205W  ALLOCATION FAILED FOR DSN:  
datasetname

Explanation:  Dynamic deallocation for a ddname failed. The associated z/OS messages are displayed. If a deallocation failure occurs, processing continues.

User response:  If unable to determine the reason for the failure from the associated z/OS messages, Contact IBM Software Support. Have available the listing containing these messages.

GCL11206E  ERROR CALLING GCL01VV1  tttttt
FUNCTION:  function  R15=nnnn
R0=nnnnnnnnn  LOC=lllll

Explanation:  A problem occurred using a dataspace. tttttttt is the name of the internal table. lllll is the location where the error occurred. Processing terminates.

User response:  Contact IBM Software Support. Have available the listing that contains this message and the GCLINI parmlib member that controls execution of GCL.

GCL11207W  ERROR CALLING GCL01HEX;
FUNCTION:  function  R15=nnnn

Explanation:  An error occurred using GCL01HEX to print a record. Processing continues.

User response:  Report this message to IBM Software Support.

GCL11209E  ERROR ACCESSING JOURNAL FILE;
LOC=lllll

Explanation:  A VSAM error occurred accessing the journal file. Processing terminates.

User response:  See associated GCLVSEnnE error messages. If unable to resolve problem, Contact IBM Software Support. Have available the listing that contains these messages.

GCL11210W  VOLSER IN FORMAT 1 NOT IN VOLSER PAIRS:  volser found DSN:
datasetname

Explanation:  The volume serial found in the format 1 dscb for the indicated data set is not in the volume pairs. Processing continues.

User response:  This probably is a condition copied from the source volumes. If desired, correct the format 1 dscb on the source volume for the data set. (An incorrect volume serial in the format 1 dscb will not prevent accessing the data set.)

GCL11212W  DATA SET MATCHES NO RENAME MASK:  datasetname  (MATCHES EXCLUDE MASK)

Explanation:  The indicated data set did not match any source rename mask. If the message includes (MATCHES EXCLUDE MASK) the data set matched an entry in the EXCLUDE-SRCNAME-MASKS keyword. Processing continues.

User response:  None required.

GCL11214E  UNEXPECTED VALUE FOUND IN VVDS

Explanation:  During rename of the SYS1.VVDS data set, something unexpected was found in the self-defining entry. The entry is printed. Processing terminates.

User response:  Contact IBM Software Support. Have available the listing that contains this message.

GCL11215E  UNEXPECTED VALUE FOUND IN VVDS

Explanation:  During volume processing, the volume serial in the label does not match the target volume. Processing terminates.

User response:  Contact IBM Software Support. Have available the listing that contains this message.

GCL11217E  RENAME WOULD CAUSE A DUPLICATE DSN IN VTOC:  source dsn NEWNAME:  target dsn

Explanation:  The target dsn would result in a duplicate name in the VTOC. Processing terminates.

User response:  Correct the RENAME-MASKS to prevent the creation of duplicate data set names.

GCL11230E  RETURN CODE 8 SET FOR NOT RENAMED DATA SET(S)  RETURN CODE 8 SET FOR TEMPORARY DATA SET(S)

Explanation:  A return code of 8 was requested for the indicated condition. Processing terminates.

User response:  None required, unless a return code of 0 or 4 is desired for the condition. If a return code other than 8 is wanted, either change the GCLINI member in PARMLIB, or, override the return code in the RENAME command.

GCL11231I  RENAMED DATA SETS:

Explanation:  A RENAME SIMULATE was requested. The data set names that are listed will be renamed on the target volume.
User response: None.

GCL11233E  EXCP FAILED: function  |  SYNAD TEXT:  
error text from SYNADAF

Explanation: An EXCP request failed. SYNADAF was invoked to help diagnose the problem. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL11235W  ICKDSF COMMAND FAILED FOR  
TARGET VOLSER: target volser

Explanation: The ICKDSF command failed. The messages from ICKDSF will be printed.

User response: If unable to determine the reason for the ICKDSF failure, Contact IBM Software Support. Have available the listing containing these messages.

GCL11243E  UNABLE TO RENAME DSN=source  
datasetname | USING MASK=target mask

Explanation: The new name of a data set will exceed 44 characters. Processing terminates.

User response: Correct the RENAME-MASKS specification.

GCL11257E  type VOLSER: volser IS EXTENDED  
ADDRESS VOLUME

Explanation: The indicated volser is an Extended Address Volume (EAV). Extended Address Volumes are not currently supported by GCL. Processing terminates.

User response: Exclude the volume from processing.

GCL11260E  ERROR DURING function FOR  
VOLSER=volume - RETURN  
CODE=nnnn REASON CODE=nnnn

Explanation: An error occurred using IOSCAPU, UCBLOOK, or UCBPIN. Processing terminates.

User response: A return code 4 from UCBLOOK may indicate the volser is offline. If unable to determine the cause of the error, contact IBM Software Support. Have available the listing containing this message.

GCL11261E  ERROR CALLING SMFWTM;  
R15=nnnn

Explanation: An error occurred using the SMFWTM macro. Processing terminates.

User response: If unable to determine the cause of the error, contact IBM Software Support. Have available the listing containing this message.

GCL11303I  DDNAME=ddname ALLOCATED FOR  
DSN=datasetname

Explanation: 'ddname' has been dynamically allocated for the indicated data set.

User response: None.

GCL11305E  ALLOCATION FAILED FOR DSN=  
datasetname

Explanation: Dynamic allocation for a data set failed. The associated z/OS messages are displayed. If an allocation failure occurs, processing terminates.

User response: If unable to determine the reason for the failure from the associated z/OS messages, contact IBM Software Support. Have available the listing containing these messages.

GCL11306W  DEALLOCATION FAILED FOR  
DDNAME: ddname

Explanation: Dynamic deallocation for a ddname failed. The associated z/OS messages are displayed. If a deallocation failure occurs, processing continues.

User response: If unable to determine the reason for the failure from the associated z/OS messages, contact IBM Software Support. Have available the listing containing these messages.

GCL11309E  ERROR CALLING GCL01VV1 tttttttt  
FUNCTION: function R15=nnnn  
R0=nnnnnnnn LOC=lllll

Explanation: A problem occurred using a dataspace. tttttttt is the name of the internal table. lllll is the location where the error occurred. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message and the GCLINI parmlib member that controls execution of GCL.

GCL11307W  ERROR CALLING GCL01HEX;  
FUNCTION: function R15=nnnn

Explanation: An error occurred using GCL01HEX to print a record. Processing continues.

User response: Report this message to IBM Software Support.

GCL11309E  ERROR ACCESSING JOURNAL FILE;  
LOC=lllll

Explanation: A VSAM error occurred accessing the journal file. Processing terminates.

User response: See associated GCLVSEnnE error messages. If unable to resolve the problem, Contact IBM Software Support.
IBM Software Support. Have available the listing that contains these messages.

**GCL11312W • GCL11349E**

GCL11312W  DATA SET MATCHES NO RENAME
MASK: datasetname (MATCHES EXCLUDE MASK)

Explanation: The indicated data set did not match any source rename mask. If the message includes (MATCHES EXCLUDE MASK) the data set matched an entry in the EXCLUDE-SRCNAME-MASKS keyword. Processing continues.

User response: None required.

GCL11330E  RETURN CODE 8 SET FOR NOT
RENAMED DATA SET(S) | RETURN CODE 8 SET FOR MISSING USER
CATALOG(S)

Explanation: A return code of 8 was requested for the indicated condition. Processing terminates.

User response: None required, unless a return code of 0 or 4 is desired for the condition. If a return code other than 8 is wanted, either change the GCLINI member in PARMLIB, or, override the return code in the RENAME command.

GCL11335I  SMS smstype CLAS COPIED FROM
SOURCE FOR VVDS ENTRY - dsname

Explanation: No default value was given for the smstype (DATA, MGMT, or, STOR). The indicated SMS class for the entry was copied from the source data set.

User response: None required, unless a specific class is desired.

GCL11340W  RENAMES NOT COMPLETE FOR
VVDS ENTRY - COMPONENT NAME=dsname

Explanation: A VVDS entry could not be completely renamed. Processing continues. The entry will be handled as a 'not renamed' data set.

User response: None required.

GCL11341W  RENAMES NOT DONE FOR VVDS
ENTRY - COMPONENT NAME=dsname

Explanation: A VVDS entry could not be renamed. Processing continues. The entry will be handled as a 'not renamed' data set.

User response: None required.

GCL11342W  USER CATALOG NOT IN CATALOG
LIST - COMPONENT NAME=dsname 1
BCS=user catalog

Explanation: A VVDS entry had a BCS backpointer which was not in the list of source user catalogs. Processing continues. The data set will be handled as a 'missing ucat' data set.

User response: None required.

GCL11343W  UNABLE TO RENAME DSN=target
USING MASK=target mask

Explanation: The new name of a data set will exceed 44 characters. Processing continues.

User response: None required, unless a specific class is desired.

GCL11344E  VVDS ENTRY NOT FOUND FOR
dsname

Explanation: An expected VVDS entry was not found for the dsname. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL11345E  ERROR ACCESSING VVDS, LOC=lllll

Explanation: An error occurred processing the VVDS on the volume. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL11346E  DSI CELL NOT FOUND IN VVDS
RECORD FOR dsname

Explanation: An expected VVDS cell was not found for the dsname. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL11347E  ERROR CALLING GCL00902; R15=nnnn
NEW DSN=target dsname

Explanation: An error occurred calling GCL00902 to obtain ACS information for the target data set name. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL11348E  VVDS WITH DSN=dataset NOT
FOUND ON VOLUME=volser

Explanation: The VVDS with name of data set was not found on volume volser. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.
GCL11350E  ERROR CALLING GCL01VE2;  
FUNCTION: function  
R15=nnnn  
R0=xxxx  
| VVDS DSN=dataset  VOL=volser  
RBA=xxxx  
Explaination: An error occurred using GCL01VE2 to read a VVDS. Processing terminates.  
User response: Contact IBM Software Support. Have available the listing that contains this message.  

GCL11351I  RENAMED CATALOG IS NOT USABLE: dsname  
Explaination: A catalog on a target volume was included in a RENAME-MASKS entry. The cloned catalog is not usable.  
User response: None.  

GCL11352E  UPDATED VVDS ENTRY EXCEEDS MAXIMUM ALLOWABLE LENGTH  
Explaination: An updated VVDS entry was found to be larger than the maximum allowable size. Processing terminates.  
User response: Contact IBM Software Support. Have available the listing that contains this message.  

GCL11353I  DUMP OF VVDS ENTRY: | DUMP OF ORIGINAL VVDS ENTRY: | DUMP OF UPDATED VVDS ENTRY:  
Explaination: A dump of the VVDS entry follows.  
User response: None.  

GCL11401I  hh:mm:ss VOLUME CLEANUP STARTED - PROGRAM REV=rrr (** SIMULATION **) hh:mm:ss VOLUME CLEANUP COMPLETED; RETURN CODE=nnnn  
Explaination: VOLUME CLEANUP processing message.  
User response: None.  

GCL11405E  ALLOCATION FAILED FOR VOLUME: volume serial  | DEALLOCATION FAILED FOR DDNAME: ddname  
Explaination: Dynamic allocation for a volume failed, or, dynamic deallocation for a ddname failed. The associated z/OS messages are displayed. If an allocation failure occurs, processing terminates. If a deallocation failure occurs, processing continues.  
User response: If unable to determine the reason for the failure from the associated z/OS messages, contact IBM Software Support. Have available the listing containing these messages.  

GCL11406E  ERROR CALLING GCL01VV1 ttttttt  
FUNCTION: function  
R15=nnnn  
R0=nnnnnnnn  
LOC=lllll  
Explaination: A problem occurred using a dataspace. tttttttt is the name of the internal table. lllll is the location where the error occurred. Processing terminates.  
User response: Contact IBM Software Support. Have available the listing that contains this message and the GCLINI parmlib member that controls execution of GCL.  

GCL11407W  ERROR CALLING GCL01HEX;  
FUNCTION: function  
R15=nnnn  
Explaination: An error occurred using GCL01HEX to print a record. Processing continues.  
User response: Report this message to IBM Software Support.  

GCL11411E  JOURNAL FILE IS EMPTY  
Explaination: An attempt was made to read the journal file. The file is empty. Processing terminates.  
User response: Verify that the journal file has been correctly specified.  

GCL11430W  DELETE FAILED. RETURN CODE=nnnn REASON CODE=nnnn  
VOLSER=targetvolser  
DSN=sourcedatasetname  
Explaination: An attempt was made to delete a data set from a target volume. The request to SSI failed. Processing continues.  
User response: The target volumes are usable. There are either renamed data sets or temporary data sets that were not deleted.  

GCL11435I  PROCESSING VOLSER=targetvolser  
Explaination: Volume cleanup informational message.  
User response: None.  

GCL11436I  DELETE WILL BE ISSUED FOR  
DSN=sourcedatasetname  
Explaination: During a RENAME SIMULATE run, informational message issued for data sets which will be deleted from the target volumes during the actual RENAME run.  
User response: None.
GCL11501I  VOLUME RESTORES STARTED - PROGRAM REV=rrr.

Explanation: VOLUME RESTORES processing message.

User response: None.

GCL11503I  DDNAME=ddname ALLOCATED FOR DSN=datasetname

Explanation: 'ddname' has been dynamically allocated for the indicated data set.

User response: None.

GCL11504E  OPEN FAILED FOR DDNAME=ddname

Explanation: 'ddname' was allocated for IMS Cloning Tool to use, but, the open for the file failed. Processing terminates.

User response: If unable to determine the reason the open failed, contact IBM Software Support. Have available the listing that contains this message.

GCL11505E  ALLOCATION FAILED FOR DSN: datasetname

Explanation: Dynamic allocation for a data set failed. The associated z/OS messages are displayed. If an allocation failure occurs, processing terminates.

User response: If unable to determine the reason for the failure from the associated z/OS messages, contact IBM Software Support. Have available the listing containing these messages.

GCL11506E  ERROR CALLING GCL01VV1 tttttt
  FUNCTION: function R15=nnnn
  R0=nnnnnnnn LOC=llll

Explanation: A problem occurred using a dataspace. tttttt is the name of the internal table. llll is the location where the error occurred. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message and the

GCLIN parmlib member that controls execution of IMS Cloning Tool.

GCL11507W  ERROR CALLING GCL01HEX;
  FUNCTION: function R15=nnnn

Explanation: An error occurred using GCL01HEX to print a record. Processing continues.

User response: Report this message to IBM Software Support.

GCL11523E  ERROR OPENING DDNAME DRSTATS

Explanation: An error occurred opening sysout file DRSTATS. Processing terminates.

User response: Check that the appropriate DD statement is in the JCL. If unable to determine the cause of the error, contact IBM Software Support. Have available the listing that contains this message.

GCL11524E  VOLUME RESTORE FAILED FOR volser.
  SEE SYSOUT DRSTATS FOR MORE INFORMATION

Explanation: An error occurred during RERUN mode attempting to restore a volume. Processing terminates.

User response: Check the DRSTATS for the error that occurred. If unable to correct the problem, Contact IBM Software Support.

GCL11531W  REVERTING TO USE VOLBKUP DIRECTLY

Explanation: An error occurred using a subset of the VOLBKUP file. The VOLBKUP file will be used rather than a subset for volume metadata restores. Processing continues.

User response: Contact IBM Software Support. Have available the listing containing this message.

GCL11532E  VOLUMES IN VOLBKUP NOT IN EXPECTED SEQUENCE

Explanation: An error occurred using the VOLBKUP file. The volume data in the VOLBKUP file was not in the expected sequence. Processing terminates.

User response: Contact IBM Software Support. Have available the listing containing this message.

GCL11560E  ERROR DURING function FOR VOLSER=volume - RETURN
  CODE=nnnn REASON CODE=nnnn

Explanation: An error occurred using IOSCAPU, UCBLOOK, or UCBPIN. Processing terminates.

User response: A return code 4 from UCBLOOK may
indicate the volser is offline. If unable to determine the cause of the error, contact IBM Software Support. Have available the listing containing this message.

GCL11601I hh:mm:ss CHECK TARGETS STARTED
- PROGRAM REV=rrr | hh:mm:ss
CHECK TARGETS COMPLETED;
RETURN CODE=nnn
Explanation: CHECK TARGETS processing message.
User response: None.

GCL11607W ERROR CALLING GCL01HEX;
FUNCTION: function R15=nnnn
Explanation: An error occurred using GCL01HEX to print a record. Processing continues.
User response: Report this message to IBM Software Support.

GCL11609E ERROR ACCESSING JOURNAL FILE;
LOC=lllll
Explanation: A VSAM error occurred accessing the journal file. Processing terminates.
User response: See associated GCLVSEmmE error messages. If unable to resolve problem, Contact IBM Software Support. Have available the listing that contains these messages.

GCL11611E JOURNAL VOLUME PAIR RECORD(S) NOT FOUND
Explanation: An expected record was not found in the IMS Cloning Tool journal file. Processing terminates.
User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL11660E UCBSCAN ERROR; RETURN CODE=nnn REASON CODE=nnn | UCBINFO ERROR; RETURN CODE=nnn REASON CODE=nnn
Explanation: An error occurred using UCBSCAN or UCBINFO. Processing terminates.
User response: Contact IBM Software Support. Have available the listing containing this message.

GCL11676E DEVICE TYPE AND MODEL NOT FOUND FOR volser
Explanation: IOSCDS for the volser did not return information about the target volume.
User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL11679E TARGET VOLSER volser WAS NOT FOUND ONLINE
Explanation: The indicated target volume serial was not found online on the system running RENAME. Processing terminates.
User response: Check that all the target volumes are online to the system which will be running RENAME.

GCL11681E VOLUME volser DEVICE NUMBER nnnn HAS NO chpid PATHS AVAILABLE
Explanation: The indicated device has no paths available for IMS Cloning Tool to use to access the volume. Processing terminates.
User response: Ensure that at least one chpid is online for each target device specified.

GCL11701I hh:mm:ss CATALOG VCLOSE STARTED - PROGRAM REV=rrr (**SIMULATION ***) | hh:mm:ss
CATALOG VCLOSE COMPLETED;
RETURN CODE=nnn
Explanation: CATALOG VCLOSE processing message.
User response: None.

GCL11703I DDNAME=ddname ALLOCATED FOR DSN=datasetname
Explanation: 'ddname' has been dynamically allocated for the indicated data set.
User response: None.

GCL11704E OPEN FAILED FOR DDNAME=ddname
Explanation: 'ddname' was allocated for IMS Cloning Tool to use, but the open for the file failed. Processing terminates.
User response: If unable to determine the reason the open failed, contact IBM Software Support. Have available the listing that contains this message.

GCL11705W ALLOCATION FAILED FOR DDNAME: ddname | DEALLOCATION FAILED FOR DDNAME: ddname
Explanation: Dynamic allocation for a data set failed, or, dynamic deallocation for a ddname failed. The associated z/OS messages are displayed. If an allocation failure occurs, processing continues without using CATALOG VCLOSE services. If a deallocation failure occurs, processing continues.
User response: If unable to determine the reason for the failure from the associated z/OS messages, contact
IBM Software Support. Have available the listing
containing these messages.

**GCL11707W** ERROR CALLING GCL01HEX;
FUNCTION= function R15=nnnn

**Explanation:** An error occurred using GCL01HEX to print a record. Processing continues.

**User response:** Report this message to IBM Software Support.

**GCL11720I** CONSOLE name ACQUIRED FOR
CATALOG VCLOSE COMMANDS

**Explanation:** A console session has been acquired so that RENAME can issue MODIFY CATALOG,VCLOSE commands.

**User response:** None.

**GCL11721I** CONSOLE name FREED

**Explanation:** The operator console has been freed.

**User response:** None.

**GCL11722W** UNABLE TO ACQUIRE A CONSOLE

**Explanation:** RENAME has failed to acquire a console for performing operator commands. Processing continues without using a console to perform operator commands.

**User response:** None.

**GCL11723I** CONSOLE name ALREADY IN USE,
WILL TRY ANOTHER

**Explanation:** The displayed name is already in use, probably from another copy of RENAME. RENAME will increment the number portion of the name and try again.

**User response:** None.

**GCL11724W** MCS ALERT RECEIVED; text

**Explanation:** An alert has been received for the console. Text describes the type of alert. Processing continues.

**User response:** None.

**GCL11727I** NON RESPONSE MDBS RECEIVED:
nnn

**Explanation:** Informational message that displays the number of received messages that were not a response to the command issued.

**User response:** None.

**GCL11731W** MCSOPER ERROR; FUNCTION=
function RC=nnnn RSN=nnnn
MCSOPMSG ERROR; FUNCTION=
function RC=nnnn RSN=nnnn

**Explanation:** An error occurred using MCSOPER or MCSOPMSG. Processing continues.

**User response:** Contact IBM Software Support. Have available the listing containing this message.

**GCL11740I** COMMAND: text

**Explanation:** Display operator command being issued.

**User response:** None.

**GCL11741W** WAIT TIME EXCEEDED FOR
COMMAND RESPONSE

**Explanation:** A response to the operator command was not received in a timely manner. Processing continues.

**User response:** Determine if the catalog address space (CAS) is not responding to modify commands or is unable to process them in a timely manner. If unable to determine the cause, report this message to IBM Software Support. Have available the listing containing this message.

**GCL12500I** PGM GCL00125 invoked to perform
 ???????? function on VOL=volser
UNIT=addr - PROGRAM REV=rrr

**Explanation:** Program GCL00125 is acknowledging a request to DUMP or RESTORE the VTOC and VVDS of the indicated volume.

**User response:** None.

**GCL12501E** GCL00125 Parameter Error. parameter description

**Explanation:** GCL00125 has detected invalid parameters from the calling routine. This is an internal error.

**User response:** Contact IBM Software Support. Have the execution output listing available.

**GCL12504E** DSPSERV CREATE Error
RC=xx,RSN=yy, requesting mnnn 4K Dataspace Blocks.

**Explanation:** Dataspace Creation failed with the above Return and Reason codes.

**User response:** Contact IBM Software Support. Have the execution output listing available.
Creating Dataspace Alet

Explanation: An error occurred while attempting to add an entry into the DU-AL for a private dataspace that has been created.

User response: Contact IBM Software Support. Have the execution output listing available.

Processing Completed RC=xx timestamp

Explanation: Program GCL00125 processing is terminating with the above return-code.

User response: If RC=00, None. If the Return-Code is any non-zero value, then Contact IBM Software Support, and have the execution output listing available. There will be previous messages indicating the error causing the bad return code.

ERROR CALLING GCL01VV1 tttttt FUNCTION: function R15=nnnn R0=nnnnnnnn LOC=lillll

Explanation: A problem occurred using a dataspace. ttttttt is the name of the internal table. llllll is the location where the error occurred. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message and the GCLINI parmlib member that controls execution of GCL.

ERROR CALLING GCL01HEX; FUNCTION: function R15=nnnn

Explanation: An error occurred using GCL01HEX to print a record. Processing continues.

User response: Report this message to IBM Software Support.

GCL00125 ABENDED S-xxx | GCL00125 ABENDED U-xxx

Explanation: Program GCL00125 has suffered an abend and is taking appropriate recovery and cleanup actions. The requested function appearing in the GCL12500I message has failed.

User response: Contact IBM Software Support. Have the execution listings and the SYSUDUMP output available. Also, make note of the MVS operating system release, and the type of hardware that was being accessed.

I/O Error Reading Volume Label on Device /xxxx

Explanation: Program GCL00125 was unable to read the volume label at the indicated device address.

User response: Determine if the device at the indicated address can be varied OFFLINE and ONLINE. The volume may be uninitialized. If the volume can be successfully mounted, then contact IBM Software Support. Have the execution output listing available. Also, make note of the MVS operating system release, and the type of hardware that was being accessed.

Validation on Device /xxxx failed. Detected VOL=yyyyyy

Explanation: Program GCL00125 read the volume label at the indicated device address and found a volume serial number that was different than what was expected.

User response: Contact IBM Software Support. Have the execution output listing available.

SYSVTOC Shr Reserve Required. | SYSZVVDS Shr Reserve Required. | Backup is Fuzzy **

Explanation: While preparing to DUMP the VTOC and/or VVDS of the volume indicated by the GCL12500I message, adequate RESERVE resources were not held. This is an internal error.

User response: Contact IBM Software Support. Have the execution output listing available.

DataSpace size is Insufficient.

Explanation: While preparing to DUMP the VTOC and/or VVDS of the volume indicated by the GCL12500I message, program GCL00125 was unable to allocate a private dataspace of a sufficient size.

User response: Contact IBM Software Support. Have the execution output listing available. Also, make note of the MVS operating system release.

Records Written Backup File

Explanation: Informational.

User response: None.

SYSVTOC Excl Reserve Required. | SYSZVVDS Excl Reserve Required. | Volume Restore Not Attempted **

Explanation: While preparing to RESTORE the VTOC and/or VVDS of the volume indicated by the GCL12500I message, adequate RESERVE resources were not held. This is an internal error.
Contact IBM Software Support. Have the execution output listing available.

** volser Volume Restore SUCCESSFUL.**

Explanation: Informational.

User response: None.

** volser Volume Restore FAILED ** ** WARNING: Volume volser may be UNUSABLE **

Explanation: RESTORE the VTOC and/or VVDS of the indicated volume was unsuccessful. If integrity of the volume is at risk, the second warning message is also issued.

User response: Contact IBM Software Support, and have the execution output listing available. There will be previous messages indicating the error causing the failure detection. Also, make note of the MVS operating system release, and the type of hardware that was being accessed.

Records Examined | Backup Data for VOL=yyyyyy not found

Explanation: While preparing to RESTORE the VTOC and/or VVDS of the indicated volume, GCL00125 could not locate the dump records in the sequential backup data set.

User response: Contact IBM Software Support. Have the execution output listing available. If possible, save the backup data set indicated by this message in case it is requested by IBM Software Support.

Record ID mmmmm Out of Sequence. | Incomplete Backup Data for VOL=wwwwww | EOF Encountered after Record ID mmmmm | Invalid Backup Version: nnn Expected: nnn

Explanation: While preparing to RESTORE the VTOC and/or VVDS of the indicated volume, GCL00125 has determined that the logical contents of the sequential backup data set are invalid. "Invalid Backup Version" can happen if the version or maintenance level has changed for module GCL00125 between the prior RENAME SAFE and this RENAME RERUN.

User response: Contact IBM Software Support. Have the execution output listing available. If possible, save the backup data set indicated by this message in case it is requested by IBM Software Support.

VOL=vvvvvv Dataspace Load Complete: timestamp

Explanation: Informational.

User response: None.

Error Allocating ????? bytes for record ????? of ??? | Dataspace size ???-K is insufficient. | ???-K used up to this point.

Explanation: While preparing to RESTORE the VTOC and/or VVDS of the indicated volume, GCL00125 exceeded a predetermined dataspace size.

User response: Contact IBM Software Support. Have the execution output listing available. If possible, save the backup data set indicated by this message in case it is requested by IBM Software Support.

Invalid Dump Record. ID ???????

Explanation: While preparing to RESTORE the VTOC and/or VVDS of the indicated volume, GCL00125 has determined that the logical contents of the sequential backup data set are invalid.

User response: Contact IBM Software Support. Have the execution output listing available. If possible, save the backup data set indicated by this message in case it is requested by IBM Software Support.

Buffer Capacity Exceeded. TYPE=????

Explanation: RESTORE processing has failed due to incorrect buffer size calculations. This is an internal error.

User response: Contact IBM Software Support, and have the execution output listing available. Also, make note of the MVS operating system release, and the type of hardware that was being accessed.

** EXCP I/O ERROR processing the ????????? ** | Track(CCHH) Address: cchh | Synad: <SYNAD error text>

Explanation: An uncorrectable error has occurred to the device being DUMPed or RESTORED while GCL00125 was performing I/O using the EXCP access method.

User response: Contact IBM Software Support, and have the execution output listing available. Also, make note of the MVS operating system release, and the type of hardware that was being accessed.

Storage Subsystem for Device ???? Does not Support ECKD CCWs.

Explanation: GCL00125 has detected an old technology DASD Control Unit that does not support hardware features that are minimally required by the IMS Cloning Tool product. Such control units are typically used for supporting devices that pre-date 3380's. All control units for 3390's support ECKD transfer protocol.
GCL12555E  Invalid track format
Explanation:  GCL00125 has detected a track on the DASD volume that does not have the expected format.
User response:  Verify that the DASD volume is in a valid copy relationship. This error might be caused by a volume copied outside of IMS Cloning Tool where the volume was not actually copied and the last copy of the volume was done with the FCNOCOPY option.

GCL12560I  Variable text
Explanation:  Informational Statistics.
User response:  None.

GCL12561I  Variable text
Explanation:  Informational statistics regarding DUMP processing.
User response:  None.

GCL12561W  Note: Requested VVDS Dataset not in use.
Explanation:  Informational warning regarding DUMP processing. The caller of GCL00125 specified a non-standard data set name for the VVDS, which was not found on the volume. The correct data set name for the VVDS was found, and will be assumed as valid for DUMP processing.
User response:  None. DUMP processing continues.

GCL12562I  Variable text
Explanation:  Informational statistics regarding RESTORE processing.
User response:  None.

GCL12562E  VTOC Location has Changed since the Backup was Taken | Volume Dump for ?????? is Unusable.
Explanation:  While attempting to RESTORE the VTOC and VVDS, program GCL00125 detected that the location of the VTOC does not match the CCHHR address at the time of the DUMP.
User response:  If the DUMP backup data set is current, then contact IBM Software Support, and have the execution output listing available.

GCL12578I  Variable text
Explanation:  Informational diagnostics.
User response:  None.
**GCL13006E • GCL13044E**

**GCL13006E**  ERROR CALLING GCL01VV1 
**FUNCTION: function**  
R15=nnnnn  R0=nnnnnnnnn  LOC=lllll  
**Explanation:** A problem occurred using a dataspace. 
**User response:** Contact IBM Software Support. Have available the listing that contains this message.

**GCL13007W**  ERROR CALLING GCL01HEX;  
**FUNCTION: function**  
R15=nnnnn  
**Explanation:** An error occurred using GCL01HEX to print a record. Processing continues.  
**User response:** Report this message to IBM Software Support.

**GCL13009E**  ERROR ACCESSING JOURNAL FILE;  
**LOC=lllll**  
**Explanation:** A VSAM error occurred accessing the journal file. Processing terminates.  
**User response:** See associated GCLVSEnnE error messages. If unable to resolve problem, Contact IBM Software Support. Have available the listing that contains these messages.

**GCL13011E**  JOURNAL USER CATALOG RECORD(S) NOT FOUND  
**Explanation:** An expected record was not found in the IMS Cloning Tool journal file. Processing terminates.  
**User response:** Contact IBM Software Support. Have available the listing that contains this message.

**GCL13012E**  UNABLE TO ESTABLISH ESTAEX;  
**R15=nnnnn  LOC=lllll**  
**Explanation:** A subroutine was not able to establish an estex environment. Processing terminates.  
**User response:** Contact IBM Software Support. Have available the listing that contains this message.

**GCL13031E**  SORT FOR SOURCE BCS RECORDS FAILED;  
**R15=nnnn; BCS=bc dsname**  
**Explanation:** The sort of the indicated BCS’s records failed. Processing terminates.  
**User response:** Correct the problem that caused SORT to fail. If unable to resolve the problem, Contact IBM Software Support. Have available the listing that contains this message.

**GCL13041W**  NO BCS ENTRIES MATCH RENAME CRITERIA FOR SOURCE BCS=BCS dsname  
**Explanation:** No BCS record keys matched the source dsname(s)/mask(s) specified. Processing continues.  
**User response:** Verify that the correct USERCATALOGS were specified in the COPY command and that the correct source names were specified in the RENAME-MASKS.

**GCL13042W**  DUPLICATE KEYS IN BACKUP;  
**RECORDS ARE THE SAME:** A record with a duplicate key was detected in the BCS BACKUP file. The record with the most recent creation date was retained and the record with the earlier creation date was dropped. Both records are printed. Processing continues.  
**User response:** None. If "DUPLICATE KEYS IN BACKUP; FIRST RECORD KEPT", examine the printed records. The dropped record may have the desired data.

**GCL13043E**  BCS BACKUPS DID NOT COMPLETE; CHECK COPY STEP  
**Explanation:** The journal indicates that the BCS backups did not complete. Processing terminates.  
**User response:** Check that the COPY command has completed successfully before initiating the RENAME command.

**GCL13044E**  UNEXPECTED EOF ON BCS BACKUP FILE;  
**BCS=bc dsname**  
**Explanation:** A logical ‘end of data’ condition is expected; a physical end of file was detected.  
**User response:** Check that the COPY command has completed successfully before initiating the RENAME command.
**GCL13045E NO BCS ENTRIES MATCH RENAME CRITERIA FOR ANY SOURCE BCS**

**Explanation:** No BCS record keys matched the source dsname(s)/mask(s) specified. Processing terminates.

**User response:** Verify that the correct USERCATALOGS were specified in the COPY command and that the correct source names were specified in the RENAME-MASKS.

---

**GCL13099E ABEND DURING BCS SORT**

**Explanation:** An abend occurred for a BCS SORT. Processing terminates.

**User response:** Contact IBM Software Support. Have available the listing that contains this message.

---

**GCL13501I hh:mm:ss BCS CLEANUP STARTED - PROGRAM REV=rrr (SIMULATION) | hh:mm:ss BCS CLEANUP COMPLETED; RETURN CODE=nnn**

**Explanation:** BCS CLEANUP processing message.

**User response:** None.

---

**GCL13503I DDNAME=ddname ALLOCATED FOR DSN=datasetname**

**Explanation:** ‘ddname’ has been dynamically allocated for the indicated data set.

**User response:** None.

---

**GCL13504E OPEN FAILED FOR DDNAME=BCSRECS**

**Explanation:** BCSRECS did not open successfully. Processing terminates.

**User response:** Check that //BCSRECS points to the correct data set. If unable to determine the reason for the failure, contact IBM Software Support. Have available the listing containing this message.

---

**GCL13505E ALLOCATION FAILED FOR DSN: datasetname**

**Explanation:** Dynamic allocation for a data set failed. The associated z/OS messages are displayed. If an allocation failure occurs, processing terminates.

**User response:** If unable to determine the reason for the failure from the associated z/OS messages, contact IBM Software Support. Have available the listing containing these messages.

---

**GCL13507W DEALLOCATION FAILED FOR DDNAME: ddname**

**Explanation:** Dynamic deallocation for a ddname failed. The associated z/OS messages are displayed. If a deallocation failure occurs, processing continues.

**User response:** If unable to determine the reason for the failure from the associated z/OS messages, contact IBM Software Support. Have available the listing containing these messages.

---

**GCL13509E ERROR CALLING GCL01HEX; FUNCTION: function R15=nnnn**

**Explanation:** An error occurred using GCL01HEX to print a record. Processing continues.

**User response:** Report this message to IBM Software Support.

---

**GCL13509E ERROR ACCESSING JOURNAL FILE; LOC=lllll**

**Explanation:** A VSAM error occurred accessing the journal file. Processing terminates.

**User response:** See associated GCLVSEnnE error messages. If unable to resolve problem, Contact IBM Software Support. Have available the listing that contains these messages.

---

**GCL13511E JOURNAL CONTROL RECORD NOT FOUND**

**Explanation:** An expected record was not found in the IMS Cloning Tool journal file. Processing terminates.

**User response:** Contact IBM Software Support. Have available the listing that contains this message.

---

**GCL13520W KEY OF ZEROS FOUND; ENTRY BYPASSED**

**Explanation:** An entry was found in BCSRECS with a key of zeros. The entry is bypassed. Processing continues.

**User response:** Contact IBM Software Support. Have available the listing that contains this message.

---

**GCL13521E KEY OF ZEROS RETURNED**

**Explanation:** The BCS entry with a key of zeros (binary) was returned; it was not requested. Processing terminates.

**User response:** Contact IBM Software Support. Have available the listing that contains this message.
GCL13522I  RECORDS DELETED FROM BCS(S), COUNT=nnn
Explanation: The indicated number of BCS records
have been removed from the target BCS(s).
User response: None.

GCL13523I  ENTRIES DELETED BY SVC26, COUNT=nnn
Explanation: The indicated number of BCS entries
have been removed from the target BCS(s) using
SVC26.
User response: None.

GCL13545E  ERROR ACCESSING BCS=bc dsname; LOC=lllll
Explanation: A VSAM error occurred accessing the
indicated BCS. Processing terminates.
User response: See associated GCL error messages. If
unable to resolve problem, Contact IBM Software
Support. Have available the listing that contains these
messages.

GCL13549E  DELETE FAILED; R15=nnn REASON
CODE=rrr; MODULE=mm DSN=dsname
Explanation: The SVC26 delete for a data set failed.
User response: Contact IBM Software Support. Have
available the listing that contains this message.

GCL13560I  WAITING FOR EXCLUSIVE CONTROL
OF BCS bc name
Explanation: The BCS is currently in use by another
job. The wait will continue until the BCS is no longer in
use by another job or the wait time limit is exceeded.
Processing continues.
User response: None.

GCL13561E  UNABLE TO ALLOCATE BCS: bc name;
WAIT TIME LIMIT EXCEEDED
Explanation: The wait for exclusive control of the BCS
has exceeded the wait time limit. Processing terminates.
User response: Change the scheduling of the jobs so
the IMS Cloning Tool job does not run when another
job has the BCS allocated. Or increase the wait time
limit so the IMS Cloning Tool job can wait longer for
the other job to terminate. The wait time limit is set by
the GCLINI parameter
CONCURRENT_EXECUTIONS_WAIT_TIME.

GCL13599E  ABEND DURING IMS Cloning Tool
PROCESSING
Explanation: An abend occurred during BCS cleanup.
Processing terminates.
User response: Determine the reason for the abend
and correct if possible. If unable to resolve problem,
Contact IBM Software Support. Have available the
listing that contains these messages.

GCL14001I  hh:mm:ss BCS UPDATES STARTED -
PROGRAM REV=rrr (** SIMULATION**)
| hh:mm:ss BCS UPDATES
COMPLETED; RETURN CODE=nnn
Explanation: BCS update processing message.
User response: None.

GCL14006E  ERROR CALLING GCL01VV1 ttttttt
FUNCTION: function R15=nnnn
R0=nnnnnnnn LOC=lllll
Explanation: A problem occurred using a dataspace.
ttttttt is the name of the internal table. lllll is the
location where the error occurred. Processing
terminates.
User response: Contact IBM Software Support. Have
available the listing that contains this message and the
GCLINI parmlib member that controls execution of
GCL.

GCL14007W  ERROR CALLING GCL01HEX;
FUNCTION: function R15=nnnn
Explanation: An error occurred using GCL01HEX to
print a record. Processing continues.
User response: Report this message to IBM Software
Support.

GCL14008E  UNABLE TO LOAD PROGRAM: program name
| UNABLE TO LINK TO
PROGRAM: program name
Explanation: The indicated program name was not
found. Processing terminates.
User response: Check that the job's /STEPLIB library
is correct. If unable to resolve the problem, contact IBM
Software Support.

GCL14009E  ERROR ACCESSING JOURNAL FILE;
LOC=lllll
Explanation: A VSAM error occurred accessing the
journal file. Processing terminates.
User response: See associated GCLVSEnnE error
messages. If unable to resolve problem, Contact IBM
Software Support. Have available the listing that contains these messages.

GCL14011E  JOURNAL CONTROL RECORD NOT FOUND

Explanation: An expected record was not found in the IMS Cloning Tool journal file. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL14030I  BCS UPDATE COMPLETED; RETURN CODE=nn SYSOUT DD=sysout ddname FOR TARGET BCS=bcs dsname | BCS UPDATE FAILED; RETURN CODE=nn SYSOUT DD=sysout ddname FOR TARGET BCS=bcs dsname

Explanation: The BCS update for the indicated target BCS has ended.

User response: None if the RETURN CODE is zero. If the RETURN CODE is not zero, check the indicated sysout file for warning or error messages related to the BCS update.

GCL14033W  BCS UPDATE BYPASSED FOR TARGET BCS=bcs dsname; error text SOURCE BCS=bcs dsname

Explanation: The BCS update for the indicated target/source BCS has not been done. The error text indicates the reason.

User response: None.

GCL14040E  UNEXPECTED CONDITION; error text

Explanation: An unexpected condition occurred while dispatching a BCS update task or while waiting for the completion of a BCS update task. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL14041E  SORT FOR BCS RECORDS DID NOT COMPLETE SUCCESSFULLY; BCS=bcs dsname

Explanation: The sort of the records for the indicated BCS was not successful. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL14089I  NOT ALL DATASETS HAVE BEEN CATALOGED

Explanation: An error occurred during BCS rename processing that caused some data sets to not be cataloged in a target catalog. Message GCL14030I will indicate which catalog had an error.

User response: Correct the cause of the error and rerun RENAME if possible.

GCL14011I  hh:mm:ss BCS UPDATE STARTED - PROGRAM REV=rrr (** SIMULATION **) | hh:mm:ss BCS UPDATE COMPLETED; RETURN CODE=n RECORD COUNT=nnn

Explanation: BCS UPDATE task processing message.

User response: None.

GCL14031I  DDNAME=ddname ALLOCATED FOR DSN=datasetname

Explanation: ‘ddname’ has been dynamically allocated for the indicated data set.

User response: None.

GCL14032E  OPEN FAILED FOR DDNAME=ddname

Explanation: ‘ddname’ was allocated for IMS Cloning Tool to use, but the open for the file failed. Processing terminates.

User response: If unable to determine the reason the open failed, contact IBM Software Support. Have available the listing containing these messages.

GCL14035E  ALLOCATION FAILED FOR DSN: datasetname | ALLOCATION FAILED FOR DDNAME: ddname

Explanation: Dynamic allocation for a data set or ddname failed. The associated z/OS messages are displayed. If an allocation failure occurs, processing terminates.

User response: If unable to determine the reason for the failure from the associated z/OS messages, contact IBM Software Support. Have available the listing containing these messages.

GCL14045W  DEALLOCATION FAILED FOR DDNAME: ddname

Explanation: Dynamic deallocation for a ddname failed. The associated z/OS messages are displayed. If a deallocation failure occurs, processing continues.

User response: If unable to determine the reason for the failure from the associated z/OS messages, contact IBM Software Support. Have available the listing containing these messages.
**GCL14106E**  
**ERROR CALLING GCL01VV1**  
**FUNCTION:** function R15=nnnn  
R0=nnnnnnnn  
**LOC=lllll**

**Explanation:** A problem occurred using a dataspace. ttttttt is the name of the internal table. lllll is the location where the error occurred. Processing terminates.

**User response:** Contact IBM Software Support. Have available the listing that contains this message and the GCLINI parmlib member that controls execution of GCL.

---

**GCL14107W**  
**ERROR CALLING GCL01HEX;**  
**FUNCTION:** function R15=nnnn

**Explanation:** An error occurred using GCL01HEX to print a record. Processing continues.

**User response:** Report this message to IBM Software Support.

---

**GCL14109E**  
**ERROR ACCESSING JOURNAL FILE;**  
**LOC=lllll**

**Explanation:** A VSAM error occurred accessing the journal file. Processing terminates.

**User response:** See associated GCLVSEnnE error messages. If unable to resolve problem, Contact IBM Software Support. Have available the listing that contains these messages.

---

**GCL14110E**  
**DUPLICATE JOURNAL ENTRY;**  
**LOC=lllll**

**Explanation:** A duplicate record was detected. Processing terminates.

**User response:** Contact IBM Software Support. Have available the listing that contains this message.

---

**GCL14111E**  
**JOURNAL USER CATALOG RECORD(S) NOT FOUND**

**Explanation:** An expected record was not found in the IMS Cloning Tool journal file. Processing terminates.

**User response:** Contact IBM Software Support. Have available the listing that contains this message.

---

**GCL14112E**  
**UNABLE TO ESTABLISH ESTAEX;**  
**R15=nnnn**

**Explanation:** The program was not able to establish an estaex environment. Processing terminates.

**User response:** Contact IBM Software Support. Have available the listing that contains this message.

---

**GCL14121I**  
**IDCAMs will be used for this BCS**

**Explanation:** Informational message. BCS extension records will cause program GCL00150 to invoke IDCAMS.

**User response:** None.

---

**GCL14123I**  
**EXPIRATION DATE IGNORED FOR GDG ENTRY; GDG BASE NAME=gdg**

**Explanation:** Informational message. The expiration date of the GDG base has been ignored.

**User response:** None.

---

**GCL14135I**  
**SMS smstypeCLAS COPIED FROM SOURCE FOR BCS ENTRY - dsname**

**Explanation:** No default value was given for the smstype (DATA, MGMT, or, STOR). The indicated SMS class for the entry was copied from the source data set.

**User response:** None required, unless a specific class is desired.

---

**GCL14140E**  
**UNEXPECTED CONDITION; error text**

**Explanation:** An unexpected condition occurred. 'error text' has a description of the problem. Processing terminates.

**User response:** Contact IBM Software Support. Have available the listing that contains this message.

---

**GCL14141I**  
**BCS ENTRY NOT ON SOURCE VOLUME SERIALS; BCS KEY=bcg**

**Explanation:** A BCS entry matched the rename masks, but, the entry in not catalogued on the source volume serials.

**User response:** None.

---

**GCL14142E**  
**BCS ENTRY PARTIALLY ON SOURCE VOLUME SERIALS; BCS KEY DSN=bcg**

**Explanation:** The indicated BCS entry is only partially on the source volume serials. Processing terminates.

**User response:** Ensure that data sets (VSAM spheres, GDSs associated with a base GDG) are wholly contained on the source volume serials.
GCL14142W  GDG HAS MIGRATED GDS ENTRIES; GDG BASE NAME=gdg base name 1
GDG HAS TAPE GDS ENTRIES; GDG BASE NAME=gdg base name

Explanation: The indicated BCS entry is only partially on the source volume serials. Processing continues, but the target GDSs which are migrated or on tape will not be accessible.

User response: Ensure that data sets (VSAM spheres, GDSs associated with a base GDG) are wholly contained on the source volume serials.

GCL14143E  UNABLE TO RENAME DSN=source
datasetname USING MASK=target rename
mask

Explanation: The new name of a data set will exceed 44 characters, or the new name of a GDG base will exceed 35 characters. Processing terminates.

User response: Correct the RENAME-MASKS specification.

GCL14144E  NO SOURCE DSN/MASK MATCH FOUND FOR DSN=datasetname ENTRY IS PART OF BCS KEY=bc
key name

Explanation: A BCS entry did not fully match the specified rename masks. Processing terminates.

User response: Ensure the RENAME-MASKS specification includes all spheres of VSAM components and all aliases for non-VSAM entries.

GCL14145E  ERROR ACCESSING BCS=bc dsname; LOC=l

Explanation: A VSAM error occurred accessing the indicated BCS. Processing terminates.

User response: See associated GCL error messages. If unable to resolve problem, Contact IBM Software Support. Have available the listing that contains these messages.

GCL14146W  BCS ENTRY SKIPPED; RECORD TYPE NOT SUPPORTED

Explanation: Probably, a 'U' type BCS entry was detected. The entry is printed. IMS Cloning Tool does not support renaming user catalogs on the target volume serials.

User response: None required.

GCL14147E  DUPLICATE BCS ENTRY | AN ENTRY FOR name ALREADY EXISTS IN THE TARGET BCS

Explanation: A duplicate record was detected when adding an entry to the target user catalog. The entry already exists in the target user catalog. The existing entry could be there from a prior run of GCL where BSCCLEAN was not used to remove the entry, or the RENAME-MASKS being used caused duplicate data set names to be created, or the existing entry could belong to a data set that was created prior to the IMS Cloning Tool run and is not on a target volume. The duplicate catalog entry is printed. Processing terminates.

User response: Ensure the RENAME-MASKS are not causing duplicate data set names to be created. If the RENAME-MASKS are not causing duplicate data set names, determine why the entry already exists in the target user catalog. To replace existing entries in the target user catalog use the RECATA
LOG(Y) keyword in the RENAME command.

GCL14148E  ERROR CALLING GCL00902; R15=nnnn NEW DSN=new

Explanation: An error occurred invoking the ACS routines for the indicated new data set name. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL14149E  FAILED TO POSITION IN BCSRECS

Explanation: An error occurred attempting to position to the correct entry to update in the BCSRECS file. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL14150W  GDG IS EMPTY; GDG BASE NAME=gdg base name1 ALL GDGS ARE MIGRATED; GDG BASE NAME=gdg base name

Explanation: An empty GDG was encountered and GDG-EMPTY(RETA
IN,RC(4)) was specified or all GDGs are migrated and GDG-ALL-
MIGRATED(RETA
IN,RC(4)) was specified.

User response: None required.

GCL14151E  UNEXPECTED END OF FILE ENCOUNTERED ON BCSRECS

Explanation: An error occurred attempting to read the entry to update in the BCSRECS file. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.
GCL14160I WAITING FOR EXCLUSIVE CONTROL OF BCS bcs name

Explanation: The BCS is currently in use by another job. The wait will continue until the BCS is no longer in use by another job or the wait time limit is exceeded. Processing continues.

User response: None.

GCL14161E UNABLE TO ALLOCATE BCS: bcs name; WAIT TIME LIMIT EXCEEDED

Explanation: The wait for exclusive control of the BCS has exceeded the wait time limit. Processing terminates.

User response: Change the scheduling of the jobs so the GCL job does not run when another job has the BCS allocated. Or increase the wait time limit so the GCL job can wait longer for the other job to terminate. The wait time limit is set by the GCLINI parameter CONCURRENT_EXECUTIONS_WAIT_TIME.

GCL14199E ABEND DURING BCS UPDATE

Explanation: An abend occurred for a BCS update task. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL14201I hh:mm:ss IDCAMS PROCESS STARTED - PROGRAM REV=rrr (** SIMULATION **) | hh:mm:ss IDCAMS PROCESS COMPLETED; RETURN CODE=nnn ENTRIES RECATEGORIZED=nnn

Explanation: BCS IDCAMS processing message.

User response: None.

GCL14204E OPEN FAILED FOR DDNAME=BCSRECS

Explanation: BCSRECS did not open successfully. Processing terminates.

User response: Check that //BCSRECS points to the correct data set. If unable to determine the reason for the failure, contact IBM Software Support. Have available the listing that contains this message.

GCL14204E ERROR WRITING TO BCSRECS; R15=nnnn

Explanation: An error occurred formatting the BCSRECS file. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL14207W ERROR CALLING GCL01HEX; FUNCTION: function R15=nnnn

Explanation: An error occurred using GCL01HEX to print a record. Processing continues.

User response: Report this message to IBM Software Support.

GCL15009E ERROR ACCESSING JOURNAL FILE; LOC=lllll

Explanation: A VSAM error occurred accessing the journal file. Processing terminates.

User response: See associated GCLVSEnnE error messages. If unable to resolve problem, Contact IBM Software Support. Have available the listing that contains these messages.
GCL15011E  JOURNAL CONTROL RECORD NOT FOUND! JOURNAL IDC RECORD(S) NOT FOUND

Explanation: An expected record was not found in the IMS Cloning Tool journal file. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL15030E  RETURN CODE 8 SET FOR ORPHANCATENTRY

Explanation: A return code of 8 was requested for the indicated condition. Processing terminates.

User response: None required, unless a return code of 0 or 4 is desired for the condition. If a return code other than 8 is wanted, either change the GCLINI member in PARMLIB, or, override the return code in the RENAME command.

GCL15031E  AMSOPEN FAILED; R15=nnnn

Explanation: An attempt was made to issue an IDCAMS command. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL15032I  NON-ZERO RETURNED BY IDCAMS; RC=nnnn

Explanation: An IDCAMS command failed with return code nnnn. The IDCAMS messages are displayed. Processing will continue if ORPHANCATENTRY return code is less than or equal to 4. Processing will terminate if ORPHAN-CATENTRY return code is greater than 4.

User response: None.

GCL15035E  DEVICE TYPE NOT RECOGNIZED; DEVICE=x'dddddddd'; SOURCE DSN=source datasetname

Explanation: The device type could not be converted to one for use by IDCAMS RECATALOG. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL15040E  UNEXPECTED CONDITION; error text

Explanation: An unexpected condition occurred. 'error text' has a description of the problem. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL15041E  MORE THAN nnn IDCAMS MESSAGES

Explanation: More than nnn messages were returned for an IDCAMS command. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL15045E  ERROR ACCESSING VVDS=vvds dsname; LOC=lllll

Explanation: A VSAM error occurred accessing the indicated VVDS. Processing terminates.

User response: See associated GCLERnnE error messages. If unable to resolve problem, Contact IBM Software Support. Have available the listing that contains these messages.

GCL15046W  ENTRY NOT FOUND IN VVDS; DSN=dsname

Explanation: A VSAM component was not found in the VVDS. The entry cannot be recataloged. Processing will continue if ORPHANCATENTRY return code is less than or equal to 4. Processing will terminate if ORPHANCATENTRY return code is greater than 4.

User response: None.

GCL15047W  ENTRY COULD NOT BE RECATALOGED; DSN=dsname

Explanation: A data set was not found on the target volume serials and cannot be recataloged. Processing will continue if ORPHANCATENTRY return code is less than or equal to 4. Processing will terminate if ORPHANCATENTRY return code is greater than 4.

User response: None.

GCL15048W  ENTRY SKIPPED DUE TO CLUSTER FAILURE; TYPE=type DSN=dsname

Explanation: A type AIX or PATH entry could not be recataloged because the associated base cluster could not be recataloged.

User response: None.

GCL15049E  DELETE FAILED; R15=nnn REASON CODE=rrr MODULE=mm DSN=dsname

Explanation: The SVC26 delete for a data set failed.

User response: Contact IBM Software Support. Have available the listing that contains this message.
GCL30008E  UNABLE TO LOAD PROGRAM:

program name

Explanation: The indicated program name was not found. Processing terminates.

User response: Check that the job's //STEPLIB library is correct. If unable to resolve the problem, Contact IBM Software Support.

GCL30001I  hh:mm:ss IMS INIT/TERM STARTED -
PROGRAM REV=rrr | hh:mm:ss IMS INIT/TERM COMPLETED; RETURN
CODE=nnnn

Explanation: IMS environment setup started/ended message.

User response: None.

GCL30009E  SERVICE MODULE: module name type
CALL FAILED, RC=nnnn

Explanation: The IMS environment setup/termination routine encountered an error with a service module. Processing terminates.

User response: Check for previous messages to see if there is a problem that can be corrected. If unable to resolve the problem, contact IBM Software Support.

GCL30010E  N/T call FOR token name FAILED,
RC=nnnn

Explanation: An attempt to CREATE/DELETE/RETRIEVE a name token entry failed. Processing terminates.

User response: Check for previous messages to see if there is a problem that can be corrected. If unable to resolve the problem, contact IBM Software Support.

GCL30012E  UNABLE TO ESTABLISH ESTAEX;
R15=nnnn

Explanation: The program was not able to establish an estaex environment. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL30501I  hh:mm:ss IMSSETLOG STARTED -
PROGRAM REV=rrr | hh:mm:ss IMSSETLOG COMPLETED; RETURN
CODE=nnnn

Explanation: IMSSETLOG command processing message.

User response: None.

GCL30505E  requesttype FAILED FOR DDNAME:

ddname

Explanation: A problem occurred when attempting a dynamic allocation request for the specified DD. Processing terminates.

User response: Report the problem to IBM Software Support. Have the output from the job which encountered this problem available.

GCL30505W  requesttype FAILED FOR DDNAME:

ddname

Explanation: A problem occurred when attempting a dynamic allocation request for the specified DD. Processing continues.

User response: Report this message to IBM Software Support. Have the output from the job which encountered this problem available.

GCL30507W  ERROR CALLING GCL01HEX;
FUNCTION: function R15=nnnn

Explanation: An error occurred using 01HEX to print a record. Processing continues.

User response: Report this message to IBM Software Support.

GCL30541I  COMMAND NOT EXECUTED DUE TO SIMULATION MODE

Explanation: Informational message indicating that an actual command was not issued because the SIMULATE keyword was specified.

User response: Verify that a simulation was intentional.

GCL30548I  OPTIONS IN EFFECT FOR THIS EXECUTION: merged options

Explanation: Informational message indicating how IMSSETLOG will handle the options. The displayed options are derived from the INI and any overriding specifications in the command input.

User response: None.

GCL30550E  ERROR IN PARAMETERS FOR keyword

Explanation: The parameters for the indicated keyword were incorrect. Processing terminates.

User response: Check the keyword parameters. Mutually exclusive keywords may have been used.
GCL30551E  REQUIRED KEYWORD MISSING:  keyword
Explanation:  A keyword required for processing has been omitted. Processing terminates.
User response:  Specify the required keyword.

GCL30560E  DDNAME MISSING:  ddbname
Explanation:  A required DD was not specified in the JCL. Processing terminates.
User response:  Add the require DD to the JCL.

GCL30578E  suspend/resume REQUEST FOR  ssid failed, RC=return code
Explanation:  A request to either suspend or resume activity for an IMS system failed. The IMSSETLOG command terminates with RC=8.
User response:  Report this message to IBM Software Support.

GCL30581E  ssid SUSPENDED/RESUMED BY  jobname
Explanation:  Informational message indicating that an active IMS system or job was either suspended or resumed by the specified job.
User response:  None.

GCL30589E  SUSPEND REQUEST HAS TIMED OUT
Explanation:  An attempt to suspend activity for the active IMS systems and batch jobs did not complete in the allowable time.
User response:  Check the status of the IMS systems that IMS Cloning Tool was attempting to suspend to make sure that they are still processing work. It may be that an IMS system is idle and if so, a `/SWI OLDS` command can be issued while the IMSSETLOG SUSPEND command is processing to allow the IMS system to be suspended.

GCL30590E  NEW IMS SYSTEM  ssid STARTED DURING SUSPEND PROCESSING
Explanation:  A new IMS system or batch job was started during the processing of suspending activity for IMS systems using a set of RECONs. The SUSPEND process is terminated and the IMSSETLOG command terminates with RC=8.
User response:  Retry the IMSSETLOG SUSPEND command in a time when new systems or batch jobs will not be initiated.

GCL30591E  UNABLE TO COMMUNICATE WITH ACTIVE RSENAME  rsename
Explanation:  A IMSSETLOG request to SUSPEND IMS activity detected an active IMS online environment with the RSENAME of `rsename` that is not able to communicate with. The IMSSETLOG command terminates with RC=8.
User response:  Verify that IMS Cloning Tool has been enabled in the control region for the RSENAME specified.

GCL30593E  ERROR CALLING name FUNCTION:  function R15=nnnn R0=nnnn
Explanation:  An error occurred using name for requested function. Processing terminates.
User response:  Report this message to IBM Software Support.

GCL31001I  hh:mm:ss IMSSTOP STARTED - PROGRAM REV=rrr | hh:mm:ss IMSSTOP COMPLETED; RETURN CODE=nnnn
Explanation:  IMSSTOP command processing message.
User response:  None.

GCL31007W  ERROR CALLING GCL01HEX; FUNCTION:  function R15=nnnn
Explanation:  An error occurred using GCL01HEX to print a record. Processing continues.
User response:  Please report this message to IBM Software Support.

GCL31008E  UNABLE TO LOAD PROGRAM:  program name
Explanation:  The indicated program name was not found. Processing terminates.
User response:  Check that the job's //STEPLIB library is correct. If unable to resolve the problem, Contact IBM Software Support.

GCL31021E  ERROR ISSUING IMS COMMAND, RC=nnnn RSN=nnnn
Explanation:  An unexpected error was encountered when attempting to issue an IMS command. Processing terminates.
User response:  Contact IBM Software Support. Have available the output from the job that received this message.
GCL31022E  IMS SUBSYSTEM ssid NOT ACTIVE/INITIALIZED
Explanation: An IMSSTOP command was processed but the target IMS subsystem is not active on the zOS image or has not completed initialization and restart.
User response: Verify that the job was executed on the same zOS image where the IMS subsystem is active and completed restart.

GCL31023I  CONNECTED TO IMS SUBSYSTEM: ssid RELEASE v.r
Explanation: Informational message indicating that the target IMS subsystem was located and the release of the IMS subsystem.
User response: None.

GCL31024W  command NOT ISSUED BECAUSE IMS IS NOT ACTIVE
Explanation: Warning message indicating that the command was bypassed because the IMS subsystem specified was not active on the zOS system.
User response: If you want the command to be issued, even when IMS is not active, you can specify IMS-ALREADY-STOPPED(RC(0)).

GCL31034E  USERID IS NOT AUTHORIZED TO ISSUE THE IMS COMMAND
Explanation: A request to issue a reply to an outstanding WTO or issue an operator command failed because of insufficient authority.
User response: Verify that the user who submitted the job has the proper authority.

GCL31035E  COMMAND FAILED, RC=nnnn
Explanation: An unexpected error was encountered from an attempt to issue an IMS command. Processing terminates.
User response: Contact IBM Software Support. Have available the output from the job that received this message.

GCL31036E  ssid DID NOT TERMINATE WITHIN THE WAIT TIME LIMIT
Explanation: After issuing an IMS CHECKPOINT command, the IMS subsystem did not terminate with the specified WAIT limit.
User response: View the IMS log to see why IMS did not terminate. Possibly alter the WAIT time limit specified to allow for the time for IMS to shutdown.

GCL31037I  task jobname HAS TERMINATED
Explanation: Informational message indicating that the target address space has ended.
User response: None.

GCL31038I  WAITING FOR xxxx TO TERMINATE
Explanation: Informational message indicating that the job is now waiting for the address space to terminate.
User response: None.

GCL31039W  parameter PARAMETER IS OVERWRITTEN
Explanation: The value specified for the parameter is being overridden by GCL. Processing continues with the new value.
User response: Check the parameters value specified.

GCL31040I  IMS COMMAND: command
Explanation: Informational message indicating that the job will issue the IMS command.
User response: None.

GCL31041I  COMMAND NOT EXECUTED DUE TO SIMULATION MODE
Explanation: Informational message indicating that an actual command was not issued because the SIMULATE keyword was specified.
User response: Verify that a simulation was desired.

GCL31048I  OPTIONS IN EFFECT FOR THIS EXECUTION: merged options
Explanation: Informational message indicating how COPY will handle the options. The displayed options are derived from the INI and any overriding specifications in the command input.
User response: None.

GCL31050E  ERROR IN PARAMETERS FOR keyword
Explanation: The parameters for the indicated keyword were incorrect. Processing terminates.
User response: Check the keyword parameters. Mutually exclusive keywords may have been used.

GCL31051E  REQUIRED KEYWORD MISSING: keyword
Explanation: A keyword required for processing has been omitted. Processing terminates.
User response: Specify the required keyword.

GCL31052E  REQUIRED INI SECTION/TOKEN
MISSING: SECTION=section
TOKEN=token 1 REQUIRED INI VALUE
MISSING FOR SECTION=section
TOKEN=token 1 INVALID INI VALUE
FOR SECTION=section  TOKEN=token
Explanation: An error occurred validating the GCLINI parmlib member options. Processing terminates.
User response: Correct the GCLINI member in the IMS Cloning Tool PARMLIB data set.

GCL31053E  KEYWORD: keyword
MAXIMUM LENGTH: nnn EXCEEDED  |  TOKEN:
MAXIMUM LENGTH: nnn EXCEEDED
Explanation: The operand entered for a keyword or INI token exceeded the maximum length allowed. nnn is the maximum allowed length. Processing terminates.
User response: Correct the length of the keyword's operand or the token's value.

GCL31054E  KEYWORD HAS MORE THAN 1 OPERAND; ONLY 1 ALLOWED:
keyword
Explanation: Multiple operands were detected for a keyword; only one operand is permitted. Processing terminates.
User response: Correct the keyword to use one operand.

GCL31055E  STORAGE GROUPS NOT SUPPORTED WITH DATA-MOVER PROGRAM
NONE
Explanation: The DATA-MOVER program was specified as 'NONE'. Storage group names/masks were specified for the source and/or target volume serials. Processing terminates.
User response: Correct the DATA-MOVER program specified, or, use keywords FROM-VOLSER/TO-VOLSER for the volume serials.

GCL31056E  NOTHING SPECIFIED FOR KEYWORD: keyword
Explanation: A keyword was entered without an appropriate operand. Processing terminates.
User response: Specify an appropriate operand for the keyword.

GCL31057E  DUPLICATE FOUND; KEYWORD: keyword
ENTRY: entry
Explanation: The indicated 'entry' for the keyword was previously specified. Processing terminates.
User response: Remove the duplicate entry.

GCL31058E  INVALID VALUE IN KEYWORD:
keyword
VALUE: value error text
Explanation: The value in the keyword is invalid. 'error text' indicates the problem detected with the value. Processing terminates.
User response: Correct the value specified in the keyword.

GCL31070I  STOPPING IMS SUBSYSTEM: ssid
Explanation: Informational message indicating that ssid
User response: None.

GCL31071I  STOPPING IRLM irlmjobname
Explanation: Informational message indicating that the job will issue the command to shutdown the IRLM address space.
User response: None.

GCL31072I  task jobname
IS NOT ACTIVE
Explanation: Informational message indicating that a keyword was specified to shutdown an address space but the address space is not active on this zOS image.
User response: None.

GCL31073I  STOPPING CSL: cslojobname
Explanation: Informational message indicating that the job will issue the command to shutdown the CSL address spaces.
User response: None.

GCL31074I  MVS COMMAND: command
Explanation: Informational message indicating that the job will issue the command in order to stop a requested address space.
User response: None.
GCL31507W • GCL31542I

**Explanation:** IMSSTART command processing message.

**User response:** None.

---

**GCL31507W** ERROR CALLING GCL01HEX;
**FUNCTION:** function R15=nnnn

**Explanation:** An error occurred using GCL01HEX to print a record. Processing continues.

**User response:** Please report this message to IBM Software Support.

---

**GCL31508E** UNABLE TO LOAD PROGRAM: program name

**Explanation:** The indicated program name was not found. Processing terminates.

**User response:** Check that the job's //STEPLIB library is correct. If unable to resolve the problem, Contact IBM Software Support.

---

**GCL31521E** ERROR ISSUING IMS COMMAND, RC=nnnn RSN=nnnn

**Explanation:** An unexpected error was encountered when attempting to issue an IMS command. Processing terminates.

**User response:** Contact IBM Software Support. Have available the output from the job that received this message.

---

**GCL31522W** IMS SUBSYSTEM ssid IS ACTIVE

**Explanation:** An IMSSTART command was processed but the target IMS subsystem is already active. The command will terminate with the IMS-ALREADY-STARTED return code.

**User response:** Verify that the job was executed on the correct zOS image and whether the IMS subsystem should have been inactive.

---

**GCL31523I** CONNECTED TO IMS SUBSYSTEM: ssid RELEASE v.r

**Explanation:** Informational message indicating that the target IMS subsystem was located and the release of the IMS subsystem.

**User response:** None.

---

**GCL31534E** USERID IS NOT AUTHORIZED TO ISSUE THE IMS COMMAND

**Explanation:** A request to issue a reply to an outstanding WTOR or issue an operator command failed because of insufficient authority.

**User response:** Verify that the user who submitted the job has the proper authority.

---

**GCL31535E** COMMAND FAILED, RC=nnnn

**Explanation:** An unexpected error was encountered from an attempt to issue an IMS command. Processing terminates.

**User response:** Contact IBM Software Support. Have available the output from the job that received this message.

---

**GCL31536E** ssid DID NOT START WITHIN THE WAIT TIME LIMIT

**Explanation:** After issuing a command to start an IMS subsystem, the IMS subsystem was unable to complete initialization and restart within the specified WAIT time limit.

**User response:** View the IMS log to see why IMS did not initialize. Possibly alter the WAIT time limit specified to allow for the time for IMS to initialize or restart.

---

**GCL31571I** task jobname HAS STARTED

**Explanation:** Informational message indicating that the target address space is started.

**User response:** None.

---

**GCL31538I** WAITING FOR xxxx TO START

**Explanation:** Informational message indicating that the job is now waiting for the address space to initialize.

**User response:** None.

---

**GCL31540I** IMS COMMAND: command

**Explanation:** Informational message indicating that the job will issue the IMS command.

**User response:** None.

---

**GCL31541I** COMMAND NOT EXECUTED DUE TO SIMULATION MODE

**Explanation:** Informational message indicating that an actual command was not issued because the SIMULATE keyword was specified.

**User response:** Verify that a simulation was desired.

---

**GCL31542I** AUTO RESTART IN EFFECT FOR THIS IMS

**Explanation:** Informational message indicating the IMS has the AUTO RESTART in effect, so the job will not issue the restart command.

**User response:** IMS will determine the restart command based on last shutdown.
GCL31548I  OPTIONS IN EFFECT FOR THIS
EXECUTION: merged options

Explanation:  Informational message indicating how
COPY will handle the options. The displayed options
are derived from the INI and any overriding
specifications in the command input.

User response:  None.

GCL31550E  ERROR IN PARAMETERS FOR keyword

Explanation:  The parameters for the indicated
keyword were incorrect. Processing terminates.

User response:  Check the keyword parameters.
Mutually exclusive keywords may have been used.

GCL31551E  REQUIRED KEYWORD MISSING:
keyword

Explanation:  A keyword required for processing has
been omitted. Processing terminates.

User response:  Specify the required keyword.

GCL31552E  REQUIRED INI SECTION/TOKEN
MISSING: SECTION=section
TOKEN=token
REQUIRED INI VALUE
MISSING FOR SECTION=section
TOKEN=token
INVALID INI VALUE
FOR SECTION=section TOKEN=token

Explanation:  An error occurred validating the GCLINI
parmlib member options. Processing terminates.

User response:  Correct the GCLINI member in the
IMS Cloning Tool PARMLIB data set.

GCL31553E  KEYWORD: keyword
MAXIMUM LENGTH: nnn EXCEEDED
TOKEN: token
MAXIMUM LENGTH: nnn EXCEEDED

Explanation:  The operand entered for a keyword or
INI token exceeded the maximum length allowed. nnn
is the maximum allowed length. Processing terminates.

User response:  Correct the length of the keyword’s
operand or the token’s value.

GCL31554E  KEYWORD HAS MORE THAN 1
OPERAND; ONLY 1 ALLOWED:
keyword

Explanation:  Multiple operands were detected for a
keyword; only one operand is permitted. Processing
terminates.

User response:  Correct the keyword to use one
operand.

GCL31556E  NOTHING SPECIFIED FOR
KEYWORD: keyword

Explanation:  A keyword was entered without an
appropriate operand. Processing terminates.

User response:  Specify an appropriate operand for the
keyword.

GCL31557E  DUPLICATE FOUND; KEYWORD:
keyword
ENTRY: entry

Explanation:  The indicated ‘entry’ for the keyword
was previously specified. Processing terminates.

User response:  Remove the duplicate entry.

GCL31558E  INVALID VALUE IN KEYWORD:
keyword
VALUE: value error text

Explanation:  The value in the keyword is invalid.
‘error text’ indicates the problem detected with the
value. Processing terminates.

User response:  Correct the value specified in the
keyword.

GCL31570I  STARTING IMS SUBSYSTEM: ssid

Explanation:  Informational message indicating that
the job will issue the command to start the IMS
subsystem.

User response:  None.

GCL31571I  STARTING IRLM irlmjobname

Explanation:  Informational message indicating that
the job will issue the command to start the IRLM
address space.

User response:  None.

GCL31572I  task jobname IS ALREADY ACTIVE

Explanation:  Informational message indicating that a
keyword was specified to start an address space but the
address space is already active on this zOS image.

User response:  None.

GCL31573I  STARTING CSL: csjobname

Explanation:  Informational message indicating that
the job will issue the command to start the CSL address
spaces.

User response:  None.
GCL31574I  MVS COMMAND: command
Explanation: Informational message indicating that the job will issue the command in order to start a requested address space.
User response: None.

GCL32001I hh:mm:ss IMSUPDATE STARTED - PROGRAM REV=rrr | hh:mm:ss IMSUPDATE COMPLETED; RETURN CODE=nnnn
Explanation: IMSUPDATE command processing message.
User response: None.

GCL32003I DDNAME ddname ALLOCATED FOR DSN=dsname
Explanation: Informational message showing that a data set was dynamically to the specified ddname for processing.
User response: None.

GCL32004E ALLOCATION FAILED FOR DSN=dsname
Explanation: A problem occurred when attempting to allocate a data set. Processing terminates.
User response: Review the job log for other messages indicating why the allocation failed.

GCL32005E requesttype FAILED FOR DDNAME: ddname
Explanation: A problem occurred when attempting a dynamic allocation request for the specified DD. If the message is a warning, processing continues, else processing will terminate.
User response: Report the problem to IBM Software Support. Have the output from the job which encountered this problem available.

GCL32005W requesttype FAILED FOR DDNAME: ddname
Explanation: A problem occurred when attempting a dynamic allocation request for the specified DD. If the message is a warning, processing continues, else processing will terminate.
User response: Report the problem to IBM Software Support. Have the output from the job which encountered this problem available.

GCL32006E ERROR CALLING GCL01VV1 ttttttt
FUNCTION: function R15=nnnn R0=nnnnnnnn LOC=lllll
Explanation: A problem occurred using a dataspace. tttttttt is the name of the internal table. lllll is the location where the error occurred. Processing terminates.
User response: Contact IBM Software Support. Have available the listing that contains this message and the GCLINI parmlib member that controls execution of GCL.

GCL32007W ERROR CALLING GCL01HEX; FUNCTION: function R15=nnnn
Explanation: An error occurred using GCL01HEX to print a record. Processing continues.
User response: Please report this message to IBM Software Support.

GCL32008E UNABLE TO LOAD PROGRAM: program name
Explanation: The indicated program name was not found. Processing terminates.
User response: Check that the job's //STEPLIB library is correct. If unable to resolve the problem, Contact IBM Software Support.

GCL32009E ERROR ACCESSING JOURNAL FILE; LOC=lllll
Explanation: A VSAM error occurred accessing the journal file. Processing terminates.
User response: See associated GCLVSEnnE error messages. If unable to resolve problem, Contact IBM Software Support. Have available the listing that contains these messages.

GCL32010E DUPLICATE JOURNAL ENTRY; LOC=lllll
Explanation: A duplicate record was detected. Processing terminates.
User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL32011E JOURNAL rectype RECORD NOT FOUND
Explanation: The specified journal record was not found. Processing terminates.
User response: Contact IBM Software Support. Have available the listing that contains this message.
GCL32012E JOURNAL rectype RECORD IS WRONG VERSION

Explanation: The specified journal record was not the expected format. The journal record is printed. Processing terminates.

User response: Verify that different releases of IMS Cloning Tool have not been run using the same journal data set. If unable to resolve problem, Contact IBM Software Support. Have available the listing that contains this message.

GCL32013E UNKNOWN RECORD TYPE READ FROM: ttttttt LOC=lllll

Explanation: An unexpected record was found in the dataspace. The record is printed. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL32014E RECORD COUNT IS ZERO; LOC=lllll | COUNT MISMATCH; RECORDS READ=rrrr CONTROL RECORD COUNT=cccc LOC=lllll

Explanation: There was a problem with the journal records needed to initiate the IMS update. For the first format, the journal control record indicates no entries were added. For the second format, the number of records read from the journal, rrrr, is not the same as the number indicated in the journal control record, cccc. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL32015E THE COPY PROCESS DID NOT COMPLETE SUCCESSFULLY

Explanation: The journal indicates that the COPY command did not complete successfully. Processing terminates.

User response: None.

GCL32031E PRIOR COPY WAS A SIMULATION | PRIOR RENAME WAS A SIMULATION | PRIOR RENAME WAS NOT RUN

Explanation: The journal indicates that the COPY command or the RENAME command was a simulation, or the RENAME command has not been run. Processing terminates.

User response: Run IMSUPDATE after both the COPY and RENAME have successfully run in non-simulation.

GCL32048I OPTIONS IN EFFECT FOR THIS EXECUTION: merged options

Explanation: Informational message indicating how COPY will handle the options. The displayed options are derived from the INI and any overriding specifications in the command input.

User response: None.

GCL32050E ERROR IN PARAMETERS FOR keyword

Explanation: The parameters for the indicated keyword were incorrect. Processing terminates.

User response: Check the keyword parameters. Mutually exclusive keywords may have been used.

GCL32051E REQUIRED KEYWORD MISSING: keyword

Explanation: A keyword required for processing has been omitted. Processing terminates.

User response: Specify the required keyword.

GCL32052E REQUIRED INI SECTION/TOKEN MISSING: SECTION=section TOKEN=token | REQUIRED INI VALUE MISSING FOR SECTION=section TOKEN=token | INVALID INI VALUE FOR SECTION=section TOKEN=token

Explanation: An error occurred validating the GCLINI parmlib member options. Processing terminates.

User response: Correct the GCLINI member in the IMS Cloning Tool PARMLIB data set.

GCL32053E KEYWORD: keyword MAXIMUM LENGTH: nnn EXCEEDED | TOKEN: token MAXIMUM LENGTH: nnn EXCEEDED

Explanation: The operand entered for a keyword or INI token exceeded the maximum length allowed. nnn is the maximum allowed length. Processing terminates.

User response: Correct the length of the keyword’s operand or the token’s value.

GCL32054E KEYWORD HAS MORE THAN 1 OPERAND; ONLY 1 ALLOWED: keyword

Explanation: Multiple operands were detected for a keyword; only one operand is permitted. Processing terminates.

User response: Correct the keyword to use one operand.
<table>
<thead>
<tr>
<th>Error Code</th>
<th>Message</th>
<th>Explanation</th>
<th>User Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCL32056E</td>
<td><strong>NOTHING SPECIFIED FOR KEYWORD:</strong> keyword</td>
<td>A keyword was entered without an appropriate operand. Processing terminates.</td>
<td>Specify an appropriate operand for the keyword.</td>
</tr>
<tr>
<td>GCL32057E</td>
<td><strong>DUPLICATE FOUND; KEYWORD:</strong> keyword</td>
<td>The indicated 'entry' for the keyword was previously specified. Processing terminates.</td>
<td>Remove the duplicate entry.</td>
</tr>
<tr>
<td>GCL32058E</td>
<td><strong>INVALID VALUE IN KEYWORD:</strong> keyword</td>
<td>The value in the keyword is invalid. 'error text' indicates the problem detected with the value. Processing terminates.</td>
<td>Correct the value specified in the keyword.</td>
</tr>
<tr>
<td>GCL32059E</td>
<td><strong>DDNAME OR DSN FOR ddtype NOT SPECIFIED</strong></td>
<td>Neither the DDN or DATASET parameter was specified for a required DD. Processing terminates.</td>
<td>Enter either a DDN or DATASET keyword for the ddtype.</td>
</tr>
<tr>
<td>GCL32060E</td>
<td><strong>DDNAME MISSING:</strong> ddname</td>
<td>A required DD was not specified in the JCL. Processing terminates.</td>
<td>Add the require DD to the JCL.</td>
</tr>
<tr>
<td>GCL32061E</td>
<td><strong>call FAILED FOR DD=ddname, RC=nnnn</strong></td>
<td>A error occurred when attempting to access a data set. Processing terminates.</td>
<td>Review the system log for any error messages. If unable to resolve the problem, contact IBM Software Support.</td>
</tr>
<tr>
<td>GCL32062E</td>
<td><strong>UNABLE TO LOCATE dbdname IN ACBLIB</strong></td>
<td>An error was encountered when attempting to locate a member from an ACBLIB data set. Processing terminates.</td>
<td>Verify the correct ACBLIB data set(s) was specified in the job. Contact IBM Software Support.</td>
</tr>
<tr>
<td>GCL32063E</td>
<td><strong>UNABLE TO LOCATE member MEMBER IN MODBLKS</strong></td>
<td>An error was encountered when attempting to locate a member from a MODBLKS data set. Processing terminates.</td>
<td>Verify the correct MODBLKS data set(s) was specified in the job. Verify the correct IMS-SUFFIX was specified. Review the system log for any error messages. If unable to resolve the problem, contact IBM Software Support.</td>
</tr>
<tr>
<td>GCL32064E</td>
<td><strong>DDNAME: ddname ALREADY ALLOCATED</strong></td>
<td>The 'ddname' was entered as a parameter for a keyword but the ddname is already allocated to another data set. Processing terminates.</td>
<td>Make sure the ddname specified is not specified for another keyword or a reserved DDname.</td>
</tr>
<tr>
<td>GCL32065E</td>
<td><strong>UNPAIRED ENTRY IN KEYWORD:</strong> keyword</td>
<td>There is not an even number, or paired, entries for the specified keyword. Processing terminates.</td>
<td>Correct the keyword specification.</td>
</tr>
<tr>
<td>GCL32066E</td>
<td><strong>NAME USED AS BOTH SOURCE AND TARGET:</strong> name IN KEYWORD: keyword</td>
<td>A target entry was also specified as a source in the indicated keyword. Processing terminates.</td>
<td>Correct the keyword specification.</td>
</tr>
<tr>
<td>GCL32067E</td>
<td><strong>NAME USED AS TARGET MULTIPLE TIMES:</strong> name IN KEYWORD: keyword</td>
<td>A target entry was specified for multiple sources in the indicated keyword. Processing terminates.</td>
<td>Correct the keyword specification.</td>
</tr>
<tr>
<td>VCR32084I</td>
<td><strong>DATA SET NAMES FOR ddname:</strong></td>
<td>The names indicated for the keyword have been accepted for processing.</td>
<td>None.</td>
</tr>
<tr>
<td>VCR32085I</td>
<td><strong>PAIRS FOR KEYWORD:</strong> keyword</td>
<td>The names indicated for the keyword have been accepted for processing.</td>
<td>None.</td>
</tr>
</tbody>
</table>
**VCR32086E**

**Explanation:** IMS Cloning Tool needs to invoke some DBRC services in order to perform the processing for the REMOVE-MEMBER keyword but it was unable to LOAD the necessary modules.

**User response:** Update the JCL so that the IMS:SDFSRESL data set is included in the STEPLIB/JOBLIB/LINKLIST concatenation.

---

**GCL32098E**

**Explanation:** An unknown error occurred. Processing terminates.

**User response:** Please report this message to IBM Software Support.

---

**GCL32099E**

**Explanation:** An error occurred using name for requested function. Processing terminates.

**User response:** Contact IBM Software Support. Have available the listing that contains this message and the GCLINI parmlib member that controls execution of GCL.

---

**GCL32101I**

**Explanation:** MDA UPDATE processing message.

**User response:** None.

---

**GCL32104E**

**Explanation:** A problem occurred when attempting to allocate a data set. Processing terminates.

**User response:** Review the job log for other messages indicating why the allocation failed.

---

**GCL32105E**

**Explanation:** A problem occurred when attempting a dynamic allocation request for the specified DD. If the message is a warning, processing continues, else processing will terminate.

**User response:** Report the problem to IBM Software Support. Have the output from the job which encountered this problem available.

---

**GCL32106E**

**Explanation:** A problem occurred using a dataspace. ttttttttt is the name of the internal table. lllll is the location where the error occurred. Processing terminates.

**User response:** Contact IBM Software Support. Have available the listing that contains this message and the GCLINI parmlib member that controls execution of GCL.

---

**GCL32107W**

**Explanation:** An error occurred using GCL01HEX to print a record. Processing continues.

**User response:** Please report this message to IBM Software Support.

---

**GCL32109E**

**Explanation:** A VSAM error occurred accessing the journal file. Processing terminates.

**User response:** See associated GCLVSEnnE error messages. If unable to resolve problem, Contact IBM Software Support. Have available the listing that contains these messages.

---

**GCL32110E**

**Explanation:** A duplicate record was detected. Processing terminates.

**User response:** Contact IBM Software Support. Have available the listing that contains this message.

---

**GCL32111E**

**Explanation:** The specified journal record was not found. Processing terminates.

**User response:** Contact IBM Software Support. Have available the listing that contains this message.
### GCL32112E • JOURNAL record type RECORD IS WRONG VERSION

**Explanation:** The specified journal record was not the expected format. The journal record is printed. Processing terminates.

**User response:** Verify that different releases of IMS Cloning Tool have not been run using the same journal data set. If unable to resolve problem, Contact IBM Software Support. Have available the listing that contains this message.

### GCL32113E • UNKNOWN RECORD TYPE READ FROM: ttttttt; LOC=llllll

**Explanation:** An unexpected record was found in the dataspace. The record is printed. Processing terminates.

**User response:** Contact IBM Software Support. Have available the listing that contains this message.

### GCL32114W • DATA SET MATCHES NO RENAME MASK: datasetname

**Explanation:** The indicated data set did not match any source rename mask. Processing continues.

**User response:** None required.

### GCL32135I • hh:mm:ss MDA UPDATING BYPASSED DUE TO SIMULATION

**Explanation:** Informational message indicating the MDA data sets will not be updated due to the presence of the SIMULATION keyword.

**User response:** None.

### GCL32139I • hh:mm:ss PROCESSING MDA DATASET dsname

**Explanation:** Informational message indicating the MDA data set to be updated.

**User response:** None.

### GCL32143E • UNABLE TO RENAME DSN=source datasetname USING MASK=target mask

**Explanation:** The new name of a data set will exceed 44 characters. Processing terminates.

**User response:** Correct the RENAME-MASKS specification.

### GCL32201I • hh:mm:ss RECON UPDATE STARTED - PROGRAM REV=rrr | hh:mm:ss RECON UPDATE COMPLETED; RETURN CODE=nnnn

**Explanation:** RECON UPDATE processing message.

**User response:** None.

### GCL32204E • ALLOCATION FAILED FOR DSNAME: dsname

**Explanation:** A problem occurred when attempting to allocate a data set. Processing terminates.

**User response:** Review the job log for other messages indicating why the allocation failed.

### GCL32205E • requesttype FAILED FOR DDNAME: ddname

**Explanation:** A problem occurred when attempting a dynamic allocation request for the specified DD. If the message is a warning, processing continues, else processing will terminate.

**User response:** Report the problem to IBM Software Support. Have the output from the job which encountered this problem available.

### GCL32206E • ERROR CALLING GCL01VV1 ttttttt FUNCTION: function R15=nnnn R0=nnnnnnnn LOC=llllll

**Explanation:** A problem occurred using a dataspace. ttttttt is the name of the internal table. ll is the location where the error occurred. Processing terminates.

**User response:** Contact IBM Software Support. Have available the listing that contains this message and the GCLINI parmlib member that controls execution of GCL.

### GCL32207W • ERROR CALLING GCL01HEX; FUNCTION: function R15=nnnn

**Explanation:** An error occurred using GCL01HEX to print a record. Processing continues.

**User response:** Please report this message to IBM Software Support.

### GCL32209E • ERROR ACCESSING JOURNAL FILE; LOC=llllll

**Explanation:** A VSAM error occurred accessing the journal file. Processing terminates.

**User response:** See associated GCLVSEnnE error
messages. If unable to resolve problem, Contact IBM Software Support. Have available the listing that contains these messages.

GCL32210E  DUPLICATE JOURNAL ENTRY; LOC=lllllll
Explanation:  A duplicate record was detected. Processing terminates.
User response:  Contact IBM Software Support. Have available the listing that contains this message.

GCL32211E  JOURNAL rectype RECORD NOT FOUND
Explanation:  The specified journal record was not found. Processing terminates.
User response:  Contact IBM Software Support. Have available the listing that contains this message.

GCL32212E  JOURNAL rectype RECORD IS WRONG VERSION
Explanation:  The specified journal record was not the expected format. The journal record is printed. Processing terminates.
User response:  Verify that different releases of IMS Cloning Tool have not been run using the same journal data set. If unable to resolve problem, Contact IBM Software Support. Have available the listing that contains this message.

GCL32213E  UNKNOWN RECORD TYPE READ FROM: hhhhhhhh; LOC=lllllll
Explanation:  An unexpected record was found in the dataspace. The record is printed. Processing terminates.
User response:  Contact IBM Software Support. Have available the listing that contains this message.

GCL32214W  DATA SET MATCHES NO RENAME MASK: datasetname
Explanation:  The indicated data set did not match any source rename mask. Processing continues.
User response:  None required.

GCL32220W  hh:mm:ss dsname IS EMPTY
Explanation:  Informational message indicating the RECON data set is empty. There are no records in the data set to update. Processing continues.
User response:  Verify that this is for the spare RECON data set.

---

**GCL32235I**  hh:mm:ss RECON UPDATING BYPASSED DUE TO SIMULATION
Explanation:  Informational message indicating the RECON data sets will not be updated due to the presence of the SIMULATION keyword.
User response:  None.

**GCL32239I**  hh:mm:ss PROCESSING RECON DATASET dsname
Explanation:  Informational message indicating the RECON data set to be updated.
User response:  None.

**GCL32240I**  hh:mm:ss rectype RECORD action
Explanation:  Informational message indicating showing the RECON record type and the action that would have occurred if not for SIMULATION.
User response:  None.

**GCL32243E**  UNABLE TO RENAME DSN=source datasetname | USING MASK=target mask
Explanation:  The new name of a data set will exceed 44 characters. Processing terminates.
User response:  Correct the RENAME-MASKS specification.

**GCL32244E**  ERROR DETERMINING TARGET VOLUME SERIAL LENGTH; SOURCE: volser 1 ERROR DETERMINING TARGET SSID LENGTH; SOURCE: ssid
Explanation:  A record in the RECON data set was found to contain an SSID matching a volume specified in the COPY command, but IMS Cloning Tool could not determine the length of the paired volume serial. If the problem is for SSID, the pairs are specified in the IMSUPDATE command.
User response:  Check the VOLPAIRS specified in the COPY command or the SSIDs specified in the IMSUPDATE command. If the problem can not be resolved, contact IBM Software Support. Have the output from the COPY step and the IMSUPDATE available.

**GCL32245W**  rectype RECORD SSID=ssid NOT INCLUDED IN SSID PAIRS
Explanation:  A record in the RECON data set was found to contain an SSID not specified in the SSID keyword. The updating of the record is bypassed.
User response:  None required.
GCL32246E  UNABLE TO UPDATE rectype RECORD, DUPLICATE FOUND

Explanation: When updating records in a RECON data set, one of the updates would result in a duplicate record in the RECON. Processing terminates.

User response: Contact IBM Software Support. Have the output from the failing job available.

GCL32247W  TARGET IMS CONDITIONED FOR IMSPLEX=imsplex

Explanation: The RECON data set has an IMSPLEX name defined. The IMSPLEX name in the target RECON has been updated with the new imsplex name.

User response: Verify that the imsplex specified for the target IMS environment is correct. The imsplex name must match the IMSPLEX used for the CSI address spaces for the target IMS environment.

GCL32248W  SCI ADDRESS SPACE FOR IMSPLEX=imsplex MUST BE STARTED BEFORE RUNNING DBRC JOBS

Explanation: The IMSPLEX name in the target IMS RECONs has been conditioned. Before running any DBRC jobs the SCI address space for the IMSPLEX specified must be started.

User response: The SCI address space should be started. If the IMSUPDATE step was run for an online IMS system and a DBRC step needs to be run after the IMSUPDATE to close the last online log, the SCI address space will need to be started for the DBRC step to be executed successfully.

GCL32299E  ERROR CALLING name FUNCTION:

Explanation: An error occurred using name for requested function. Processing terminates.

User response: Please report this message to IBM Software Support.

GCL32301I  hh:mm:ss JCLPDS UPDATE STARTED - PROGRAM REV=rrr | hh:mm:ss JCLPDS UPDATE COMPLETED; RETURN CODE=nnnn

Explanation: JCLPDS UPDATE processing message.

User response: None.

GCL32304E  ALLOCATION FAILED FOR DSNAME:

dname

Explanation: A problem occurred when attempting to allocate a data set. Processing terminates.

User response: Review the job log for other messages indicating why the allocation failed.

GCL32305E  requesttype FAILED FOR DDNAME:

ddname

Explanation: A problem occurred when attempting a dynamic allocation request for the specified DD. If the message is a warning, processing continues, else processing will terminate.

User response: Report the problem to IBM Software Support. Have the output from the job which encountered this problem available.

GCL32306E ERROR CALLING GCL01VV1 tttttttt FUNCTION: function R15=nnnn R0=nnnnnnnn LOC=lllll

Explanation: A problem occurred using a dataspace. tttttttt is the name of the internal table. llll is the location where the error occurred. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message and the GCLINI parmlib member that controls execution of GCL.

GCL32307W  ERROR CALLING GCL01HEX;

FUNCTION: function R15=nnnn

Explanation: An error occurred using GCL01HEX to print a record. Processing continues.

User response: Please report this message to IBM Software Support.

GCL32309E  ERROR ACCESSING JOURNAL FILE;

LOC=lllll

Explanation: A VSAM error occurred accessing the journal file. Processing terminates.

User response: See associated GCLVSEnnE error messages. If unable to resolve problem, Contact IBM Software Support. Have available the listing that contains these messages.
GCL32310E  DUPLICATE JOURNAL ENTRY; LOC=llllll
Explanation: A duplicate record was detected. Processing terminates.
User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL32311E  JOURNAL rectype RECORD NOT FOUND
Explanation: The specified journal record was not found. Processing terminates.
User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL32312E  JOURNAL rectype RECORD IS WRONG VERSION
Explanation: The specified journal record was not the expected format. The journal record is printed. Processing terminates.
User response: Verify that different releases of IMS Cloning Tool have not been run using the same journal data set. If unable to resolve problem, Contact IBM Software Support. Have available the listing that contains this message.

GCL32313E  UNKNOWN RECORD TYPE READ FROM: hhhhhhh; LOC=llllll
Explanation: An unexpected record was found in the dataspace. The record is printed. Processing terminates.
User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL32314I  hh:mm:ss RESLIB UPDATING BYPASSED DUE TO SIMULATION
Explanation: Informational message indicating the RESLIB data sets will not be updated due to the presence of the SIMULATION keyword.
User response: None.

GCL32314W  DATA SET MATCHES NO RENAME MASK: datasetname
Explanation: The indicated data set did not match any source rename mask. Processing continues.
User response: None required.

GCL32335I  hh:mm:ss JCLPDS UPDATING BYPASSED DUE TO SIMULATION member UPDATING BYPASSED DUE TO SIMULATION
Explanation: Informational message indicating the JCLPDS data sets will not be updated due to the presence of the SIMULATION keyword. There will also be one message for each member that would have updated.
User response: None.

GCL32339I  hh:mm:ss PROCESSING JCLPDS DATASET dsname
Explanation: Informational message indicating the JCLPDS data set to be updated.
User response: None.

GCL32343E  UNABLE TO RENAME DSN=source datasetname USING MASK=target mask
Explanation: The new name of a data set will exceed 44 characters. Processing terminates.
User response: Correct the RENAME-MASKS specification.

GCL32344E  ERROR DETERMINING TARGET VOLUME SERIAL LENGTH; SOURCE: volser 1 ERROR DETERMINING TARGET SSID LENGTH; SOURCE: ssid
Explanation: A record in the JCLPDS data set was found to contain an SSID matching a volume specified in the COPY command, but IMS Cloning Tool could not determine the length of the paired volume serial. If the problem is for SSID, the pairs are specified in the IMSUPDATE command.
User response: Check the VOLPAIRS specified in the COPY command or the SSIDs specified in the IMSUPDATE command. If the problem cannot be resolved, contact IBM Software Support. Have the output from the COPY step and the IMSUPDATE available.

GCL32401I  hh:mm:ss RDDS UPDATE STARTED - PROGRAM REV=rrrr | hh:mm:ss RDDS UPDATE COMPLETED; RETURN CODE=nnnn
Explanation: RDDS UPDATE processing message.
User response: None.

GCL32404E  ALLOCATION FAILED FOR DSNAME: dsname
Explanation: A problem occurred when attempting to allocate a data set. Processing terminates.
User response: Review the job log for other messages indicating why the allocation failed.
GCL32406E  ERROR CALLING GCL01VV1 ttttttt
FUNCTION: function R15=nnnn
R0=nnnnnnnn LOC=lllll

Explanation: A problem occurred using a dataspace. ttttttt is the name of the internal table. lllll is the location where the error occurred. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL32407W  ERROR CALLING GCL01HEX;
FUNCTION: function R15=nnnn

Explanation: An error occurred using GCL01HEX to print a record. Processing continues.

User response: Please report this message to IBM Software Support.

GCL32409E  ERROR ACCESSING RDDS FILE;
LOC=lllll

Explanation: An error occurred accessing the RDDS file. Processing terminates.

User response: See associated GCLVSEnnE error messages. If unable to resolve problem, Contact IBM Software Support. Have available the listing that contains these messages.

GCL32410E  DUPLICATE JOURNAL ENTRY;
LOC=lllll

Explanation: A duplicate record was detected. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL32411E  JOURNAL rectype RECORD NOT FOUND

Explanation: The specified journal record was not found. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL32412E  JOURNAL rectype RECORD IS WRONG VERSION

Explanation: The specified journal record was not the expected format. The journal record is printed. Processing terminates.

User response: Verify that different releases of IMS Cloning Tool have not been run using the same journal data set. If unable to resolve problem, contact IBM Software Support. Have available the listing that contains this message.

GCL32413E  UNKNOWN RECORD TYPE READ FROM: ttttttt; LOC=lllll

Explanation: An unexpected record was found in the dataspace. The record is printed. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL32420W hh:mm:ss dsname IS EMPTY

Explanation: Informational message indicating the RDDS data set is empty. There are no records in the data set to update. Processing continues.

User response: Verify that this is for a spare or unused RDDS data set.

GCL32421E  INVALID CONTROL RECORD READ FROM rdds_dataset_name

Explanation: Error message indicating the control record read from the RDDS data set was not in the expected format continues.

User response: Verify that the data set name specified for the RDDS is and that the source data set is usable by the source IMS subsystem. If so, report the problem to IBM Software Support.

GCL32435I hh:mm:ss RDDS UPDATING BYPASSED DUE TO SIMULATION

Explanation: Informational message indicating the RDDS data sets will not be updated due to the presence of the SIMULATION keyword.

User response: None.

GCL32439I hh:mm:ss PROCESSING RDDS DATA SET dsname

Explanation: Informational message indicating the RDDS data set to be updated.

User response: None.

GCL32440I hh:mm:ss rectype RECORD action

Explanation: Informational message indicating showing the RDDS record type and the action that would have occurred if not for SIMULATION.

User response: None.
**GCL32444E**  ERROR DETERMINING TARGET SSID LENGTH; SOURCE: ssid

_Explanation:_ A record in the RDDS data set was found to contain an SSID matching a volume specified in the COPY command, but IMS Cloning Tool could not determine the length of the paired volume serial. If the problem is for SSID, the pairs are specified in the IMSUPDATE command.

_User response:_ Check the VOLPAIRS specified in the COPY command or the SSIDs specified in the IMSUPDATE command. If the problem can not be resolved, Contact IBM Software Support. Have the output from the COPY step and the IMSUPDATE available.

**GCL32445W**  rectype RECORD SSID:ssid NOT INCLUDED IN SSID PAIRS

_Explanation:_ The control record in the RDDS data set was found to control an SSID not specified in the SSID keyword. The updating of the record is bypassed.

_User response:_ None required.

**GCL32501I**  hh:mm:ss RESLIB UPDATE STARTED - PROGRAM REV=rrr | hh:mm:ss RESLIB UPDATE COMPLETED; RETURN CODE=nnnn

_Explanation:_ RESLIB UPDATE processing message.

_User response:_ None.

**GCL32504E**  ALLOCATION FAILED FOR DSNAME: dsn

_Explanation:_ A problem occurred when attempting to allocate a data set. Processing terminates.

_User response:_ Review the job log for other messages indicating why the allocation failed.

**GCL32505E**  requesttype FAILED FOR DDNAME: ddbname

_Explanation:_ A problem occurred when attempting a dynamic allocation request for the specified DD. If the message is a warning, processing continues, else processing will terminate.

_User response:_ Report the problem to IBM Software Support. Have the output from the job which encountered this problem available.

**GCL32505W**  requesttype FAILED FOR DDNAME: ddbname

_Explanation:_ A problem occurred when attempting a dynamic allocation request for the specified DD. If the message is a warning, processing continues, else processing will terminate.

**GCL32506E**  ERROR CALLING GCL01VV1 tttttttt FUNCTION: function R15=nnnn

_R0=nnnnnnnn LOC=lllll

_Explanation:_ A problem occurred using a dataspace. _ttttttt_ is the name of the internal table. _lllll_ is the location where the error occurred. Processing terminates.

_User response:_ Contact IBM Software Support. Have available the listing that contains this message and the GCLINI parmlib member that controls execution of GCL.

**GCL32507W**  ERROR CALLING GCL01HEX;

_FUNCTION: function R15=nnnn

_Explanation:_ An error occurred using GCL01HEX to print a record. Processing continues.

_User response:_ Please report this message to IBM Software Support.

**GCL32508E**  ALLOCATION FAILED FOR MEMBER:membername in DSN:dsname

_Explanation:_ A problem occurred when attempting to allocate a member of a PDS. Processing terminates.

_User response:_ Review the job log for other messages indicating why the allocation failed.

**GCL32509E**  ERROR ACCESSING RESLIB FILE;

_LOC=lllll

_Explanation:_ An error occurred accessing the RESLIB file. Processing terminates.

_User response:_ Check for any additional error messages. If unable to resolve problem, Contact IBM Software Support. Have available the listing that contains these messages.

**GCL32510E**  DUPLICATE JOURNAL ENTRY;

_LOC=lllll

_Explanation:_ A duplicate record was detected. Processing terminates.

_User response:_ Contact IBM Software Support. Have available the listing that contains this message.

**GCL32511E**  JOURNAL rectype RECORD NOT FOUND

_Explanation:_ The specified journal record was not found. Processing terminates.

_User response:_ Contact IBM Software Support. Have
GCL32512E  •  GCL32601I

available the listing that contains this message.

GCL32512E  JOURNAL rectype RECORD IS WRONG VERSION

Explanation: The specified journal record was not the expected format. The journal record is printed. Processing terminates.

User response: Verify that different releases of IMS Cloning Tool have not been run using the same journal data set. If unable to resolve problem, contact IBM Software Support. Have available the listing that contains this message.

GCL32513E  UNKNOWN RECORD TYPE READ FROM: tttttttt; LOC=llllll

Explanation: An unexpected record was found in the dataspace. The record is printed. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL32520W  hh:mm:ss dsname IS EMPTY

Explanation: Informational message indicating the RESLIB data set is empty. There are no records in the data set to update. Processing continues.

User response: Verify that this is for a spare or unused RESLIB data set.

GCL32521E  INVALID CONTROL RECORD READ FROM RESLIB_dataset_name

Explanation: Error message indicating the control record read from the RESLIB data set was not in the expected format continues.

User response: Verify that the data set name specified for the RESLIB is and that the source data set is usable by the source IMS subsystem. If so, report the problem to IBM Software Support.

GCL32535I  hh:mm:ss RESLIB UPDATING BYPASSED DUE TO SIMULATION

Explanation: Informational message indicating the RESLIB data sets will not be updated due to the presence of the SIMULATION keyword.

User response: None.

GCL32539I  hh:mm:ss PROCESSING RESLIB DATA SET dsname

Explanation: Informational message indicating the RESLIB data set to be updated.

User response: None.

GCL32540I  hh:mm:ss rectype RECORD action

Explanation: Informational message indicating showing the RESLIB record type and the action that would have occurred if not for SIMULATION.

User response: None.

GCL32544E  ERROR DETERMINING TARGET SSID LENGTH; SOURCE: ssid

Explanation: A record in the RESLIB data set was found to contain an SSID matching a volume specified in the COPY command, but IMS Cloning Tool could not determine the length of the paired volume serial. If the problem is for SSID, the pairs are specified in the IMSUPDATE command.

User response: Check the VOLPAIRS specified in the COPY command or the SSIDs specified in the IMSUPDATE command. If the problem can not be resolved, Contact IBM Software Support. Have the output from the COPY step and the IMSUPDATE available.

GCL32545W  rectype RECORD ssid NOT INCLUDED IN SSID PAIRS

Explanation: The control record in the RESLIB data set was found to control an SSID not specified in the SSID keyword. The updating of the record is bypassed.

User response: None required.

GCL32562E  UNABLE TO LOCATE member IN datasetname

Explanation: An error was encountered when attempting to locate a member from a RESLIB data set. Processing terminates.

User response: Verify the correct RESLIB data set(s) was specified in the job. Review the system log for any error messages. If unable to resolve the problem, contact IBM Software Support.

GCL32578E  UNKNOWN MODULE member LOADED FROM datasetname

Explanation: A module loaded from a RESLIB data set was not in the expected format. Processing terminates.

User response: Verify the correct RESLIB data set(s) was specified in the job. Review the system log for any error messages. If unable to resolve the problem, contact IBM Software Support.

GCL32601I  hh:mm:ss REMOVE MEMBER STARTED - PROGRAM REV=rrrr | hh:mm:ss REMOVE MEMBER COMPLETED; RETURN CODE=nnnn

Explanation: REMOVE MEMBER processing message.
User response: None.

GCL32604E ALLOCATION FAILED FOR DSNAME: *dsname*

Explanation: A problem occurred when attempting to allocate a data set. Processing terminates.

User response: Review the job log for other messages indicating why the allocation failed.

GCL32606E ERROR CALLING GCL01VV1 ttttttt
FUNCTION: function R15=nnnn
R0=nnnnnnnnn LOC=lllll

Explanation: A problem occurred using a dataspace. tttttttt is the name of the internal table. llllll is the location where the error occurred. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message and the GCLINI parmlib member that controls execution of GCL.

GCL32607W ERROR CALLING GCL01HEX;
FUNCTION: function R15=nnnn

Explanation: An error occurred using GCL01HEX to print a record. Processing continues.

User response: Please report this message to IBM Software Support.

GCL32609E ERROR ACCESSING JOURNAL FILE;
LOC=lllll

Explanation: A VSAM error occurred accessing the journal file. Processing terminates.

User response: See associated GCLVSEnnE error messages. If unable to resolve problem, Contact IBM Software Support. Have available the listing that contains these messages.

GCL32610E DUPLICATE JOURNAL ENTRY;
LOC=lllll

Explanation: A duplicate record was detected. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL32611E JOURNAL rectype RECORD NOT FOUND

Explanation: The specified journal record was not found. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL32612E JOURNAL rectype RECORD IS WRONG VERSION

Explanation: The specified journal record was not the expected format. The journal record is printed. Processing terminates.

User response: Verify that different releases of IMS Cloning Tool have not been run using the same journal data set. If unable to resolve problem, contact IBM Software Support. Have available the listing that contains this message.

GCL32682E MISSING DSN FOR DD: *ddname*

Explanation: A parameter was not specified for the corresponding DDname. Processing terminates.

User response: Correct the keyword or DD statement so that a data set name is specified for the DD.

GCL32683E UNABLE TO GET DBRC rectype INFORMATION FOR SSID: *ssid*

Explanation: An error occurred trying to retrieve information from DBRC for the associated IMS ssid. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message plus a listing of the RECON for the specified IMS subsystem.

GCL32701I hh:mm:ss RDS UPDATE STARTED - PROGRAM REV=rrr hh:mm:ss RDS UPDATE COMPLETED; RETURN CODE=nnnn

Explanation: RDS UPDATE processing message.

User response: None.

GCL32704E ALLOCATION FAILED FOR DSNAME: *dsname*

Explanation: A problem occurred when attempting to allocate a data set. Processing terminates.

User response: Review the job log for other messages indicating why the allocation failed.

GCL32705E requesttype FAILED FOR DDNAME: *ddname*

Explanation: A problem occurred when attempting a dynamic allocation request for the specified DD. Processing terminates.

User response: Report the problem to IBM Software Support. Have the output from the job which encountered this problem available.
GCL32705W  requesttype FAILED FOR DDNAME: ddname

Explanation: A problem occurred when attempting a dynamic allocation request for the specified DD. Processing continues.

User response: Report the problem to IBM Software Support. Have the output from the job which encountered this problem available.

GCL32706E  ERROR CALLING GCL01VV1 ttttttt
FUNCTION: function R15=nnnn
R0=nnnnnnnnn LOC=llll

Explanation: A problem occurred using a dataspace. ttttttt is the name of the internal table. lllll is the location where the error occurred. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL32707W  ERROR CALLING GCL01HEX;
FUNCTION: function R15=nnnn

Explanation: An error occurred using GCL01HEX to print a record. Processing continues.

User response: Please report this message to IBM Software Support.

GCL32709E  ERROR ACCESSING RDS FILE;
LOC=llllll

Explanation: An error occurred accessing the RDS file. Processing terminates.

User response: See associated GCLVSEnnE error messages. If unable to resolve problem, contact IBM Software Support. Have available the listing that contains these messages.

GCL32710E  DUPLICATE JOURNAL ENTRY;
LOC=llllll

Explanation: A duplicate record was detected. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL32711E  JOURNAL rectype RECORD NOT FOUND

Explanation: The specified journal record was not found. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL32712E  JOURNAL rectype RECORD IS WRONG VERSION

Explanation: The specified journal record was not the expected format. The journal record is printed. Processing terminates.

User response: Verify that different releases of IMS Cloning Tool have not been run using the same journal data set. If unable to resolve problem, contact IBM Software Support. Have available the listing that contains this message.

GCL32713E  UNKNOWN RECORD TYPE READ FROM: ttttttt; LOC=llllll

Explanation: An unexpected record was found in the dataspace. The record is printed. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL32720W  hh:mm:ss dsname IS EMPTY

Explanation: Informational message indicating the RDS data set is empty. There are no records in the data set to update. Processing continues.

User response: None.

GCL32721E  INVALID CONTROL RECORD READ FROM RDS_dataset_name

Explanation: Error message indicating the control record read from the RDS data set was not in the expected format. Processing continues.

User response: Verify that the data set name specified for the RDS is and that the source data set is usable by the source IMS subsystem. If so, report the problem to IBM Software Support.

GCL32735I  hh:mm:ss RDS UPDATING BYPASSED DUE TO SIMULATION

Explanation: Informational message indicating the RDS data sets will not be updated due to the presence of the SIMULATION keyword.

User response: None.

GCL32739I  hh:mm:ss PROCESSING RDS DATA SET dsname

Explanation: Informational message indicating the RDS data set to be updated.

User response: None.
GCL32740I  hh:mm:ss rectype RECORD action

Explanation:  Informational message indicating showing the RDS record type and the action that would have occurred if not for SIMULATION.

User response:  None.

GCL32744E  ERROR DETERMINING TARGET SSID LENGTH; SOURCE: ssid

Explanation:  A record in the RDS data set was found to contain an SSID matching a volume specified in the COPY command, but IMS Cloning Tool could not determine the length of the paired volume serial. If the problem is for SSID, the pairs are specified in the IMSUPDATE command.

User response:  Check the VOLPAIRS specified in the COPY command or the SSIDs specified in the IMSUPDATE command. If the problem can not be resolved, contact IBM Software Support. Have the output from the COPY step and the IMSUPDATE available.

GCL32745W rectype RECORD SSID:ssid NOT INCLUDED IN SSID PAIRS

Explanation:  The control record in the RDS data set was found to control an SSID not specified in the SSID keyword. The updating of the record is bypassed.

User response:  None.

GCL32801I hh:mm:ss REPOSITORY UPDATE STARTED - PROGRAM REV=rrr |
 hh:mm:ss REPOSITORY UPDATE COMPLETED; RETURN CODE=nnnn

Explanation:  REPOSITORY UPDATE processing message.

User response:  None.

GCL32804E ALLOCATION FAILED FOR DSNAME: dname

Explanation:  A problem occurred when attempting to allocate a data set. Processing terminates.

User response:  Review the job log for other messages indicating why the allocation failed.

GCL32805E requesttype FAILED FOR DDNAME: ddname

Explanation:  A problem occurred when attempting a dynamic allocation request for the specified DD. Processing terminates.

User response:  Report the problem to IBM Software Support. Have the output from the job which encountered this problem available.

GCL32806E ERROR CALLING GCL01VV1 tttttt
 FUNCTION: function R15=nnnn
 R0=nnnnnnnn LOC=lillll

Explanation:  A problem occurred using a dataspace. tttttt is the name of the internal table. lillll is the location where the error occurred. Processing terminates.

User response:  Contact IBM Software Support. Have available the listing that contains this message and the GCLINI parmlib member that controls execution of IMS Cloning Tool.

GCL32807W ERROR CALLING GCL01HEX;
 FUNCTION: function R15=nnnn

Explanation:  An error occurred using GCL01HEX to print a record. Processing continues.

User response:  Contact IBM Software Support.

GCL32809E ERROR ACCESSING JOURNAL FILE;
 LOC=lillll

Explanation:  A VSAM error occurred accessing the journal file. Processing terminates.

User response:  Review the associated GCLVSEnnE error messages. If unable to resolve problem, Contact IBM Software Support. Have available the listing that contains these messages.

GCL32810E DUPLICATE JOURNAL ENTRY;
 LOC=lillll

Explanation:  A duplicate record was detected. Processing terminates.

User response:  Contact IBM Software Support. Have available the listing that contains these messages.

GCL32811E JOURNAL rectype RECORD NOT FOUND

Explanation:  The specified journal record was not found. Processing terminates.

User response:  Contact IBM Software Support. Have available the listing that contains this message.
GCL32812E  JOURNAL rectype RECORD IS WRONG VERSION

Explanation: The specified journal record was not the expected format. The journal record is printed. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL32813E  UNKNOWN RECORD TYPE READ FROM: ttttttt; LOC=lillll

Explanation: An unexpected record was found in the dataspace. The record is printed. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL32814W  DATA SET MATCHES NO RENAME MASK: datasetname

Explanation: The indicated data set did not match any source rename mask. Processing continues.

User response: None required.

GCL32835I  hh:mm:ss REPOSITORY UPDATING BYPASSED DUE TO SIMULATION

Explanation: Informational message indicating that the REPOSITORY data sets will not be updated due to the presence of the SIMULATION keyword.

User response: None required.

GCL32839I  hh:mm:ss PROCESSING REPOSITORY DATASET dsname

Explanation: Informational message indicating the REPOSITORY data set to be updated.

User response: None required.

GCL32840I  hh:mm:ss rectype RECORD action

Explanation: Informational message indicating showing the repository record and the action that would have occurred if not for SIMULATION.

User response: None required.

GCL32843E  UNABLE TO RENAME DSN=source datasetname 1 USING MASK=target mask

Explanation: The new name of a data set will exceed 44 characters. Processing terminates.

User response: Correct the RENAME-MASKS specification.

GCL32899E  ERROR CALLING name FUNCTION: function R15=nnnn R0=nnnn

Explanation: An error occurred using name for requested function. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL33001I  hh:mm:ss IMSDBSTOP STARTED - PROGRAM REV=rrr | hh:mm:ss IMSDBSTOP COMPLETED; RETURN CODE=nnnn

Explanation: IMSDBSTOP command processing message.

User response: None.

GCL33005W  DEALLOCATE FAILED FOR DDNAME: ddname

Explanation: A problem occurred when attempting to deallocate a DD. Processing continues.

User response: Report the problem to IBM Software Support. Have the output from the job which encountered this problem available.

GCL33006E  ERROR CALLING GCL01VV1 ttttttt FUNCTION: function R15=nnnn R0=nnnnnnnn LOC=lillll

Explanation: A problem occurred using a dataspace. ttttttt is the name of the internal table. lillll is the location where the error occurred. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message and the GCLINI parmlib member that controls execution of GCL.

GCL33007W  ERROR CALLING GCL01HEX; FUNCTION: function R15=nnnn

Explanation: An error occurred using GCL01HEX to print a record. Processing continues.

User response: Please report this message to IBM Software Support.

GCL33008E  UNABLE TO LOAD PROGRAM: program name

Explanation: The indicated program name was not found. Processing terminates.

User response: Check that the job's //STEPLIB library is correct. If unable to resolve the problem, contact IBM Software Support.
GCL33021E  ERROR ISSUING IMS COMMAND,
               RC=nnnn  RSN=nnnn
Explanation:  An unexpected error was encountered when attempting to issue an IMS command. Processing terminates.
User response:  Contact IBM Software Support. Have available the output from the job that received this message.

GCL33022E  IMS SUBSYSTEM ssid NOT ACTIVE/DEFINED
Explanation:  An IMSDBSTOP command was specified but the target IMS subsystem is not active or defined on the zOS image.
User response:  Verify that the job was executed on the same zOS image where the IMS subsystem is active.

GCL33023I  CONNECTED TO IMS SUBSYSTEM: ssid RELEASE v.r
Explanation:  Informational message indicating that the target IMS subsystem was located and the release of the IMS subsystem.
User response:  None.

GCL33034I  USERID IS NOT AUTHORIZED TO ISSUE THE IMS COMMAND
Explanation:  A request to issue a reply to an outstanding WTOR or issue an operator command failed because of insufficient authority.
User response:  Verify that the user who submitted the job has the proper authority.

GCL33035E  COMMAND FAILED, RC=nnnn
Explanation:  An unexpected error was encountered from an attempt to issue an IMS command. Processing terminates.
User response:  Contact IBM Software Support. Have available the output from the job that received this message.

GCL33036E  NOT ALL DATABASES HAVE BEEN STOPPED WITHIN WAIT TIME LIMIT
Explanation:  After issuing an IMS DBR command, the database was not stopped within the specified WAIT limit.
User response:  View the IMS log to see why the database was not stopped. Possibly, alter the WAIT time limit specified to allow for the time for the database to be stopped.

GCL33037I  dbname IS STOPPED
Explanation:  Informational message indicating that the database is stopped.
User response:  None.

GCL33038I  WAITING FOR DATABASES TO BE STOPPED
Explanation:  Informational message indicating that the job is now waiting for the databases to be stopped.
User response:  None

GCL33039I  ALL DATABASES HAVE BEEN STOPPED
Explanation:  Informational message indicating that all databases specified on the DBD keyword have been stopped.
User response:  None

GCL33040I  IMS COMMAND: command
Explanation:  Informational message indicating that the job will issue the IMS command.
User response:  None

GCL33042I  COMMAND NOT EXECUTED DUE TO SCI NOT ACTIVE
Explanation:  Informational message indicating the command was not issued because it requires the services of the SCI address space and it was not active. If neither SCI nor IMS are active, then the job may still complete successfully.
User response:  Start the SCI address space in order to ensure that the database is stopped.

GCL33048I  OPTIONS IN EFFECT FOR THIS EXECUTION: merged options
Explanation:  Informational message indicating how COPY will handle the options. The displayed options are derived from the INI and any overriding specifications in the command input.
User response:  None.

GCL33050E  ERROR IN PARAMETERS FOR keyword
Explanation:  The parameters for the indicated keyword were incorrect. Processing terminates.
User response:  Check the keyword parameters. Mutually exclusive keywords may have been used.
GCL33051E  REQUIRED KEYWORD MISSING: keyword
Explanation: A keyword required for processing has been omitted. Processing terminates.
User response: Specify the required keyword.

GCL33052E  REQUIRED INI SECTION/TOKEN MISSING: SECTION=section
TOKEN=token 1 REQUIRED INI VALUE MISSING FOR SECTION=section
TOKEN=token 1 INVALID INI VALUE FOR SECTION=section TOKEN=token
Explanation: An error occurred validating the GCLINI parmlib member options. Processing terminates.
User response: Correct the GCLINI member in the IMS Cloning Tool PARMLIB data set.

GCL33053E  KEYWORD: keyword MAXIMUM LENGTH: nnn EXCEEDED |TOKEN: token MAXIMUM LENGTH: nnn EXCEEDED
Explanation: The operand entered for a keyword or INI token exceeded the maximum length allowed. nnn is the maximum allowed length. Processing terminates.
User response: Correct the length of the keyword’s operand or the token’s value.

GCL33054E  KEYWORD HAS MORE THAN 1 OPERAND; ONLY 1 ALLOWED: keyword
Explanation: Multiple operands were detected for a keyword; only one operand is permitted. Processing terminates.
User response: Correct the keyword to use one operand.

GCL33056E  NOTHING SPECIFIED FOR KEYWORD: keyword
Explanation: A keyword was entered without an appropriate operand. Processing terminates.
User response: Specify an appropriate operand for the keyword.

GCL33057E  DUPLICATE FOUND; KEYWORD: keyword ENTRY: entry
Explanation: The indicated ‘entry’ for the keyword was previously specified. Processing terminates.
User response: Remove the duplicate entry.

GCL33058E  INVALID VALUE IN KEYWORD: keyword VALUE: value error text
Explanation: The value in the keyword is invalid. ’error text’ indicates the problem detected with the value. Processing terminates.
User response: Correct the value specified in the keyword.

GCL33060E  DDNAME MISSING: ddname
Explanation: A required DD was not specified in the JCL. Processing terminates.
User response: Add the require DD to the JCL.

GCL33061E  call FAILED FOR DD=ddname, RC=nnnn
Explanation: A error occurred when attempting to access a data set. Processing terminates.
User response: Review the system log for any error messages. If unable to resolve the problem, contact IBM Software Support.

GCL33062E  UNABLE TO LOCATE dbdname IN ACBLIB
Explanation: An error was encountered when attempting to locate a member from an ACBLIB data set. Processing terminates.
User response: Verify the correct ACBLIB data set(s) was specified in the job. Review the system log for any error messages. If unable to resolve the problem, Contact IBM Software Support.

GCL33065E  module name IS NOT A DBD
Explanation: A module was found in an ACBLIB data set that matched a DBD name but the module is not a DMB. Processing terminates.
User response: Verify the correct ACBLIB data set(s) was specified in the job. Review the system log for any error messages. If unable to resolve the problem, Contact IBM Software Support.

GCL33066E  UNABLE TO READ ACBLIB MEMBER: dbdname
Explanation: An error was encountered when attempting to read a member from an ACBLIB data set. Processing terminates.
User response: Verify the correct ACBLIB data set(s) was specified in the job. Review the system log for any error messages. If unable to resolve the problem, Contact IBM Software Support.
**GCL33067E** UNABLE TO FIND DATA SET NAME FOR DBD: *dbname* DDNAME: *ddname*

**Explanation:** An error was encountered when attempting to read a member from an MDA data set. Processing terminates.

**User response:** Verify the correct MDA data set(s) was specified in the job. Review the system log for any error messages. If unable to resolve the problem, Contact IBM Software Support.

---

**GCL33069E** DBD *dbname*: *dbtype* IS AN UNSUPPORTED DB TYPE

**Explanation:** The DB type specified for the DBD is not a supported database type for IMS Cloning Tool. Processing terminates.

**User response:** The *dbname* specified cannot be stopped using IMS Cloning Tool. Verify the correct *dbname* was specified.

---

**GCL33070I** STOPPING DBD: *dbname*

**Explanation:** Informational message indicating that the job will issue the command to stop the database in the target IMS subsystem.

**User response:** None.

---

**GCL33072I** 'QUIESCE' is not supported on this IMS version.

**Explanation:** To use a database quiesce command to stop the source databases IMS must be at version 11 or later.

**User response:** Specify either 'DBR' or 'DBB' for STOPCMD.

---

**GCL33072E** UNABLE TO LOAD PROGRAM: *program name*

**Explanation:** The indicated program name was not found. Processing terminates.

**User response:** Check that the job’s //STEPLIB library is correct. If unable to resolve the problem, Contact IBM Software Support.

---

**GCL33072E** ERROR CALLING GCL01VV1 *tttttttt* FUNCTION: function R15=nnnn R0=nnnnnnnn LOC=llllll

**Explanation:** A problem occurred using a dataspace. *tttttttt* is the name of the internal table. *llllll* is the location where the error occurred. Processing terminates.

**User response:** Contact IBM Software Support. Have available the listing that contains this message and the GCLINI parmlib member that controls execution of GCL.

---

**GCL33072W** ERROR CALLING GCL01HEX; FUNCTION: function R15=nnnn

**Explanation:** An error occurred using GCL01HEX to print a record. Processing continues.

**User response:** Please report this message to IBM Software Support.

---

**GCL33072E** IMS SUBSYSTEM *ssid* NOT ACTIVE/DEFINED

**Explanation:** An IMSDBSTART command was specified but the target IMS subsystem is not active or defined on the z/OS image.

**User response:** Contact IBM Software Support. Have available the output from the job that received this message.

---

**GCL33073I** CONNECTED TO IMS SUBSYSTEM: *ssid* RELEASE v.r

**Explanation:** Informational message indicating that the target IMS subsystem was located and the release of the IMS subsystem is active.

**User response:** None.
GCL33534E USERID IS NOT AUTHORIZED TO ISSUE THE IMS COMMAND
Explanation: A request to issue a reply to an outstanding WTOR or issue an operator command failed because of insufficient authority.
User response: Verify that the user who submitted the job has the proper authority.

GCL33535E COMMAND FAILED, RC=nnn
Explanation: An unexpected error was encountered from an attempt to issue an IMS command. Processing terminates.
User response: Contact IBM Software Support. Have available the output from the job that received this message.

GCL33540I IMS COMMAND: command
Explanation: Informational message indicating that the job will issue the IMS command.
User response: None.

GCL33541I COMMAND NOT EXECUTED DUE TO SIMULATION MODE
Explanation: Informational message indicating that an actual command was not issued because the SIMULATE keyword was specified.
User response: Verify that a simulation was desired.

GCL33548I OPTIONS IN EFFECT FOR THIS EXECUTION: merged options
Explanation: Informational message indicating how COPY will handle the options. The displayed options are derived from the INI and any overriding specifications in the command input.
User response: None.

GCL33550E ERROR IN PARAMETERS FOR keyword
Explanation: The parameters for the indicated keyword were incorrect. Processing terminates.
User response: Check the keyword parameters. Mutually exclusive keywords may have been used.

GCL33551E REQUIRED KEYWORD MISSING: keyword
Explanation: A keyword required for processing has been omitted. Processing terminates.
User response: A keyword required for processing has been omitted. Processing terminates. Specify the required keyword.

GCL33552E REQUIRED INI SECTION/TOKEN MISSING: SECTION=section TOKEN=token | REQUIRED INI VALUE MISSING FOR SECTION=section TOKEN=token
Explanation: An error occurred validating the GCLINI parmlib member options. Processing terminates.
User response: Correct the GCLINI member in the IMS Cloning Tool PARMLIB data set.

GCL33553E KEYWORD: keyword MAXIMUM LENGTH: mnn EXCEEDED | TOKEN: token MAXIMUM LENGTH: mnn EXCEEDED
Explanation: The operand entered for a keyword or INI token exceeded the maximum length allowed. mnn is the maximum allowed length. Processing terminates.
User response: Correct the length of the keyword's operand or the token's value.

GCL33554E KEYWORD HAS MORE THAN 1 OPERAND; ONLY 1 ALLOWED: keyword
Explanation: Multiple operands were detected for a keyword; only one operand is permitted. Processing terminates.
User response: Correct the keyword to use one operand.

GCL33556E NOTHING SPECIFIED FOR KEYWORD: keyword
Explanation: A keyword was entered without an appropriate operand. Processing terminates.
User response: Specify an appropriate operand for the keyword.

GCL33557E DUPLICATE FOUND; KEYWORD: keyword ENTRY: entry
Explanation: The indicated 'entry' for the keyword was previously specified. Processing terminates.
User response: Remove the duplicate entry.

GCL33558E INVALID VALUE IN KEYWORD: keyword VALUE: value error text
Explanation: The value in the keyword is invalid. 'error text' indicates the problem detected with the value. Processing terminates.
User response: Correct the value specified in the keyword.
GCL33560E DDNAME MISSING: ddname
Explanation: A required DD was not specified in the JCL. Processing terminates.
User response: Add the require DD to the JCL.

GCL33561E call FAILED FOR DD=ddname, RC=nnnn
Explanation: A error occurred when attempting to access a data set. Processing terminates.
User response: Review the system log for any error messages. If unable to resolve the problem, contact IBM Software Support.

GCL33562E UNABLE TO LOCATE dbdname IN ACBLIB
Explanation: An error was encountered when attempting to locate a member from an ACBLIB data set. Processing terminates.
User response: Verify the correct ACBLIB data set(s) was specified in the job. Review the system log for any error messages. If unable to resolve the problem, contact IBM Software Support.

GCL33563E module name IS NOT A DBD
Explanation: A module was found in an ACBLIB data set that matched a DBD name but the module is not a DMB. Processing terminates.
User response: Verify the correct ACBLIB data set(s) was specified in the job. Review the system log for any error messages. If unable to resolve the problem, contact IBM Software Support.

GCL33564E UNABLE TO READ ACBLIB MEMBER: dbdname
Explanation: An error was encountered when attempting to read a member from an ACBLIB data set. Processing terminates.
User response: Verify the correct ACBLIB data set(s) was specified in the job. Review the system log for any error messages. If unable to resolve the problem, contact IBM Software Support.

GCL33565E UNABLE TO FIND DATA SET NAME FOR DBD: dbdname DDNAME: ddname
Explanation: An error was encountered when attempting to read a member from an MDA data set. Processing terminates.
User response: Verify the correct MDA data set(s) was specified in the job. Review the system log for any error messages. If unable to resolve the problem, contact IBM Software Support.

GCL33566E DBD dbdname dbtype IS AN UNSUPPORTED DB TYPE
Explanation: The DB type specified for the DBD is not a supported database type for IMS Cloning Tool. Processing terminates.
User response: The dbdname specified can not be started using IMS Cloning Tool. Verify the correct dbdname was specified.

GCL33570I STARTING DBD: dbdname
Explanation: Informational message indicating that the job will issue the command to start the database in the IMS subsystem.
User response: None.

GCL34001I hh:mm:ss IMSDBREFRESH STARTED - PROGRAM REV=rrr | hh:mm:ss IMSDBREFRESH COMPLETED;
RETURN CODE=nnnn
Explanation: IMSDBREFRESH command processing message.
User response: None.

GCL34005W DEALLOCATE FAILED FOR DDNAME: ddname
Explanation: A problem occurred when attempting to deallocate a DD. Processing continues.
User response: Report the problem to IBM Software Support. Have the output from the job which encountered this problem available.

GCL34006E ERROR CALLING GCL01VV1 tttttttt FUNCTION: function R15=nnnn R0=nnnnnnnn LOC=llllll
Explanation: A problem occurred using a dataspace. tttttttt is the name of the internal table. lllll is the location where the error occurred. Processing terminates.
User response: Contact IBM Software Support. Have available the listing that contains this message and the GCLINI parmlib member that controls execution of GCL.

GCL34007W ERROR CALLING GCL01HEX;
FUNCTION: function R15=nnnn
Explanation: An error occurred using GCL01HEX to print a record. Processing continues.
User response: Please report this message to IBM Software Support.
GCL34008E  UNABLE TO LOAD PROGRAM:
    program name
Explanation:  The indicated program name was not found. Processing terminates.
User response:  Check that the job's //STEPLIB library is correct. If unable to resolve the problem, contact IBM Software Support.

GCL34009E  ERROR ACCESSING ddname FILE;
    LOC=llll
Explanation:  An error occurred accessing the specified file. Processing terminates.
User response:  View joblog for other messages. If unable to resolve problem, Contact IBM Software Support. Have available the listing that contains these messages.

GCL3401E  ERROR ISSUING IMS COMMAND,
    RC=nnnn RSN=nnnn
Explanation:  An unexpected error was encountered when attempting to issue an IMS command. Processing terminates.
User response:  Contact IBM Software Support. Have available the output from the job that received this message.

GCL34022E  IMS SUBSYSTEM ssid NOT ACTIVE/DEFINED
Explanation:  An IMSDBREFRESH command was specified but the target IMS subsystem is not active or defined on the z/OS image.
User response:  Verify that the job was executed on the same z/OS image where the IMS subsystem is active.

GCL34034E  USERID IS NOT AUTHORIZED TO ISSUE THE IMS COMMAND
Explanation:  A request to issue a reply to an outstanding WTOR or issue an operator command failed because of insufficient authority.
User response:  Verify that the user who submitted the job has the proper authority.

GCL34035E  COMMAND FAILED, RC=nnnn
Explanation:  An unexpected error was encountered from an attempt to issue an IMS command. Processing terminates.
User response:  Contact IBM Software Support. Have available the output from the job that received this message.

GCL34041I  CMDNS COMMAND: command
Explanation:  Informational message indicating that the job will issue the IMS command.
User response:  None.

GCL34041E  GCL0900 UNEXPECTED RESULTS;
    error text
Explanation:  An unexpected condition occurred while calling program GCL0900. 'error text' has a description of the problem. Processing terminates.
User response:  Contact IBM Software Support. Have available the listing that contains this message.

GCL3404II  COMMAND NOT EXECUTED DUE TO SIMULATION MODE
Explanation:  Informational message indicating that an actual command was not issued because the SIMULATE keyword was specified.
User response:  Verify that a simulation was desired.

GCL34048I  OPTIONS IN EFFECT FOR THIS EXECUTION: merged options
Explanation:  Informational message indicating how COPY will handle the options. The displayed options are derived from the INI and any overriding specifications in the command input.
User response:  None.

GCL34049I  EXPANDING DB MASK: dbmask
Explanation:  A wildcard was used in a value for the DBD keyword. IMS Cloning Tool will select the DB names found in the ACB library that match the dbmask
User response:  None.

GCL34050E  ERROR IN PARAMETERS FOR keyword
Explanation:  The parameters for the indicated keyword were incorrect. Processing terminates.
User response:  Check the keyword parameters. Mutually exclusive keywords may have been used.
Chapter 10. Reference: Messages

GCL34051E  REQUIRED KEYWORD MISSING: keyword
Explanation: A keyword required for processing has been omitted. Processing terminates.
User response: Specify the required keyword.

GCL34052E  REQUIRED INI SECTION/TOKEN MISSING: SECTION=section TOKEN=token
REQUIRED INI VALUE MISSING FOR SECTION=section TOKEN=token
REQUIRED INI VALUE FOR SECTION=section TOKEN=token
Explanation: An error occurred validating the GCLINI parmlib member options. Processing terminates.
User response: Correct the GCLINI member in the IMS Cloning Tool PARMLIB data set.

GCL34053E  KEYWORD: keyword MAXIMUM LENGTH: nnn EXCEEDED | TOKEN: token MAXIMUM LENGTH: nnn EXCEEDED
Explanation: The operand entered for a keyword or INI token exceeded the maximum length allowed. nnn is the maximum allowed length. Processing terminates.
User response: Correct the length of the keyword’s operand or the token’s value.

GCL34054E  KEYWORD HAS MORE THAN 1 OPERAND; ONLY 1 ALLOWED: keyword
Explanation: Multiple operands were detected for a keyword; only one operand is permitted. Processing terminates.
User response: Correct the keyword to use one operand.

GCL34056E  NOTHING SPECIFIED FOR KEYWORD: keyword
Explanation: A keyword was entered without an appropriate operand. Processing terminates.
User response: Specify an appropriate operand for the keyword.

GCL34057E  DUPLICATE FOUND; KEYWORD: keyword ENTRY: entry
Explanation: The indicated ‘entry’ for the keyword was previously specified. Processing terminates.
User response: Remove the duplicate entry.

GCL34058E  INVALID VALUE IN KEYWORD: keyword VALUE: value error text
Explanation: The value in the keyword is invalid. ‘error text’ indicates the problem detected with the value. Processing terminates.
User response: Correct the value specified in the keyword.

GCL34059E  NO VALID DBDS TO PROCESS
Explanation: After performing a compatibility check on the source and target DBDs, there are no valid DBDs specified on the DBD keyword to process. Processing terminates.
User response: Review and correct previous messages indicating the incompatibilities between the DBDs specified.

GCL34060E  DUPLICATE FOUND; KEYWORD: keyword ENTRY: entry
Explanation: The indicated ‘entry’ for the keyword was previously specified. Processing terminates.
User response: Remove the duplicate entry.

GCL34061E  call FAILED FOR DD=ddname, RC=nnnn
Explanation: A error occurred when attempting to access a data set. Processing terminates.
User response: Review the system log for any error messages. If unable to resolve the problem, contact IBM Software Support.

GCL34062E  UNABLE TO LOCATE dbdname IN ACBLIB
Explanation: An error was encountered when attempting to locate a member from an ACBLIB data set. Processing terminates.
User response: Verify the correct ACBLIB data set(s) was specified in the job. Review the system log for any error messages. If unable to resolve the problem, contact IBM Software Support.

GCL34065E  module name IS NOT A DBD
Explanation: A module was found in an ACBLIB data set that matched a DBD name but the module is not a DMB. Processing terminates.
User response: Verify the correct ACBLIB data set(s) was specified in the job. Review the system log for any error messages. If unable to resolve the problem, contact IBM Software Support.
**GCL34066E • GCL34179E**

**GCL34066E** UNABLE TO READ ACBLIB MEMBER: *dbname*

**Explanation:** An error was encountered when attempting to read a member from an ACBLIB data set. Processing terminates.

**User response:** Verify the correct ACBLIB data set(s) was specified in the job. Review the system log for any error messages. If unable to resolve the problem, contact IBM Software Support.

**GCL34067E** UNABLE TO FIND DATA SET NAME FOR DBD: *dbname DDNAME: ddname*

**Explanation:** An error was encountered when attempting to read a member from an MDA data set. Processing terminates.

**User response:** Verify the correct MDA data set(s) was specified in the job. Review the system log for any error messages. If unable to resolve the problem, contact IBM Software Support.

**GCL34068E** UNPAIRED ENTRIES IN KEYWORD: *keyword*

**Explanation:** The keyword requires pairs of entries. An odd number of entries was found. Processing terminates.

**User response:** Correct the keyword specification.

**GCL34069E** DBD *dbname* DBTYPE IS AN UNSUPPORTED DB TYPE'

**Explanation:** The DB type specified for the DBD is not a supported database type for IMS Cloning Tool. Processing terminates.

**User response:** The dbname specified can not be refreshed using IMS Cloning Tool. Verify the correct dbname was specified.

**GCL34071E** UNEQUAL ENTRIES IN PAIRED KEYWORDS: *keyword1 AND keyword2*

**Explanation:** There is not the same number of entries for the specified paired keywords. Processing terminates.

**User response:** Correct the keyword specifications.

**GCL34072E** ‘QUIESCE’ is not supported on this IMS version.

**Explanation:** To use a database quiesce command to stop the source databases IMS must be at version 11 or later.

**User response:** Specify either ‘DBR’ or ‘DBB’ for STOPCMD.

**GCL34074E** NAME USED AS BOTH SOURCE AND TARGET: name IN KEYWORD: *keyword*

**Explanation:** A entry was specified as both a source in the indicated keywords. Processing terminates.

**User response:** Correct the keyword specifications.

**GCL34080E** LOGICALLY RELATED DBD *dbname* FOR *dbname* NOT SPECIFIED

**Explanation:** A dbname in the DBD or TGT-DBD keyword was specified that is logically related. The logically related dbname was not specified in the DBD or TGT-DBD keyword. The DBD is not copied.

**User response:** When copying a DB it is recommended that all logically related DBs be copied at the same time. Correct the DBD or TGT-DBD keyword so that all logically related DBs are specified. If not all logically related DBs need to be copied, then LOGICALLY-RELATED(N) may be specified.

**GCL34085I** DSNS FOR KEYWORD: *keyword* PROCESSING SEQUENCE *list of dsns number*

**Explanation:** Parsing found the listed dsns for the keyword. The processing sequence number shows the order that the dsns were entered and will be the order used during processing.

**User response:** No response required.

**VCR34086E** IMS SDFSRESL must be in STEPLIB for IMSDBREFRESH

**Explanation:** IMS Cloning Tool needs to invoke some DBRC services in order to perform the processing for updating the target database but it was unable to LOAD the necessary modules.

**User response:** Update the JCL so that the IMS.SDFSRESL data set is included in the STEPLIB/JOBLIB/LINKLIST concatenation.

**GCL34101I** hh:mm:ss DB COMPATIBILITY STARTED - PROGRAM REV=rrr1 hh:mm:ss DB COMPATIBILITY COMPLETED; RETURN CODE=nnnn

**Explanation:** DB COMPATIBILITY processing message.

**User response:** None.

**GCL34179E** SOURCE *dbname* AND TARGET *dbname* ARE INCOMPATIBLE: reason

**Explanation:** For the reason listed, IMS Cloning Tool determined that the source dbname could not be copied to the target dbname. The DBD is not copied.
User response: Verify that the source and target dbdnames are correct. Verify that the attributes described in the 'reason' match for the DBDs in the source and target systems.

GCL34181E  SOURCE dbdname CAN NOT BE COPIED: reason
Explanation: For the reason listed, IMS Cloning Tool determined that the source dbdname could not be copied to the target dbdname. The DBD is not copied.
User response: Correct the condition listed for the reason IMS Cloning Tool could not copy the database.

GCL34201I hh:mm:ss STOPPING location DBS
STARTED - PROGRAM REV=rrr
hh:mm:ss STOPPING DBS
COMPLETED; RETURN CODE=nnnn
Explanation: The stopping databases processing message.
User response: None.

GCL34221E ERROR ISSUING IMS COMMAND,
RC=nnnn RSN=nnnn
Explanation: An unexpected error was encountered when attempting to issue an IMS command. Processing terminates.
User response: Contact IBM Software Support. Have available the output from the job that received this message.

GCL34222E IMS SUBSYSTEM ssid NOT ACTIVE/DEFINED
Explanation: An IMSDBSTOP command was specified but the target IMS subsystem is not active or defined on the z/OS image.
User response: Verify that the job was executed on the same z/OS image where the IMS subsystem is active.

GCL34223I CONNECTED TO IMS SUBSYSTEM:
ssid RELEASE v.r
Explanation: Informational message indicating that the target IMS subsystem was located and the release of the IMS subsystem.
User response: None.

GCL34224I SCI IMSPLEX: implex name IS NOT ACTIVE
Explanation: IMS Cloning Tool was unable to connect to the SCI for the implex name. The IMS Cloning Tool job will be unable to issue any IMS commands
User response: If the IMSDBREFRESH command cannot issue commands to stop the databases it may not be able to refresh the databases if IMS has the databases allocated. Verify the correct IMSPLEX value was specified and that the correct SCI address space is started on the system the IMS Cloning Tool is being run on.

GCL34234E USERID IS NOT AUTHORIZED TO ISSUE THE IMS COMMAND
Explanation: A request to issue a reply to an outstanding WTOR or issue an operator command failed because of insufficient authority.
User response: Verify that the user who submitted the job has the proper authority.

GCL34235E COMMAND FAILED, RC=nnnn
Explanation: An unexpected error was encountered from an attempt to issue an IMS command. Processing terminates.
User response: Contact IBM Software Support. Have available the output from the job that received this message.

GCL34236E NOT ALL DATABASES HAVE BEEN STOPPED WITHIN WAIT TIME LIMIT
Explanation: After issuing an IMS DBR command, the database was not stopped within the specified WAIT limit.
User response: View the IMS log to see why the database was not stopped. Possibly, alter the WAIT time limit specified to allow for the time for the database to be stopped.

GCL34237I dbdname IS STOPPED
Explanation: Informational message indicating that the database is stopped.
User response: None.

GCL34238I WAITING FOR DATABASES TO BE STOPPED
Explanation: Informational message indicating that the job is now waiting for the databases to be stopped.
User response: None.

GCL34239I ALL DATABASES HAVE BEEN STOPPED
Explanation: Informational message indicating that all databases specified on the DBD keyword have been stopped.
User response: None.
**GCL34241I • GCL34370I**

---

**GCL34241I  COMMAND NOT EXECUTED DUE TO SIMULATION MODE**

Explanation: Informational message indicating that an actual command was not issued because the SIMULATE keyword was specified.

User response: Verify that a simulation was desired.

---

**GCL34241I  COMMAND NOT EXECUTED DUE TO SIMULATION MODE**

Explanation: Informational message indicating that an actual command was not issued because the SIMULATE keyword was specified.

User response: Verify that a simulation was desired.

---

**GCL34270I  STOPPING DB: dbname**

Explanation: Informational message indicating that the job will issue the command to stop the database in the target IMS subsystem.

User response: None.

---

**GCL34301I  hh:mm:ss STARTING location DBS**

**Explanation:** The starting databases processing message.

User response: None.

---

**GCL34321E  ERROR ISSUING IMS COMMAND, RC=nnnn RSN=nnnn**

Explanation: An unexpected error was encountered when attempting to issue an IMS command. Processing terminates.

User response: Contact IBM Software Support. Have available the output from the job that received this message.

---

**GCL34322E  IMS SUBSYSTEM ssid NOT ACTIVE/DEFINED**

Explanation: An IMSDBSTART command was specified but the target IMS subsystem is not active or defined on the z/OS image.

User response: Verify that the job was executed on the same z/OS image where the IMS subsystem is active.

---

**GCL34323I  CONNECTED TO IMS SUBSYSTEM: ssid RELEASE v.r**

Explanation: Informational message indicating that the target IMS subsystem was located and the release of the IMS subsystem.

User response: None.

---

**GCL34334E  USERID IS NOT AUTHORIZED TO ISSUE THE IMS COMMAND**

Explanation: A request to issue a reply to an outstanding WTOR or issue an operator command failed because of insufficient authority.

User response: Verify that the user who submitted the job has the proper authority.

---

**GCL34335E  COMMAND FAILED, RC=nnnn**

Explanation: An unexpected error was encountered from an attempt to issue an IMS command. Processing terminates.

User response: Contact IBM Software Support. Have available the output from the job that received this message.

---

**GCL34340I  IMS COMMAND: command**

Explanation: Informational message indicating that the job will issue the IMS command.

User response: None.

---

**GCL34341I  COMMAND NOT EXECUTED DUE TO SIMULATION MODE**

Explanation: Informational message indicating that an actual command was not issued because the SIMULATE keyword was specified.

User response: Verify that a simulation was desired.

---

**GCL34370I  STARTING DB: dbname**

Explanation: Informational message indicating that the job will issue the command to start the database in the IMS subsystem.

User response: None.
### GCL34001I

**hh:mm:ss** DATA SET COPY STARTED - PROGRAM REV=rrr  | hh:mm:ss DATA SET COPY COMPLETED; RETURN CODE=nnnn

**Explanation:** DATA SET COPY processing message.

**User response:** None.

### GCL34504E

**ALLOCATION FAILED FOR DSNAME:** *dsname*

**Explanation:** A problem occurred when attempting to allocate a data set. Processing terminates.

**User response:** Review the job log for other messages indicating why the allocation failed.

### GCL34505E

**INFO RETRIEVAL FAILED FOR DDNAME:** *ddname*

**Explanation:** A problem occurred when attempting to retrieve info for a DD. Processing terminates.

**User response:** Review the job log for other messages indicating why the retrieve info dynamic allocation request failed. If unable to correct the problem, contact IBM Software Support. Have the output from the job which encountered this problem available.

### GCL34663E

**DB dbdname CURRENTLY AUTHORIZED FOR UPDATE BY:** *ims-ssid*

**Explanation:** FUZZY-COPY(Y) and VERIFY-NO-UPDATERS(Y) were specified, and at least one of the source databases is currently authorized by an IMS subsystem or batch job with update capability.

**User response:** If the databases need to be guaranteed that no pointer errors will exist when performing a fuzzy copy of the source databases, then the IMSDBREFRESH command must be run when no IMS subsystems or batch jobs have the source databases allocated authorized for update. If the possibility of some pointer errors in the target databases is acceptable then specify VERIFY-NO-UPDATERS(N) and rerun the IMSDBREFRESH job.

### GCL34669W

**GQSCAN FAILED FOR DSN:** *dataset name*

**Explanation:** An error occurred when attempting to obtain information on an allocated data set. The job step will terminate with a return code 4 or higher.

**User response:** Review the system log for any additional error messages. If you cannot resolve the problem, report the problem to IBM Software Support. Have the output from the job that encountered this problem available.

### GCL34670I

**dataset name CURRENTLY ALLOCATED BY:** *JOBNAME* jobname ON *system*

**Explanation:** IMS Cloning Tool could not access a database data set. This message shows the jobs that currently have that database data set allocated.

**User response:** Rerun the IMSDBREFRESH job when the databases that are to be refreshed are not being accessed.

### GCL35001I

**IMSDBCLEAN STARTED - PROGRAM REV=rrr  | IMSDBCLEAN COMPLETED; RETURN CODE=nnnn**

**Explanation:** IMSDBCLEAN command processing message.

**User response:** None.

### GCL35501I

**hh:mm:ss** UNLOAD DATABASE STARTED - PROGRAM REV=rrr  | UNLOAD DATABASE COMPLETED; RETURN CODE=nnnn

**Explanation:** UNLOAD DATABASE command processing message.

**User response:** No action required.
GCL35505W  DEALLOCATE FAILED FOR DDNAME: ddname

Explanation: A problem occurred when attempting to deallocate a DD. Processing continues.

User response: If unable to resolve the problem, contact IBM Software Support. Have the output from the job which encountered this problem available.

GCL35506E  ERROR CALLING GCL01VV1; FUNCTION: function R15=nnnn
            R0=nnnnnnnnn; LOC=lllll

Explanation: A problem occurred using a dataspace. ttttttt is the name of the internal table. lllll is the location where the error occurred. Processing terminates.

User response: If unable to resolve the problem, contact IBM Software Support. Have available the listing that contains this message and the parmlib member that controls execution of IMS Cloning Tool.

GCL35507W  ERROR CALLING GCL01HEX;
            FUNCTION: function R15=nnnn

Explanation: A problem occurred using a dataspace. ttttttt is the name of the internal table. lllll is the location where the error occurred. Processing terminates.

User response: If unable to resolve the problem, contact IBM Software Support.

GCL35509E  ERROR ACCESSING ddname FILE;
            LOC=lllll

Explanation: An error occurred accessing the specified file. Processing terminates.

User response: View job log for other messages. If unable to resolve the problem, contact IBM Software Support. Have available the listing that contains these messages.

GCL35510E  Primary Index ddname not being processed

Explanation: When an HIDAM or PHIDAM source data base has MASKRULES defined for it, the primary index DBD must also be included in the list of databases to be processed by the IMSDBREFRESH command. The primary index is required in order to be able to unload the source database prior to applying any masking.

User response: Either remove the MASKRULEs for the HIDAM or PHIDAM database, or include the primary index DBD in the list of databases to be refreshed by the IMSDBREFRESH command.

GCL35511E  JOURNAL rectype RECORD NOT FOUND

Explanation: The specified journal record was not found. Processing terminates.

User response: If unable to resolve the problem, contact IBM Software Support. Have available the listing that contains this message.

GCL35512E  JOURNAL rectype RECORD IS WRONG VERSION

Explanation: The specified journal record was not the expected format. The journal record is printed. Processing terminates.

User response: Verify that different releases of IMS Cloning Tool have not been run using the same journal data set. If unable to resolve the problem, contact IBM Software Support. Have available the listing that contains this message.

GCL35535I  hh:mm:ss UNLOAD Utility ended, return code nnnn

Explanation: The unload utility has completed for the current database. The return code from the utility is shown.

User response: No response required.

GCL36001I  hh:mm:ss MASKING DEFINITION PARSER Started - Program Rev=rrr
            hh:mm:ss MASKING DEFINITION PARSER Completed; Return Code=nnnn

Explanation: Masking definition parser processing message.

User response: No response required.

GCL36050E  ERROR IN PARAMETERS FOR keyword
<table>
<thead>
<tr>
<th>Error Code</th>
<th>Description</th>
<th>User Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCL36051E</td>
<td>REQUIRED KEYWORD MISSING: keyword</td>
<td>Specify the required keyword.</td>
</tr>
<tr>
<td>Explanation</td>
<td>A keyword required for processing has been omitted. Processing terminates.</td>
<td></td>
</tr>
<tr>
<td>User response</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GCL36053E</td>
<td>KEYWORD: keyword MAXIMUM LENGTH: nnn EXCEEDED</td>
<td>TOKEN: token MAXIMUM LENGTH: nnn EXCEEDED</td>
</tr>
<tr>
<td>Explanation</td>
<td>The operand entered for a keyword or INI token exceeded the maximum length allowed. nnn is the maximum allowed length. Processing terminates.</td>
<td></td>
</tr>
<tr>
<td>User response</td>
<td>Correct the length of the keyword's operand or the token's value.</td>
<td></td>
</tr>
<tr>
<td>GCL36054E</td>
<td>KEYWORD HAS MORE THAN 1 OPERAND; ONLY 1 ALLOWED: keyword</td>
<td>Correct the keyword to use one operand.</td>
</tr>
<tr>
<td>Explanation</td>
<td>Multiple operands were detected for a keyword; only one operand is permitted. Processing terminates.</td>
<td></td>
</tr>
<tr>
<td>User response</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GCL36056E</td>
<td>NOTHING SPECIFIED FOR KEYWORD: keyword</td>
<td>Specify an appropriate operand for the keyword.</td>
</tr>
<tr>
<td>Explanation</td>
<td>A keyword was entered without an appropriate operand. Processing terminates.</td>
<td></td>
</tr>
<tr>
<td>User response</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GCL36057E</td>
<td>DUPLICATE FOUND; KEYWORD: keyword ENTRY: entry</td>
<td>Remove the duplicate entry.</td>
</tr>
<tr>
<td>Explanation</td>
<td>The indicated entry for the keyword was previously specified. Processing terminates.</td>
<td></td>
</tr>
<tr>
<td>User response</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GCL36060E</td>
<td>DDNAME MISSING: ddname</td>
<td>Add the required DD to the JCL.</td>
</tr>
<tr>
<td>Explanation</td>
<td>A required DD was not specified in the JCL. Processing terminates.</td>
<td></td>
</tr>
<tr>
<td>User response</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GCL36061E</td>
<td>call FAILED FOR DD=ddname, RC=nnn</td>
<td>Review the system log for any error messages. If unable to resolve the problem, contact IBM Software Support.</td>
</tr>
<tr>
<td>Explanation</td>
<td>A error occurred when attempting to access a data set. Processing terminates.</td>
<td></td>
</tr>
<tr>
<td>User response</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GCL36070E</td>
<td>KEYWORD: keyword IS REQUIRED WHEN KEYWORD: keyword IS SPECIFIED</td>
<td>Specify the required keyword.</td>
</tr>
<tr>
<td>Explanation</td>
<td>The two keywords shown must both be specified when either keyword is specified. Processing terminates.</td>
<td></td>
</tr>
<tr>
<td>User response</td>
<td>Either specify the second keyword or remove the first one and resubmit the job.</td>
<td></td>
</tr>
<tr>
<td>GCL36071E</td>
<td>KEYWORD: keyword IS NOT ALLOWED WHEN KEYWORD: keyword IS SPECIFIED</td>
<td>Remove one of the keywords and resubmit the job.</td>
</tr>
<tr>
<td>Explanation</td>
<td>The two keywords shown are mutually exclusive and cannot both be specified. Processing terminates.</td>
<td></td>
</tr>
<tr>
<td>User response</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GCL36071E</td>
<td>INVALID COMMAND: command IN GCLMSKDF INPUT</td>
<td>Change the command to a valid syntax and resubmit the job.</td>
</tr>
<tr>
<td>Explanation</td>
<td>An invalid command name was found in the MASKDEF definition DD, GCLMSKDF. Processing terminates.</td>
<td></td>
</tr>
<tr>
<td>User response</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GCL36073E</td>
<td>INVALID MASKDEF COMMAND, SEGMENT: segname NOT FOUND IN DATABASE: dbdname</td>
<td>INVALID MASKDEF COMMAND, FIELD: fldname NOT FOUND IN SEGMENT: segname</td>
</tr>
<tr>
<td>Explanation</td>
<td>The MASKDEF command specifies an invalid combination for the SEGMENT/DATABASE or the FIELD/SEGMENT.</td>
<td></td>
</tr>
<tr>
<td>User response</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GCL36074E</td>
<td>INVALID MASKDEF COMMAND, START: startpos IS GREATER THAN SEGMENT: segname LENGTH: length</td>
<td>INVALID MASKDEF COMMAND, BYTES: bytes IS GREATER THAN SEGMENT: segname LENGTH: length</td>
</tr>
<tr>
<td>Explanation</td>
<td>Validation of the starting position, length of the field, and the total number of bytes to be masked has failed for the specified segment.</td>
<td></td>
</tr>
<tr>
<td>User response</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Chapter 10. Reference: Messages  383
values specified are valid for the segment in error and resubmit the job.

GCL36075E  **MASKDEF COMMANDS FOR DATABASE: dbname SEGMENT: segname ATTEMPTING TO MASK THE SAME BYTES**

**Explanation:** There are multiple MASKDEF commands for the same database segment which are attempting to mask the same bytes.

**User response:** Make sure there is no overlapping of the masked bytes for a database segment and resubmit the job.

GCL36076E  **INVALID MASKDEF COMMAND, BYTES: number IS NOT WITHIN BOUNDS FOR DATATYPE: datatype**

**Explanation:** The number of bytes specified for masking is not appropriate for the datatype specified.

**User response:** Check the allowed length or range for the specified datatype and ensure that the number of bytes being masked is appropriate.

GCL36077E  **MASKDEF COMMAND FOR DATABASE: dbname SEGMENT: segname ATTEMPTING TO MASK LOGICALLY RELATED DATA**

**Explanation:** The MASKDEF command for the specified database and segment is not allowed because the segment is involved in a logical relationship. Logically related segments cannot be masked.

**User response:** Remove the MASKDEF command in error and resubmit the job.

GCL36080I  **MASKDEF COMMAND FOR DATABASE: dbname IGNORED, DATABASE IS NOT BEING MASKED**

**Explanation:** The MASKDEF command for the specified database and segment is not allowed because the segment is involved in a logical relationship. Logically related segments cannot be masked.

**User response:** No action is required.

GCL36081I  **MASKDEF COMMAND FOR DATABASE: dbname IGNORED, DATABASE IS NOT BEING MASKED**

**Explanation:** The MASKDEF command for the specified database and segment is not allowed because the segment is involved in a logical relationship. Logically related segments cannot be masked.

**User response:** No action is required.

GCL36101I  **HH:MM:SS DATA MASKING Started - Program Rev=rrrr | HH:MM:SS DATA MASKING Completed; Return Code=nnnn**

**Explanation:** Data masking is processing.

**User response:** No action is required.

GCL36105W  **DEALLOCATE FAILED FOR DDNAME: ddname**

**Explanation:** A problem occurred when attempting to deallocate a DD. Processing continues.

**User response:** If unable to resolve the problem, contact IBM Software Support. Have the output from the job which encountered this problem available.

GCL36107W  **ERROR CALLING GCL01HEX; FUNCTION: function R15=nnnn**

**Explanation:** An error occurred using GCL01HEX to print a record. Processing continues.

**User response:** If unable to resolve the problem, contact IBM Software Support.

GCL36109E  **ERROR ACCESSING ddname FILE; LOC=lllll**

**Explanation:** An error occurred accessing the specified file. Processing terminates.

**User response:** View joblog for other messages. If unable to resolve the problem, contact IBM Software Support. Have available the listing that contains these messages.

GCL36111E  **JOURNAL rectype RECORD NOT FOUND**

**Explanation:** The specified journal record was not found. Processing terminates.

**User response:** If unable to resolve the problem, contact IBM Software Support. Have available the listing that contains this message.

GCL36112E  **JOURNAL rectype RECORD IS WRONG VERSION**

**Explanation:** The specified journal record was not the expected format. The journal record is printed. Processing terminates.

**User response:** Verify that different releases of IMS Cloning Tool have not been run using the same journal data set. If unable to resolve the problem, contact IBM Software Support. Have available the listing that contains this message.
GCL36160E  DDNAME MISSING: ddname
Explanation: A required DD was not specified in the JCL. Processing terminates.
User response: Add the required DD to the JCL.

GCL36170I  DATA MASKING BEGINNING FOR DATABASE: dbname
Explanation: Data masking is beginning for the named database.
User response: No action required.

GCL36171I  DATA MASKING SUCCESSFUL FOR DATABASE: dbname
Explanation: Data masking has successful completed for the named database. This message reports the number of unique segments encountered in the unload file and the total number of records processed.
User response: No action required.

GCL36172E  DATA MASKING FAILED FOR DATABASE: dbname
Explanation: Data masking has failed for the named database.
User response: Review prior messages to determine the cause of the failure and correct the problem.

GCL36173E  ERROR PROCESSING INPUT UNLOAD FILE FOR DATABASE: dbname
Explanation: There was an error processing the named unload file for the specified database.
User response: Review prior messages to determine the cause of the failure and correct the problem.

GCL36180E  INVALID RECORD FORMAT FOR INPUT UNLOAD FILE: filename
            RECFM=VB IS REQUIRED
Explanation: The record format for the named input unload file is incorrect.
User response: If unable to resolve the problem, contact IBM Software Support.

GCL36199E  ERROR CALLING name FUNCTION: function
            R15=nnnn R0=nnnn
Explanation: An error occurred using name for requested function. Processing terminates.
User response: If unable to resolve the problem, contact IBM Software Support.

GCL36201I  HH:MM:SS DATA MASKING JOURNAL INIT Started - Program Rev=rrrr
            | HH:MM:SS DATA MASKING JOURNAL INIT Completed;
            | Return Code=nnnn | HH:MM:SS DATA MASKING JOURNAL TERM Started -
            | Program Rev=rrrr | HH:MM:SS DATA MASKING JOURNAL TERM Completed;
            | Return Code=nnnn
Explanation: Data Masking journal processing message.
User response: No action required.

GCL36204E  ALLOCATION FAILED FOR DSNAME: dsname
Explanation: A problem occurred when attempting to allocate a data set. Processing terminates.
User response: Review the job log for other messages indicating why the allocation failed.

GCL36207W  ERROR CALLING GCL01HEX; FUNCTION: function
            R15=nnnn
Explanation: An error occurred using GCL01HEX to print a record. Processing continues.
User response: If unable to resolve the problem, contact IBM Software Support.

GCL36209E  ERROR ACCESSING ddname FILE; LOC=llll
Explanation: An error occurred accessing the specified file. Processing terminates.
User response: View joblog for other messages. If unable to resolve the problem, contact IBM Software Support. Have available the listing that contains these messages.

GCL36211E  JOURNAL rectype RECORD NOT FOUND
Explanation: The specified journal record was not found. Processing terminates.
User response: If unable to resolve the problem, contact IBM Software Support. Have available the listing that contains this message.
GCL36212E JOURNAL recType RECORD IS WRONG VERSION

Explanation: The specified journal record was not the expected format. The journal record is printed. Processing terminates.

User response: Verify that different releases of IMS Cloning Tool have not been run using the same journal data set. If unable to resolve the problem, contact IBM Software Support. Have available the listing that contains this message.

GCL36220I DATA MASKING RESTART/RERUN OPTION: option

Explanation: This message specifies the restart or rerun option for performing data masking.

User response: No action is required.

GCL36221I JOURNAL ENTRY FOR DATABASE: dbname ADDED MASKING: YES / NO | JOURNAL ENTRY FOR DATABASE: dbname UPDATED MASKING: YES / NO

Explanation: This message indicates that a journal entry for the specified database has been added to the journal or an existing entry was updated. This message also shows whether masking will be performed for this database or not.

User response: No action is required.

GCL36222I ALL DATABASE OPERATIONS SUCCESSFUL, JOURNAL ENTRIES WILL BE DELETED

Explanation: The job has completed and all entries which required data masking were successfully processed. As a result, the journal entries will be deleted so that RESTART will not be done on the next execution.

User response: No action is required.

GCL36223E SOME DATABASE OPERATIONS FAILED, JOURNAL ENTRIES WILL NOT BE DELETED

Explanation: The job has completed one or more databases which required data masked failed. The journal entries will be left so that RESTART processing can be performed on the next execution.

User response: Review the messages to determine what failed and correct the problems and rerun the job and specify DATA-MASKING(Y,RESTART)

GCL36224I JOURNAL NOT ACTIVE

Explanation: The journal is not allocated to the job but since neither the RESTART nor RERUN data masking options were specified execution will continue. If there are any failures with this job, RESTART processing will not be possible.

User response: No action is required.

GCL36225E JOURNAL NOT ACTIVE BUT IS REQUIRED FOR DATA-MASKING RESTART OPTION | JOURNAL NOT ACTIVE BUT IS REQUIRED FOR DATA-MASKING RERUN OPTION

Explanation: The journal is not allocated to the job but since neither the RESTART nor RERUN data masking options were specified execution will continue. If there are any failures with this job, RESTART processing will not be possible.

User response: Allocate the journal DD to the JCL and resubmit the job.

GCL36230E JOURNAL ENTRY FOUND FOR DATABASE: dbname RESTART OR RERUN OPTION IS REQUIRED

Explanation: The journal is active and one or more entries were found for a database being refreshed. In order to run the job, the DATA-MASKING(Y,RESTART) or DATA-MASKING(Y,RERUN) is required.

User response: Either add the required RESTART or RERUN option or remove the journal DD from the JCL and resubmit the job.

GCL36240I RESTART DATA FOR DATABASE: dbname PRIOR STATUS: status

Explanation: This message indicates that a journal entry was found for the specified database and indicates the prior status. Valid status and their meanings are:

- FAILED: prior execution failed
- NO-MASKING: prior execution did not request masking
- UNLOAD: prior execution created an unload file that can be reused
- SUCCESSFUL: prior execution was successful
- NOT-FOUND: prior execution did not include this database

User response: No action is required.
GCL36241I  dbname WILL BE PROCESSED | dbname WILL BE SKIPPED | dbname WILL BE PROCESSED USING PRIOR UNLOAD FILE
Explanation: When RESTART is performed, this message indicates what will be done for the specified database.
User response: No action is required.

GCL36242E  DATABASE: dbname UNLOAD FILE file NOT FOUND
Explanation: The journal entry for the specified database indicates that a prior execution created an unload file which can be used by restart. However, the named unload file could not be located. The journal entry will be reset and the database will be reprocessed and a new unload file created.
User response: No action is required.

GCL40001I hh:mm:ss BCSCLEAN STARTED - PROGRAM REV=rrr | hh:mm:ss BCSCLEAN COMPLETED; RETURN CODE=nnn
Explanation: BCSCLEAN command processing message.
User response: None.

GCL40003I DDNAME=ddname ALLOCATED FOR DSN=datasetname
Explanation: 'ddname' has been dynamically allocated for the indicated data set.
User response: None.

GCL40004E DDNAME MISSING: ddname
Explanation: 'ddname' was specified for IMS Cloning Tool to use. Processing terminates.
User response: Either correct the ddname specified, or, add the appropriate ddname to the job's JCL.

GCL40005E ALLOCATION FAILED FOR DSN: datasetname
Explanation: Dynamic allocation for a data set failed. The associated z/OS messages are displayed. If an allocation failure occurs, processing terminates.
User response: If unable to determine the reason for the failure from the associated z/OS messages, contact IBM Software Support. Have available the listing containing these messages.

GCL40005W ALLOCATION FAILED FOR DSN: datasetname
Explanation: Dynamic deallocation for a ddname failed. The associated z/OS messages are displayed. If a deallocation failure occurs, processing continues.
User response: If unable to determine the reason for the failure from the associated z/OS messages, contact IBM Software Support. Have available the listing containing these messages.

GCL40008E UNABLE TO LOAD PROGRAM: program name
Explanation: The indicated program name was not found. Processing terminates.
User response: Check that the job's /STEPLIB library is correct. If unable to resolve the problem, contact IBM Software Support.

GCL40009E ERROR ACCESSING JOURNAL FILE; LOC=lllll
Explanation: A VSAM error occurred accessing the journal file. Processing terminates.
User response: See associated GCLVSEnnE error messages. If unable to resolve problem, contact IBM Software Support. Have available the listing that contains these messages.

GCL40048I OPTIONS IN EFFECT FOR THIS EXECUTION: merged options
Explanation: Informational message indicating how BCSCLEAN will handle the options. The displayed options are derived from the INI and any overriding specifications in the command input.
User response: None.

GCL40051E REQUIRED KEYWORD MISSING: keyword
Explanation: A keyword required for processing has been omitted. Processing terminates.
User response: Specify the required keyword.

GCL40052E REQUIRED INI SECTION/TOKEN MISSING: SECTION=section TOKEN=token 1 REQUIRED INI VALUE MISSING FOR SECTION=section TOKEN=token 1 INVALID INI VALUE FOR SECTION=section TOKEN=token
Explanation: An error occurred validating the GCLINI parmlib member options. Processing terminates.
User response: Correct the GCLINI member in the IMS Cloning Tool PARMLIB data set.
GCL40053E • GCL41058E

GCL40053E  KEYWORD: keyword  MAXIMUM LENGTH: nnn EXCEEDED

Explanation: The operand entered for a keyword exceeded the maximum length allowed for the operand. nnn is the maximum allowed length for the keyword. Processing terminates.

User response: Correct the length of the keyword's operand.

GCL40054E  KEYWORD HAS MORE THAN 1 OPERAND; ONLY 1 ALLOWED: keyword

Explanation: Multiple operands were detected for a keyword; only one operand is permitted. Processing terminates.

User response: Correct the keyword to use one operand.

GCL40056E  NOTHING SPECIFIED FOR KEYWORD: keyword

Explanation: A keyword was entered without an appropriate operand. Processing terminates.

User response: Specify an appropriate operand for the keyword.

GCL40058E  INVALID VALUE IN KEYWORD: keyword VALUE: value error text

Explanation: The value in the keyword is invalid. 'error text' indicates the problem detected with the value. Processing terminates.

User response: Correct the value specified in the keyword.

GCL41001I  hh:mm:ss FINDUCATS STARTED - PROGRAM REV=rrr | hh:mm:ss FINDUCATS COMPLETED; RETURN CODE=nnn

Explanation: FINDUCATS processing message.

User response: None.

GCL41006E  ERROR CALLING GCL01VV1 ttttttt FUNCTION: function R15=nnnn R0=nnnnnnnnn LOC=lilll

Explanation: A problem occurred using a dataspace. ttttttt is the name of the internal table, lilll is the location where the error occurred. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message and the GCLINI parmlib member that controls execution of GCL.

GCL41008E  UNABLE TO LOAD PROGRAM: program name

Explanation: The indicated program name was not found. Processing terminates.

User response: Check that the job's //STEPLIB library is correct. If unable to resolve the problem, contact IBM Software Support.

GCL41051E  REQUIRED KEYWORD MISSING: keyword

Explanation: A keyword required for processing has been omitted. Processing terminates.

User response: Specify the required keyword.

GCL41053E  KEYWORD: keyword MAXIMUM LENGTH: nnn EXCEEDED

Explanation: The operand entered for a keyword exceeded the maximum length allowed for the operand. nnn is the maximum allowed length for the keyword. Processing terminates.

User response: Correct the length of the keyword's operand.

GCL41054E  KEYWORD HAS MORE THAN 1 OPERAND; ONLY 1 ALLOWED: keyword

Explanation: Multiple operands were detected for a keyword; only one operand is permitted. Processing terminates.

User response: Correct the keyword to use one operand.

GCL41056E  NOTHING SPECIFIED FOR KEYWORD: keyword

Explanation: A keyword was entered without an appropriate operand. Processing terminates.

User response: Specify an appropriate operand for the keyword.

GCL41057E  DUPLICATE FOUND; KEYWORD: keyword ENTRY: entry

Explanation: The indicated 'entry' for the keyword was previously specified. Processing terminates.

User response: Remove the duplicate entry.

GCL41058E  INVALID VALUE IN KEYWORD: keyword VALUE: value error text

Explanation: The value in the keyword is invalid. 'error text' indicates the problem detected with the value. Processing terminates.
GCL41060E  NO STORAGE GROUPS RETURNED BY SSI | NO VOLUME SERIALS RETURNED BY SSI

Explanation:  NO STORAGE GROUPS RETURNED BY SSI: The FINDUCATS command was requested to determine volume serial numbers by storage group names. SSI did not return any storage groups to GCL01SMF. Processing terminates.

User response:  Check that storage groups are defined on the system. If unable to determine the cause of this message, contact IBM Software Support. Have available the listing containing this message.

GCL41060E  GCL01SMF ERROR; RETURN CODE=nnnn LOC: lllllll entry

Explanation:  An error occurred using GCL01SMF to obtain SSI information for the 'entry'. lllllll is the internal location where the error occurred. Processing terminates.

User response:  Contact IBM Software Support. Have available the listing containing this message.

GCL41062E  NO STORAGE GROUPS RETURNED BY SSI

Explanation:  The FINDUCATS command was requested to determine volume serial numbers by storage group names. SSI did not return any storage groups to GCL01SMF. Processing terminates.

User response:  Check that storage groups are defined on the system. If unable to determine the cause of this message, contact IBM Software Support. Have available the listing containing this message.

GCL41063W  NO VOL/STG MATCH FOUND; KEYWORD: keyword ENTRY: entry

Explanation:  The indicated 'entry' for the keyword was not matched. For VOL, the indicated volser, or, the volser derived from a storage group, was not found. For STG, the indicated storage group was not found. Processing continues.

User response:  None required.

GCL41064E  INVALID VOLSER: volser IN KEYWORD: keyword

Explanation:  The volume serial number specified is invalid. Processing terminates.

User response:  Correct the volser specification.

GCL41067W  NO VOLUME SERIALS FOR STORAGE GROUP: storage group

Explanation:  SSI did not return any volsers for the storage group to GCL01SMF. Processing continues.

User response:  None.

GCL41075E  NO VOLUME SERIALS SELECTED

Explanation:  No volume serials have been found for FINDUCATS to examine. Processing terminates.

User response:  Check if volsers specified in the FROM-keyword have been removed by use of an EXCLUDE-FROM-keyword.

GCL41086I  STORAGE GROUPS/MASKS FOR KEYWORD: keyword

Explanation:  Parsing found the listed storage groups/masks for the keyword.

User response:  None.

GCL41087I  nnnnn VOLSERS OR MASKS FOR KEYWORD: keyword

Explanation:  Parsing found the listed volsers/masks for a keyword, or, derived the listed volsers from a storage group keyword. nnnnn is the number of volume serials. The third format, RESOLVED, indicates the number of volume serials found online for the associated keyword.

User response:  None.

GCL41101I  hh:mm:ss VOLUME COLLECTION STARTED - PROGRAM REV=rrr | hh:mm:ss VOLUME COLLECTION COMPLETED; RETURN CODE=nnn

Explanation:  FINDUCATS volume processing message.

User response:  None.
GCL41103I • GCL41142E

GCL41103I  DDNAME=ddname ALLOCATED FOR
DSN=datasetname

Explanation: 'ddname' has been dynamically allocated
for the indicated data set.

User response: None.

GCL41104E  OPEN FAILED FOR DDNAME=ddname

Explanation: 'ddname' was allocated for IMS Cloning
Tool to use, but the open for the file failed. Processing
terminates.

User response: If unable to determine the reason the
open failed, contact IBM Software Support. Have
available the listing that contains this message.

GCL41105E  ALLOCATION FAILED FOR DSN:
datasetname

Explanation: Dynamic allocation for a data set failed.
The associated z/OS messages are displayed. If an
allocation failure occurs, processing continues.

User response: If unable to determine the reason for
the failure from the associated z/OS messages, contact
IBM Software Support. Have available the listing containing these messages.

GCL41105E  DEALLOCATION FAILED FOR
DDNAME: ddname

Explanation: Dynamic deallocation for a ddname
failed. The associated z/OS messages are displayed. If a
deallocation failure occurs, processing continues.

User response: If unable to determine the reason for
the failure from the associated z/OS messages, contact
IBM Software Support. Have available the listing containing these messages.

GCL41106E  ERROR CALLING GCL01VV1
FUNCTION: function R15=nnnn
R0=nnnnnnnnn LOC=llll

Explanation: A problem occurred using a dataspace.
ttttttt is the name of the internal table. lllll is the
location where the error occurred. Processing
terminates.

User response: Contact IBM Software Support. Have
available the listing that contains this message and the
GCLINI parmlib member that controls execution of
GCL.

GCL41108E  UNABLE TO LOAD PROGRAM:
program name

Explanation: The indicated program name was not
found. Processing terminates.

User response: Check that the job's /STEPLIB library
is correct. If unable to resolve the problem, contact IBM
Software Support.

GCL41130E  AMSOPEN FAILED; R15=nnnn

Explanation: An attempt was made to issue an
IDCAMS command. Processing terminates.

User response: Contact IBM Software Support. Have
available the listing that contains this message.

GCL41131E  NON-ZERO RETURNED BY IDCAMS;
RC=nnnn

Explanation: An IDCAMS command failed with
return code nnnn. The IDCAMS messages are
displayed. Processing will terminate for an IDCAMS
return code greater than 4.

User response: Check the volume that caused the
DCOLLECT errors. Correct the problems with the
volume.

GCL41135I  hh:mm:ss VOLSER volser processing step

Explanation: FINDUCATS volume processing
message.

User response: None.

GCL41136I  Report by volume serial numbers

Explanation: Indicates the start of the FINDUCATS
report by volume serial number(s).

User response: None.

GCL41137I  Report of user catalogs on all examined
volume serials

Explanation: Indicates the start of the FINDUCATS
report of catalogs.

User response: None.

GCL41141E  GCL00900 UNEXPECTED RESULTS;
error text

Explanation: An unexpected condition occurred
calling program GCL00900. 'error text' has a description
of the problem. Processing terminates.

User response: Contact IBM Software Support. Have
available the listing that contains this message.

GCL41142E  BAD MLA VALUE FOUND: mla value

Explanation: The MLA value found was invalid for
IMS Cloning Tool processing. Processing terminates.

User response: Contact IBM Software Support. Have
available the listing that contains this message.
**GCL41143E**  CSI STORAGE AREA WILL EXCEED 1MB

**Explanation:** Program IGGCSI00, Catalog Search Interface, required more storage to locate alias names. The amount of storage will exceed 1,048,575. Processing terminates.

**User response:** Contact IBM Software Support. Have available the listing that contains this message.

**GCL41144E**  CSI RETURNED NO DATA

**Explanation:** This should not occur. Program IGGCSI00, Catalog Search Interface, did not return any data. Processing terminates.

**User response:** Contact IBM Software Support. Have available the listing that contains this message.

**GCL41145W**  NO DATA SETS PROCESSED FROM VOLUME(S)

**Explanation:** No data sets other than SYS1.VTOCIX or SYS1.VVDS entries were found on the specified volumes. Processing continues.

**User response:** None required.

**GCL42001I** hh:mm:ss VOLOPTIONS STARTED - PROGRAM REV=rrr | hh:mm:ss VOLOPTIONS COMPLETED; RETURN CODE=nnn

**Explanation:** VOLOPTIONS processing message.

**User response:** None.

**GCL42003I** DDNAME=ddname ALLOCATED FOR DSN=datasetname

**Explanation:** 'ddname' has been dynamically allocated for the indicated data set.

**User response:** None.

**GCL42004E** DDNAME MISSING: ddname | OPEN FAILED FOR DDNAME: ddname

**Explanation:** 'ddname' was specified for IMS Cloning Tool to use. Processing terminates.

**User response:** Either correct the ddname specified, or, add the appropriate ddname to the job's JCL.

**GCL42005E** ALLOCATION FAILED FOR DSN: datasetname

**Explanation:** Dynamic allocation for a data set failed. The associated z/OS messages are displayed. If an allocation failure occurs, processing continues.

**User response:** If unable to determine the reason for the failure from the associated z/OS messages, contact IBM Software Support. Have available the listing containing these messages.
GCL42010E  DUPLICATE JOURNAL ENTRY;
    LOC=lllll

Explanation:  A duplicate record was detected.  Processing terminates.
User response:  Contact IBM Software Support. Have available the listing that contains this message.

GCL42011E  JOURNAL CONTROL RECORD NOT FOUND | JOURNAL UCAT PAIR RECORD(S) NOT FOUND | JOURNAL VOLUME PAIR RECORD(S) NOT FOUND

Explanation:  An expected record was not found in the IMS Cloning Tool journal file. Processing terminates.
User response:  Contact IBM Software Support. Have available the listing that contains this message.

GCL42012E  JOURNAL CONTROL RECORD IS WRONG VERSION | JOURNAL UCAT RECORD IS WRONG VERSION | JOURNAL VOLP RECORD IS WRONG VERSION

Explanation:  The journal record does not match the expected format. The record is printed. Processing terminates.
User response:  Verify that different releases of IMS Cloning Tool have not been run using the same journal data set. If unable to resolve problem, contact IBM Software Support. Have available the listing that contains this message.

GCL42013E  RECORD COUNT IS ZERO; LOC=lllll | COUNT MISMATCH; RECORDS READ=rrrr CONTROL RECORD COUNT=cccc

Explanation:  There was a problem with the journal records needed to initiate the command. For the first format, the journal control record indicates no entries were added. For the second format, the number of records read from the journal, rrrr, is not the same as the number indicated in the journal control record, cccc. Processing terminates.
User response:  Contact IBM Software Support. Have available the listing that contains this message.

GCL42015E  THE COPY PROCESS DID NOT COMPLETE SUCCESSFULLY

Explanation:  The journal indicates that the COPY command did not complete successfully. Processing terminates.
User response:  Check that the COPY command has completed successfully before initiating the VOLOPTIONS command.

GCL42017E  THE NEWTARGETS-DDN IS EMPTY OR HAS BEEN DUMMIED, DDNAME: ddn

Explanation:  No records were read from the ddname specified for NEWTARGETS-DDN. Processing terminates.
User response:  Check that the DD has not been specified as 'DD DUMMY' or 'DD DSN=NULLFILE'. Check that the DSN specified in the ddn has been created successfully.

GCL42018E  THE NEWTARGETS-DDN INPUT HAS EXCEEDED THE CURRENT CAPACITY

Explanation:  The number of entries read from the ddname exceeded the current capacity. Processing terminates.
User response:  The VOLOPTIONS UPDATE may be run multiple times with the input split into smaller parts. In addition, please report this message to IBM Software Support.

GCL42020I  CURRENT JOURNAL VOLUME PAIRS:
    UPATED JOURNAL VOLUME PAIRS: (** SIMULATION **) list of volume pairs

Explanation:  The first format indicates the volume pairs at the initiation of the command. The second format indicates the volume pairs after the UPDATE NEWTARGETS have been applied.
User response:  None.

GCL42021I  UPDATED USERCATALOGS VOLUME:
    (** SIMULATION **) list of usercatalogs

Explanation:  Displays the usercatalogs and their voisers after the UPDATE NEWTARGETS have been applied.
User response:  None.

GCL42031I  VOLUMES FOR NEW TARGETS: source target newtarget

Explanation:  The listed groups of volume serials were obtained from the NEWTARGETS keyword, or from the NEWTARGET-DDN file.
User response:  None.

GCL42040E  UCBLOOK ERROR; RETURN CODE=nn REASON CODE=nn LOC=lllll

Explanation:  An error occurred during UCBLOOK processing. Processing terminates.
User response:  Contact IBM Software Support. Have available the listing containing this message.
GCL42072E  SPECIFIED TARGET WILL CAUSE DUPLICATE TARGET VOLUME SERIALS, TARGET: volser

Explanation: The indicated volser was specified as a target volume serial in the NEWTARGETS keyword. It is either duplicated in the new target volume serials specified, or, will duplicate an existing target volume serial that is not being changed. Processing terminates.

User response: Correct the keyword specification. The VOLOPTIONS LIST command may be used to display the volume pairs in the journal.

GCL42073E  SPECIFIED TARGET WILL CAUSE DUPLICATE TARGET VOLUME DEVNS, TARGET DEVN: devn

Explanation: The indicated device number was specified as a target volume device number in the NEWTARGETSDEVN keyword. It is either duplicated in the new target volume device numbers specified, or, will duplicate an existing target volume device number that is not being changed. Processing terminates.

User response: Correct the keyword specification. The VOLOPTIONS LIST command may be used to display the volume pairs in the journal.

GCL42101I  hh:mm:ss VOLOPTIONS CLIP STARTED - PROGRAM REV=rrr (** SIMULATION **) | hh:mm:ss VOLOPTIONS CLIP COMPLETED; RETURN CODE=nnn

Explanation: VOLOPTIONS CLIP processing message.

User response: None.

GCL42107W  ERROR CALLING GCL01HEX; FUNCTION: function R15=nnnn

Explanation: An error occurred using GCL01HEX to print a record. Processing continues.

User response: Please report this message to IBM Software Support.

GCL42108E  UNABLE TO LOAD PROGRAM: program name

Explanation: The indicated program name was not found. Processing terminates.

User response: Check that the job's //STEPLIB library is correct. If unable to resolve the problem, contact IBM Software Support.

GCL42109E  ERROR ACCESSING JOURNAL FILE; LOC=lllll

Explanation: A VSAM error occurred accessing the journal file. Processing terminates.

User response: See associated GCLVSEnnE error messages. If unable to resolve problem, contact IBM Software Support. Have available the listing that contains these messages.

GCL42111E  JOURNAL VOLUME PAIR RECORD(S) NOT FOUND

Explanation: An expected record was not found in the IMS Cloning Tool journal file. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL42136E  IEEVARYD VARY OFFLINE FAILED FOR VOLSER: volser INVALID PARAMETERS

Explanation: The parameters given to IEEVARYD are incorrect. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL42137E  IEEVARYD VARY OFFLINE FAILED FOR VOLSER: volser DEVICE: nnnnn RETURN CODE: nnnnnnnn REASON CODE: nnnnnnn

Explanation: The vary offline for the indicated device failed. Processing terminates.

User response: When the problem that caused the vary to fail is corrected, any volumes previously varied offline will need to be varied back online in order to rerun with IMS Cloning Tool VOLOPTIONS CLIP.

GCL42141I  VOLUME SERIAL: volser DEVICE NUMBER: nnnn IS NOW OFFLINE

Explanation: The indicated device is now offline to the current image.

User response: None.
GCL42142I  VOLUME SERIAL: volser  DEVICE NUMBER: nnnn  IS PENDING OFFLINE

Explanation: The indicated device is now pending offline to the current image.

User response: None.

GCL42143E  SOURCE VOLUME SERIAL: volser  IS OFFLINE AND NO INFORMATION ABOUT THE DEVICE IS KNOWN

Explanation: The indicated source volume serial is not online and no information about the physical device is known. Processing terminates.

User response: Bring the target device with the source volume serial online and rerun VOLOPTIONS CLIP with the RESUME keyword.

GCL42145E  DEVICE NUMBER: devn  FOR TARGET VOLUME: volser  DOES NOT EXIST

Explanation: The indicated device number is not defined to the z/OS system. Processing terminates.

User response: Correct the device number to use a defined device.

GCL42146E  DEVICE NUMBER: devn  IS ONLINE WITH UNEXPECTED VOLUME SERIAL: volser

Explanation: The indicated device number is online but the volser of the device does not match what is expected. Processing terminates.

User response: Either correct the device number to use the correct device or correct the device to have the correct contents.

GCL42147I  VOLUME SERIAL: volser  DEVICE NUMBER: devn  NOT TAKEN OFFLINE DUE TO SIMULATION

Explanation: The indicated volume was not taken offline because this run is a simulation.

User response: None.

GCL42148E  SOURCE VOLUME SERIAL: vvvvvv  IS OFFLINE AND IS EXPECTED TO BE ONLINE

Explanation: The indicated volume is offline but is expected to be online. Processing terminates.

User response: If this is a rerun the RESUME keyword should be used.

GCL42160E  ERROR DURING UCBxxxx FOR VOLSER=volume  - RETURN CODE=nnnn  REASON CODE=nnnn

Explanation: An error occurred using UCBLOOK or UCBSCAN. Processing terminates.

User response: A return code 4 from UCBLOOK may indicate the volser is offline. If unable to determine the cause of the error, contact IBM Software Support. Have available the listing containing this message.

GCL42179W  TARGET VOLUME SERIAL: volume  IS CURRENTLY ONLINE

Explanation: CLIP was requested, but, the indicated target volume serial was found online. Processing will continue checking all other targets, but, the run will be terminated.

User response: Change the target volume serial(s) IMS Cloning Tool will use with the VOLOPTIONS UPDATE command to avoid duplicate volume serials.

GCL42180E  NO TARGET VOLSER SHOULD BE FOUND ONLINE FOR CLIP FUNCTION

Explanation: CLIP was requested, but, one or more target volumes were found online. Processing terminates.

User response: See the GCL42179W message(s) for online target volume serials. If this is a rerun the RESUME keyword should be used.

GCL42200I  hh:mm:ss  VOLOPTIONS UNCLIP STARTED  - PROGRAM REV=rrr  (** SIMULATION **)  | hh:mm:ss  VOLOPTIONS UNCLIP COMPLETED; RETURN CODE=nnn

Explanation: VOLOPTIONS UNCLIP processing message.

User response: None.

GCL42201I  DDNAME=ddname  ALLOCATED FOR DSN=datasetname

Explanation: 'ddname' has been dynamically allocated for the indicated data set.
GCL42204E  OPEN FAILED FOR DDNAME: ddname

Explanation: 'ddname' was specified for IMS Cloning Tool to use. Processing terminates.

User response: Either correct the ddname specified, or, add the appropriate ddname to the job's JCL.

GCL42205E  ALLOCATION FAILED FOR DSN: datasetname

Explanation: Dynamic allocation for a data set failed. The associated z/OS messages are displayed. If an allocation failure occurs, processing terminates.

User response: If unable to determine the reason for the failure from the associated z/OS messages, contact IBM Software Support. Have available the listing containing these messages.

GCL42205W DEALLOCATION FAILED FOR DDNAME: ddname

Explanation: Dynamic deallocation for a ddname failed. The associated z/OS messages are displayed. If a deallocation failure occurs, processing continues.

User response: If unable to determine the reason for the failure from the associated z/OS messages, contact IBM Software Support. Have available the listing containing these messages.

GCL42207W ERROR CALLING GCL01HEX;
FUNCTION: function R15=nnnn

Explanation: An error occurred using GCL01HEX to print a record. Processing continues.

User response: Please report this message to IBM Software Support.

GCL42209E ERROR ACCESSING JOURNAL FILE;
LOC=lilll

Explanation: A VSAM error occurred accessing the journal file. Processing terminates.

User response: See associated GCLVSEnnE error messages. If unable to resolve problem, contact IBM Software Support. Have available the listing that contains these messages.

GCL42211E JOURNAL VOLUME PAIR RECORD(S) NOT FOUND

Explanation: An expected record was not found in the IMS Cloning Tool journal file. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL42220E  INTERNAL ERROR; INVALID REQUEST TYPE= type

Explanation: An internal error has been encountered. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL42235E  ICKDSF COMMAND FAILED FOR TARGET VOLSER: volser

Explanation: The invocation of ICKDSF to change a device label failed. The messages from ICKDSF are printed.

User response: If unable to determine the reason for the failure from the associated ICKDSF messages, contact IBM Software Support. Have available the listing containing these messages.

GCL42236E  IEEVARYD VARY OFFLINE FAILED FOR VOLSER: volser INVALID PARAMETERS

Explanation: The parameters given to IEEVARYD are incorrect. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL42237E  IEEVARYD VARY OFFLINE FAILED FOR VOLSER: volser DEVICE: nnnn RETURN CODE: nnnnnnnnn REASON CODE: nnnnnnnnn

Explanation: The vary offline for the indicated device failed. Processing terminates.

User response: When the problem that caused the vary to fail is corrected, the VOLOPTIONS UNCLIP can be rerun with the RESUME keyword.

GCL42238E  IEEVARYD VARY OFFLINE FAILED FOR VOLSER: volser DEVICE: nnnn R15: nnnnnnnnn

Explanation: The vary offline for the indicated device failed. Processing terminates.

User response: When the problem that caused the vary to fail is corrected, the VOLOPTIONS UNCLIP can be rerun with the RESUME keyword.

GCL42240I  DEVICE NUMBER: nnn SUCCESSFULLY CHANGED TO VOLUME SERIAL: volser

Explanation: The indicated device has been clopped to the indicated volume serial.

User response: None.
GCL42241I  VOLUME SERIAL: volser  DEVICE NUMBER: nnnn  IS NOW OFFLINE

Explanation: The indicated device is now offline or was already offline to the current image.
User response: None.

GCL42242I  VOLUME SERIAL: volser  DEVICE NUMBER: nnnn  IS PENDING OFFLINE

Explanation: The indicated device is now pending offline to the current image.
User response: None.

GCL42243E  TARGET VOLUME SERIAL: volser  IS OFFLINE AND NO INFORMATION ABOUT THE DEVICE IS KNOWN

Explanation: The indicated target volume serial is not online and no information about the physical device is known. Processing terminates.
User response: Bring the target device with the target volume serial online and the VOLOPTIONS UNCLIP can be rerun with the RESUME keyword.

GCL42244E  TARGET VOLUME SERIAL: vvvvvv  IS OFFLINE AND IS EXPECTED TO BE ONLINE

Explanation: The indicated volume is offline but is expected to be online. Processing terminates.
User response: If this is a rerun the RESUME keyword should be used.

GCL42245I  DEVICE NUMBER: devn  ALREADY CHANGED TO SOURCE VOLUME SERIAL: volser

Explanation: The indicated device number has already been clipped to the desired volume serial.
User response: None.

GCL42246I  DEVICE NUMBER: nnnn  ICKDSF FAILED; DEVICE MAY HAVE ALREADY BEEN UNCLIPPED

Explanation: The unclip of the indicated device by ICKDSF has failed. This failure is probably caused by the device having already been unclipped.
User response: See the next IMS Cloning Tool message in the listing to determine the appropriate action.

GCL42247I  VOLUME SERIAL: volser  DEVICE NUMBER: devn  NOT TAKEN OFFLINE DUE TO SIMULATION

Explanation: The indicated volume was not taken offline because this run is a simulation.
User response: None.

GCL42248I  VOLUME SERIAL: vvvvvv  DEVICE NUMBER: nnnn  NOT CLIPPED TO  VOLUME SERIAL: vvvvvv  DUE TO SIMULATION

Explanation: The clip of the indicated device was not done because this run is a simulation.
User response: None.

GCL42260E  DDNAME=ddname  ALLOCATED FOR DSN=datasetname

Explanation: 'ddname' has been dynamically allocated for the indicated data set.
User response: A return code 4 from UCBLOOK may indicate the volser is offline. If unable to determine the cause of the error, contact IBM Software Support. Have available the listing containing this message.

GCL43001I  hh:mm:ss  UCATOPTIONS STARTED - PROGRAM REV= rrr | hh:mm:ss

Explanation: UCATOPTIONS processing message.
User response: None.

GCL43003E  DDNAME MISSING: ddname  OPEN FAILED FOR DDNAME: ddname

Explanation: 'ddname' was specified for IMS Cloning Tool to use. Processing terminates.
User response: Either correct the ddname specified, or, add the appropriate ddname to the job's JCL.

GCL43004E  DDNAME=ddname  ALLOCATED FOR DSN=datasetname

Explanation: 'ddname' has been dynamically allocated for the indicated data set.
User response: None.

GCL43005E  ALLOCATION FAILED FOR DSN: datasetname

Explanation: Dynamic allocation for a data set failed. The associated z/OS messages are displayed. If an allocation failure occurs, processing terminates.
User response: If unable to determine the reason for
the failure from the associated z/OS messages, contact IBM Software Support. Have available the listing containing these messages.

**GCL43005W** DEALLOCATION FAILED FOR DDNAME: ddname

Explanation: Dynamic deallocation for a ddname failed. The associated z/OS messages are displayed. If a deallocation failure occurs, processing continues.

User response: If unable to determine the reason for the failure from the associated z/OS messages, contact IBM Software Support. Have available the listing containing these messages.

**GCL43006E** ERROR CALLING GCL01VV1 tttttt FUNCTION: function R15=nnnnn R0=nnnnnnnnnnn LOC=lllll

Explanation: A problem occurred using a dataspace.

User response: Contact IBM Software Support. Have available the listing that contains this message.

**GCL43007W** ERROR CALLING GCL01HEX;
FUNCTION: function R15=nnnn

Explanation: An error occurred using GCL01HEX to print a record. Processing continues.

User response: Please report this message to IBM Software Support.

**GCL43008E** UNABLE TO LOAD PROGRAM: program name

Explanation: The indicated program name was not found. Processing terminates.

User response: Check that the job's //STEPLIB library is correct. If unable to resolve the problem, contact IBM Software Support.

**GCL43009E** ERROR ACCESSING JOURNAL FILE;
LOC=lllll

Explanation: A VSAM error occurred accessing the journal file. Processing terminates.

User response: See associated GCLVSEnnE error messages. If unable to resolve problem, contact IBM Software Support. Have available the listing that contains these messages.

**GCL43010E** DUPLICATE JOURNAL ENTRY;
LOC=lllll

Explanation: A duplicate record was detected. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

**GCL43011E** JOURNAL CONTROL RECORD NOT FOUND | JOURNAL UCAT PAIR RECORD(S) NOT FOUND

Explanation: An expected record was not found in the IMS Cloning Tool journal file. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

**GCL43012E** JOURNAL CONTROL RECORD IS WRONG VERSION | JOURNAL UCAT PAIR RECORD IS WRONG VERSION

Explanation: The journal record does not match the expected format. The record is printed. Processing terminates.

User response: Verify that different releases of IMS Cloning Tool have not been run using the same journal data set. If unable to resolve problem, contact IBM Software Support. Have available the listing that contains this message.

**GCL43013E** RECORD COUNT IS ZERO; LOC=lllll | COUNT MISMATCH; RECORDS READ=rrrr CONTROL RECORD COUNT=cccc

Explanation: There was a problem with the journal records needed to initiate the command. For the first format, the journal control record indicates no entries were added. For the second format, the number of records read from the journal, rrrr, is not the same as the number indicated in the journal control record, cccc. Processing terminates.

User response: Contact IBM Software Support. Have available the listing that contains this message.

**GCL43015E** THE COPY PROCESS DID NOT COMPLETE SUCCESSFULLY

Explanation: The journal indicates that the COPY command did not complete successfully. Processing terminates.

User response: Check that the COPY command has completed successfully before initiating the VOLOPTIONS command.
GCL43017E  THE NEWTARGETS-DDN IS EMPTY OR HAS BEEN DUMMIED, DDNAME: ddn

Explanation: No records were read from the ddname specified for NEWTARGETS-DDN. Processing terminates.

User response: Check that the DD has not been specified as 'DD DUMMY' or 'DD DSN=NULLFILE'. Check that the DSN specified in the ddn has been created successfully.

GCL43018E  THE NEWTARGETS-DDN INPUT HAS EXCEEDED THE CURRENT CAPACITY

Explanation: The number of entries read from the ddname exceeded the current capacity. Processing terminates.

User response: The UCATOPTIONS UPDATE may be run multiple times with the input split into smaller parts. In addition, please report this message to IBM Software Support.

GCL43020I  CURRENT JOURNAL UCAT PAIRS: | UPDATED JOURNAL UCAT PAIRS:

Explanation: The first format indicates the user catalog pairs at the initiation of the command. The second format indicates the user catalog pairs after the UPDATE NEWTARGETS have been applied.

User response: None.

GCL43031I  ENTRIES FROM NEWTARGETS: source newtarget | ENTRIES FROM NEWCATWORKS: current-dsn new-dsn

Explanation: The listed pairs of catalog names were obtained from the NEWTARGETS keyword, or, from the NEWTARGETS-DDN file. Or, the listed pairs of data set names were obtained from the NEWCATWORKS keyword, or, from the NEWCATWORKS-DDN file.

User response: None.

GCL43040E  SOURCE CATALOG BACKUP HAS NOT BEEN DONE

Explanation: The source catalogs have not been backed up. Processing terminates.

User response: Run UCATOPTIONS BACKUP to backup the source catalogs.

GCL43041E  SOURCE CATALOG BACKUP HAS ALREADY BEEN DONE

Explanation: The source catalogs have already been backed up. Processing terminates.

GCL43048I  OPTIONS IN EFFECT FOR THIS EXECUTION: merged options

Explanation: Informational message indicating how UCATOPTIONS will handle the options. The displayed options are derived from the INI and any overriding specifications in the command input.

User response: None.

GCL43051E  REQUIRED KEYWORD MISSING: keyword

Explanation: A keyword required for processing has been omitted. Processing terminates.

User response: Specify the required keyword.

GCL43052E  REQUIRED INI SECTION/TOKEN MISSING: SECTION=section TOKEN=token

Explanation: An error occurred validating the GCLINI parmlib member options. Processing terminates.

User response: Correct the GCLINI member in the IMS Cloning Tool PARMLIB data set.

GCL43053E  KEYWORD: keyword MAXIMUM LENGTH: nnn EXCEEDED

Explanation: The operand entered for a keyword exceeded the maximum length allowed for the operand. nnn is the maximum allowed length for the keyword. Processing terminates.

User response: Correct the length of the keyword's operand.

GCL43054E  KEYWORD HAS MORE THAN 1 OPERAND; ONLY 1 ALLOWED: keyword

Explanation: Multiple operands were detected for a keyword; only one operand is permitted. Processing terminates.

User response: Correct the keyword to use one operand.

GCL43056E  NOTHING SPECIFIED FOR KEYWORD: keyword

Explanation: A keyword was entered without an appropriate operand. Processing terminates.
User response: Specify an appropriate operand for the keyword.

GCL43057E DUPLICATE FOUND; KEYWORD: keyword ENTRY: entry

Explanation: The indicated 'entry' for the keyword was previously specified. Processing terminates.

User response: Remove the duplicate entry.

GCL43058E INVALID VALUE IN KEYWORD: keyword VALUE: value error text

Explanation: The value in the keyword is invalid. 'error text' indicates the problem detected with the value. Processing terminates.

User response: Correct the value specified in the keyword.

GCL43064E INVALID UCAT: bcs dsname IN KEYWORD: keyword | INVALID CATWORK: dsname IN KEYWORD: keyword

Explanation: The indicated bcs dsname or dsname is invalid. Processing terminates.

User response: Correct the invalid dsname.

GCL43065E FORCE CAN ONLY BE SPECIFIED WITH BACKUP

Explanation: The FORCE keyword was specified but the BACKUP keyword was not specified. The FORCE keyword can only be specified with the BACKUP keyword. Processing terminates.

User response: Correct the keyword specification.

GCL43068E UNMATCHED ENTRIES IN KEYWORD: keyword

Explanation: For NEWTARGETS, there must be a source user catalog and a new target user catalog. Unmatched entries were found. Processing terminates.

User response: Correct the keyword specification.

GCL43073E NO MATCH FOUND IN JOURNAL FOR SOURCE UCAT: bcsdsname | NO MATCH FOUND IN JOURNAL FOR CATWORK DSN: dsname

Explanation: The indicated user catalog was specified as a source in the NEWTARGETS keyword. That source user catalog was not found in the journal records. Or, the indicated dsname was specified as a current value in the NEWCATWORKS keyword. That catwork dsname was not found in the journal records. Processing terminates.

User response: If unable to determine the reason for the failure from the associated z/OS messages, contact IBM Software Support. Have available the listing containing these messages.

GCL43074W NEWTARGETS IGNORED WITH "LIST" OPTION | NEWCATWORKS IGNORED WITH "LIST" OPTION

Explanation: NEWTARGETS or NEWCATWORKS was specified with UCATOPTIONS LIST. The NEWTARGETS or NEWCATWORKS keyword is ignored. Processing continues.

User response: None, unless UPDATE was intended.

GCL44001I hh:mm:ss ONLINECLIP STARTED - PROGRAM REV=rrr | hh:mm:ss ONLINECLIP COMPLETED; RETURN CODE=nnn

Explanation: ONLINECLIP command processing message.

User response: None.

GCL44003I DDNAME=ddname ALLOCATED FOR DSN=datasetname

Explanation: 'ddname' has been dynamically allocated for the indicated data set.

User response: None.

GCL44004E DDNAME MISSING: ddname

Explanation: 'ddname' was specified for IMS Cloning Tool to use. Processing terminates.

User response: Either correct the ddname specified, or, add the appropriate ddname to the job's JCL.

GCL44005E ALLOCATION FAILED FOR DSN: datasetname

Explanation: Dynamic allocation for a data set failed. The associated z/OS messages are displayed. If an allocation failure occurs, processing terminates.

User response: If unable to determine the reason for the failure from the associated z/OS messages, contact IBM Software Support. Have available the listing containing these messages.

GCL44005W ALLOCATION FAILED FOR DSN: datasetname

Explanation: Dynamic deallocation for a ddname failed. The associated z/OS messages are displayed. If a deallocation failure occurs, processing continues.

User response: If unable to determine the reason for the failure from the associated z/OS messages, contact IBM Software Support. Have available the listing containing these messages.
IBM Software Support. Have available the listing containing these messages.

GCL44007W  ERROR CALLING GCL01HEX;
            FUNCTION: function R15=nnnn

Explanation: An error occurred using GCL01HEX to print a record. Processing continues.
User response: Please report this message to IBM Software Support.

GCL44009E  ERROR ACCESSING JOURNAL FILE;
            LOC=lllll

Explanation: A VSAM error occurred accessing the journal file. Processing terminates.
User response: See associated GCLVSEnnE error messages. If unable to resolve problem, contact IBM Software Support. Have available the listing that contains these messages.

GCL44011E  JOURNAL CONTROL RECORD NOT FOUND | JOURNAL CONTROL RECORD IS WRONG VERSION | JOURNAL VOLUME PAIR RECORD(S) NOT FOUND

Explanation: An expected journal record was not found or did not match the expected format. If the format is the problem, the record is printed. Processing terminates.
User response: Verify that different releases of IMS Cloning Tool have not been run using the same journal data set. If unable to resolve problem, contact IBM Software Support. Have available the listing that contains this message.

GCL44013E  RECORD COUNT IS ZERO; LOC=lllll | COUNT MISMATCH; RECORDS READ=rrrr CONTROL RECORD COUNT=cccc

Explanation: There was a problem with the journal records needed to initiate the command. For the first format, the journal control record indicates no entries were added. For the second format, the number of records read from the journal, rrrr, is not the same as the number indicated in the journal control record, cccc. Processing terminates.
User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL44015E  THE COPY PROCESS DID NOT COMPLETE SUCCESSFULLY

Explanation: The journal indicates that the COPY command did not complete successfully. Processing terminates.
User response: Check that the COPY command has completed successfully before initiating the ONLINECLIP command.

GCL44033E  EXCP FAILED FOR DEVICE: mnnn
            TARGET VOLSER: volser SYNAD TEXT: text

Explanation: An error occurred accessing the volume label for a target device. Processing terminates.
User response: Contact IBM Software Support. Have available the listing that contains this message.

GCL44034W  VOLUME SERIAL FOR DEVICE: mnnn
            IS volser; VOLUME SERIAL EXPECTED IS sourcevolser

Explanation: The internal volume label for the device is 'volser'. The program expected the internal label to match the associated source volume serial. Processing continues.
User response: If the internal volume serial is already the target volume serial, there should be no problem. However, if the internal serial number is not related to the current IMS Cloning Tool process, check that the volume pairs given to the IMS Cloning Tool COPY command were correct.

GCL44035I  VOLUME SERIAL FOR DEVICE: mnnn
            CHANGED TO: targetvolser

Explanation: The internal volume label for the device is 'volser'. The program expected the internal label to match the associated source volume serial. Processing continues.
User response: None.

GCL44048I  OPTIONS IN EFFECT FOR THIS EXECUTION: merged options

Explanation: Informational message indicating how ONLINECLIP will handle the options. The displayed options are derived from the INI and any overriding specifications in the command input.
User response: None.

GCL44050E  ERROR IN PARAMETERS FOR keyword

Explanation: The parameters for the indicated keyword were incorrect. Processing terminates.
User response: Check the keyword parameters. Mutually exclusive keywords may have been used.
GCL44051E  REQUIRED KEYWORD MISSING: keyword
Explanation: A keyword required for processing has been omitted. Processing terminates.
User response: Specify the required keyword.

GCL44053E  KEYWORD: keyword MAXIMUM LENGTH: nnn EXCEEDED
Explanation: The operand entered for a keyword exceeded the maximum length allowed for the operand. nnn is the maximum allowed length for the keyword. Processing terminates.
User response: Correct the length of the keyword's operand.

GCL44054E  KEYWORD HAS MORE THAN 1 OPERAND; ONLY 1 ALLOWED: keyword
Explanation: Multiple operands were detected for a keyword; only one operand is permitted. Processing terminates.
User response: Correct the keyword to use one operand.

GCL44056E  NOTHING SPECIFIED FOR KEYWORD: keyword
Explanation: A keyword was entered without an appropriate operand. Processing terminates.
User response: Specify an appropriate operand for the keyword.

GCL44058E  INVALID VALUE IN KEYWORD: keyword VALUE: value error text
Explanation: The value in the keyword is invalid. 'error text' indicates the problem detected with the value. Processing terminates.
User response: Correct the value specified in the keyword.

GCL44060E  ERROR DURING function FOR VOLSER=volume - RETURN CODE=nnnn REASON CODE=nnnn
Explanation: An error occurred using IOSCAPU or UCBLOOK. Processing terminates.
User response: A return code 4 from UCBLOOK may indicate the volser is offline. If unable to determine the cause of the error, contact IBM Software Support. Have available the listing containing this message.

GCL44079E  TARGET VOLSER: targetvolser WAS NOT FOUND ONLINE
Explanation: The indicated target volume serial was not found online. Processing terminates.
User response: The target volumes are expected to be online for ONLINECLIP. Correct the problem with the target volume(s).

GCL44086I  VALIDATING KEYWORD: keyword
Explanation: Parsing is checking the indicated keyword indicated in the command.
User response: None.

GCL45001I  hh:mm:ss VARYOFF STARTED - PROGRAM REV=rrr | hh:mm:ss VARYOFF COMPLETED; RETURN CODE=nnn
Explanation: VARYOFF command processing message.
User response: None.

GCL45003I  DDNAME=ddname ALLOCATED FOR DSN=datasetname
Explanation: 'ddname' has been dynamically allocated for the indicated data set.
User response: None.

GCL45004E  DDNAME MISSING=ddname OPEN FAILED FOR DDNAME=ddname
Explanation: 'ddname' was specified for IMS Cloning Tool to use. Processing terminates.
User response: Either correct the ddname specified, or, add the appropriate ddname to the job's JCL.

GCL45005E  ALLOCATION FAILED FOR DSN=datasetname
Explanation: Dynamic allocation for a data set failed. The associated z/OS messages are displayed. If an allocation failure occurs, processing terminates.
User response: If unable to determine the reason for the failure from the associated z/OS messages, contact IBM Software Support. Have available the listing containing these messages.

GCL45005E  ALLOCATION FAILED FOR DSN=datasetname
Explanation: Dynamic deallocation for a ddname failed. The associated z/OS messages are displayed. If a deallocation failure occurs, processing continues.
User response: If unable to determine the reason for the failure from the associated z/OS messages, contact
IBM Software Support. Have available the listing containing these messages.

**GCL45006E**  
ERROR CALLING GCL01VV1  
FUNCTION: function R15=nnnn  
R0=nnnnnnnn LOC=lllll  

**Explanation:** A problem occurred using a dataspace. ttttttt is the name of the internal table. lllll is the location where the error occurred. Processing terminates.

**User response:** Contact IBM Software Support. Have available the listing that contains this message and the GCLINI parmlib member that controls execution of GCL.

**GCL45007W**  
ERROR CALLING GCL01HEX;  
FUNCTION: function R15=nnnn  

**Explanation:** An error occurred using GCL01HEX to print a record. Processing continues.

**User response:** Please report this message to IBM Software Support.

**GCL45008E**  
UNABLE TO LOAD PROGRAM=  
program name  

**Explanation:** The indicated program name was not found. Processing terminates.

**User response:** Check that the job's //STEPLIB library is correct. If unable to resolve the problem, contact IBM Software Support.

**GCL45009E**  
ERROR ACCESSING JOURNAL FILE;  
LOC=lllll\ ERROR ACCESSING VARY FILE; LOC=lllll  

**Explanation:** A VSAM error occurred accessing the journal or vary file. Processing terminates.

**User response:** See associated GCLVSEnnE error messages. If unable to resolve the problem, contact IBM Software Support. Have available the listing that contains these messages.

**GCL45010E**  
DUPLICATE VARY ENTRY; LOC=lllll  

**Explanation:** A duplicate record was detected. Processing terminates.

**User response:** Verify that an empty vary file was used as input to the VARYOFF command. If unable to resolve the problem, contact IBM Software Support. Have available the listing that contains this message.

**GCL45011E**  
JOURNAL CONTROL RECORD NOT FOUND | JOURNAL VOLP RECORD NOT FOUND  

**Explanation:** An expected record was not found in the IMS Cloning Tool journal file. Processing terminates.

**User response:** Contact IBM Software Support. Have available the listing that contains this message.

**GCL45012E**  
JOURNAL CONTROL RECORD IS WRONG VERSION | JOURNAL VOLP RECORD IS WRONG VERSION  

**Explanation:** The journal record does not match the expected format. The record is printed. Processing terminates.

**User response:** Verify that different releases of IMS Cloning Tool have not been run using the same journal data set. If unable to resolve problem, contact IBM Software Support. Have available the listing that contains this message.

**GCL45013E**  
COUNT MISMATCH; RECORDS READ=rrrr CONTROL RECORD COUNT=cccc  

**Explanation:** There was a problem with the journal records needed to initiate the command. The number of records read from the journal, rrrr, is not the same as the number indicated in the journal control record, cccc. Processing terminates.

**User response:** Check that the DD has not been specified as 'DD DUMMY' or 'DD DSN=NULLFILE'. Check that the DSN specified in the ddn has been created successfully.

**GCL45014E**  
THE DDNAME IS EMPTY OR HAS BEEN DUMMIED, DDNAME: ddn  

**Explanation:** No records were read from the ddname specified for a keyword. Processing terminates.

**User response:** Check that the DD has not been specified as 'DD DUMMY' or 'DD DSN=NULLFILE'. Check that the DSN specified in the ddn has been created successfully.

**GCL45015E**  
The ddname exceeded the current capacity, DDNAME: ddn  

**Explanation:** The number of entries read from the ddname exceeded the current capacity. Processing terminates.

**User response:** Contact IBM Software Support. Have available the listing that contains this message.
<table>
<thead>
<tr>
<th>GCL45019E • GCL45053E</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GCL45019E</strong> DDNAME: <em>ddn</em> DOES NOT HAVE A LRECL OF 80</td>
</tr>
<tr>
<td><strong>Explanation:</strong> The data set allocated to the ddname does not have a LRECL of 80. The LRECL of this data set must be 80. Processing terminates.</td>
</tr>
<tr>
<td><strong>User response:</strong> Change the data set allocated to the ddname to have a LRECL of 80.</td>
</tr>
<tr>
<td><strong>GCL45020I</strong> COPY COMMAND: <em>copy command</em></td>
</tr>
<tr>
<td><strong>Explanation:</strong> Lists the copy command.</td>
</tr>
<tr>
<td><strong>User response:</strong> None.</td>
</tr>
<tr>
<td><strong>GCL45031E</strong> DEVICE NOT DEFINED; VOLSER: <em>volser</em></td>
</tr>
<tr>
<td><strong>DEVICE NUMBER:</strong> <em>dddd</em></td>
</tr>
<tr>
<td><strong>Explanation:</strong> The device number that was specified is not defined to the z/OS system. Processing terminates.</td>
</tr>
<tr>
<td><strong>User response:</strong> Change the specified device number to be that of a defined DASD device.</td>
</tr>
<tr>
<td><strong>GCL45032E</strong> VOLUME ALREADY OFFLINE; VOLSER: <em>volser</em></td>
</tr>
<tr>
<td><strong>DEVICE NUMBER:</strong> <em>dddd</em></td>
</tr>
<tr>
<td><strong>Explanation:</strong> The device number that was specified is already offline to the z/OS system. Processing terminates if VOL-ALREADY-OFFLINE(QUIT) is specified.</td>
</tr>
<tr>
<td><strong>User response:</strong> Bring the volume online or use VOL-ALREADY-OFFLINE(CONTINUE) if the volume should already be offline.</td>
</tr>
<tr>
<td><strong>GCL45033E</strong> WRONG VOLSER FOUND; FOUND VOLSER: <em>volser</em> EXPECTED VOLSER: <em>volser</em></td>
</tr>
<tr>
<td><strong>DEVICE NUMBER:</strong> <em>dddd</em></td>
</tr>
<tr>
<td><strong>Explanation:</strong> The wrong volser was found on device <em>dddd</em>. Processing terminates.</td>
</tr>
<tr>
<td><strong>User response:</strong> Correct the volume and device number specifications to match the current volser on the device.</td>
</tr>
<tr>
<td><strong>GCL45034E</strong> VOLUME NOT ONLINE AND DEVICE NUMBER IS NOT KNOWN; VOLSER: <em>volser</em></td>
</tr>
<tr>
<td><strong>Explanation:</strong> The volume is not online and a device number has not been specified for the volume. Processing terminates.</td>
</tr>
<tr>
<td><strong>User response:</strong> Either bring the volume online or specify the device number of the volume if possible.</td>
</tr>
<tr>
<td><strong>GCL45035E</strong> DEVICE NOT DASD; VOLSER: <em>volser</em></td>
</tr>
<tr>
<td><strong>DEVICE NUMBER:</strong> <em>dddd</em></td>
</tr>
<tr>
<td><strong>Explanation:</strong> The specified device is not defined to z/OS as a DASD device. Processing terminates.</td>
</tr>
<tr>
<td><strong>User response:</strong> Change the device number to be that of a defined DASD device.</td>
</tr>
<tr>
<td><strong>GCL45040E</strong> GCL00900 UNEXPECTED RESULTS; error text</td>
</tr>
<tr>
<td><strong>Explanation:</strong> An unexpected condition occurred calling program GCL00900. 'error text' has a description of the problem. Processing terminates.</td>
</tr>
<tr>
<td><strong>User response:</strong> Contact IBM Software Support. Have available the listing that contains this message.</td>
</tr>
<tr>
<td><strong>GCL45041E</strong> INVALID VALUE FOUND FOR item IN keyword RECORD: <em>value</em></td>
</tr>
<tr>
<td><strong>Explanation:</strong> An invalid value has been found for an item in a record in the data set allocated to the ddname for the keyword. The record is printed. Processing terminates.</td>
</tr>
<tr>
<td><strong>User response:</strong> Correct the value for the item in the record to have a valid value.</td>
</tr>
<tr>
<td><strong>GCL45048I</strong> OPTIONS IN EFFECT FOR THIS EXECUTION: merged options</td>
</tr>
<tr>
<td><strong>Explanation:</strong> Informational message indicating how VARYOFF will handle the options. The displayed options are derived from the INI and any overriding specifications in the command input.</td>
</tr>
<tr>
<td><strong>User response:</strong> None.</td>
</tr>
<tr>
<td><strong>GCL45050E</strong> ERROR IN PARAMETERS FOR keyword</td>
</tr>
<tr>
<td><strong>Explanation:</strong> The parameters for the indicated keyword were incorrect. Processing terminates.</td>
</tr>
<tr>
<td><strong>User response:</strong> Check the keyword parameters. Mutually exclusive keywords may have been used.</td>
</tr>
<tr>
<td><strong>GCL45051E</strong> REQUIRED KEYWORD MISSING: <em>keyword</em></td>
</tr>
<tr>
<td><strong>Explanation:</strong> A keyword required for processing has been omitted. Processing terminates.</td>
</tr>
<tr>
<td><strong>User response:</strong> Specify the required keyword.</td>
</tr>
<tr>
<td><strong>GCL45053E</strong> KEYWORD: <em>keyword</em> MAXIMUM LENGTH: <em>nnn</em> EXCEEDED</td>
</tr>
<tr>
<td><strong>Explanation:</strong> The operand entered for a keyword exceeded the maximum length allowed for the operand. <em>nnn</em> is the maximum allowed length for the keyword. Processing terminates.</td>
</tr>
</tbody>
</table>
User response: Correct the length of the keyword's operand.

GCL45054E KEYWORD HAS MORE THAN 1 OPERAND; ONLY 1 ALLOWED:
    keyword

Explanation: Multiple operands were detected for a keyword; only one operand is permitted. Processing terminates.

User response: Correct the keyword to use one operand.

GCL45055E STORAGE GROUPS NOT SUPPORTED WITH DATA-MOVER PROGRAM
    NONE

Explanation: The DATA-MOVER program was specified as 'NONE'. Storage group names/masks were specified for the source and/or target volume serials. Processing terminates.

User response: Correct the DATA-MOVER program specified, or, use keywords FROM-VOLSER/TO-VOLSER for the volume serials.

GCL45056E NOTHING SPECIFIED FOR KEYWORD: keyword

Explanation: A keyword was entered without an appropriate operand. Processing terminates.

User response: Specify an appropriate operand for the keyword.

GCL45057E DUPLICATE FOUND; KEYWORD: keyword
    ENTRY: entry

Explanation: The indicated 'entry' for the keyword was previously specified. Processing terminates.

User response: Remove the duplicate entry.

GCL45058E INVALID VALUE IN KEYWORD: keyword
    VALUE: value error text

Explanation: The value in the keyword is invalid. 'error text' indicates the problem detected with the value. Processing terminates.

User response: Correct the value specified in the keyword.

GCL45060E function ERROR; RETURN CODE=nnnn
    REASON CODE=nnnn

Explanation: An error occurred using the UCBLOOK or UCBSCAN macro. Processing terminates.

User response: A return code 4 from UCBLOOK may indicate the volser is offline. If unable to determine the cause of the error, contact IBM Software Support. Have available the listing containing this message.

GCL45061E GCL01SMF ERROR; RETURN CODE=nnnn
    LOC: llllll entry

Explanation: An error occurred using GCL01SMF to obtain SSI information for the 'entry'. llllll is the internal location where the error occurred. Processing terminates.

User response: Contact IBM Software Support. Have available the listing containing this message.

GCL45062E NO STORAGE GROUPS RETURNED BY SSI

Explanation: The VARYOFF command was requested to determine volume serial numbers by storage group names. SSI did not return any storage groups to GCL01SMF. Processing terminates.

User response: Check that storage groups are defined on the system. If unable to determine the cause of this message, contact IBM Software Support. Have available the listing containing this message.

GCL45063E EXPLICIT STORAGE GROUP NOT FOUND; ENTRY: entry

Explanation: The indicated storage group name is not defined as a storage group. Processing terminates.

User response: Correct to specify defined storage group name.

GCL45063W NO STORAGE GROUP MATCH FOUND; ENTRY: entry
    NO VOLUME MATCH FOUND; ENTRY: entry

Explanation: The indicated 'entry' for the keyword was not matched. For STORAGE GROUP, no matches were found for the mask. For VOLUME, the indicated volser, or, the volser derived from a storage group, was not found. Processing continues.

User response: None required.

GCL45067W NO VOLUME SERIALS FOR STORAGE GROUP: storage group

Explanation: SSI did not return any volsers for the storage group to GCL01SMF. Processing continues.

User response: None.

GCL45070E THE COPY COMMAND HAS UNBALANCED PARENTHESES

Explanation: The copy command has unbalanced parentheses. Processing terminates.

User response: Correct the copy command to have balanced parentheses.
GCL45071E  THE COPY COMMAND HAS A KEYWORD THAT IS TOO LONG: keyword
Explanation: The copy command has a keyword specified that is longer than a keyword is expected to be. Processing terminates.
User response: Correct the copy command keyword to be valid.

GCL45072E  THE COPY COMMAND IS NOT A COPY COMMAND
Explanation: The copy command does not appear to be a copy command. Processing terminates.
User response: Correct the copy command.

GCL45073I  PROCESSING COPY COMMAND
Explanation: The copy command is being read and parsed.
User response: None.

GCL45074E  COPY COMMAND HAS MUTUALLY EXCLUSIVE KEYWORDS: keyword1 keyword2
Explanation: The copy command has keywords specified that are mutually exclusive. Processing terminates.
User response: Correct the copy command to not have mutually exclusive keywords specified.

GCL45075E  UNMATCHED ENTRIES IN COPY COMMAND KEYWORD: keyword
Explanation: For VOLPAIRS, there must be a source volume serial, target volume serial. An uneven number of entries was specified. For VOLPAIRSDEVN, there must be a source volume serial, target volume serial, target device number. Unmatched entries were found. Processing terminates.
User response: Correct the keyword specification.

GCL45076E  NO VOLUMES SERIALS SELECTED
Explanation: No volumes were selected for processing. Processing terminates.
User response: Correct the copy command so volumes will be selected for processing.

GCL45077I  VOLUMES SELECTED FOR VARY OFFLINE PROCESSING: volser dddd
Explanation: Lists the volser and device number of the volumes selected for processing.
User response: None.

GCL45078E  VOLUME PAIRS ONLY ACCEPTED WITH DATA-MOVER PROGRAM NONE.
Explanation: Keyword VOLPAIRS, VOLPAIRS-DDN, VOLPAIRSDEVN, VOLPAIRSDEVN-DDN, VOLPAIRSDEVN-NOCLIP, or VOLPAIRSDEVN-NOCLIP-DDN was used, but, the DATA-MOVER program is not 'NONE'. Processing terminates.
User response: Correct the keyword specifications.

GCL45086I  VALIDATING KEYWORD: keyword
Explanation: Parsing is checking the indicated keyword indicated in the command.
User response: None.

GCL45101I hh:mm:ss VARY VOLUMES STARTED - PROGRAM REV=rrr
hh:mm:ss VARY VOLUMES COMPLETED; RETURN CODE=nnn
Explanation: VARYON command processing message.
User response: None.

GCL45106E  ERROR CALLING GCL01VV1 tttttt
FUNCTION: function R15=nnnn R0=nnnnn LOC=llll
Explanation: A problem occurred using a dataspace. tttttt is the name of the internal table. llll is the location where the error occurred. Processing terminates.
User response: Contact IBM Software Support. Have available the listing that contains this message and the GCLINI parmlib member that controls execution of GCL.

GCL45107W  ERROR CALLING GCL01HEX;
FUNCTION: function R15=nnnn
Explanation: An error occurred using GCL01HEX to print a record. Processing continues.
User response: Please report this message to IBM Software Support.

GCL45120I CONSOLE name ACQUIRED FOR SYSPLEX VARY COMMANDS
Explanation: A console session has been acquired so that syssplex vary commands can be issued.
User response: None.
GCL45121I  CONSOLE name FREED
Explanation: The operator console has been freed.
User response: None.

GCL45122W UNABLE TO ACQUIRE A CONSOLE
Explanation: IMS Cloning Tool has failed to acquire a console for performing operator commands. Processing continues without using a console to perform operator commands.
User response: Contact IBM Software Support. Have available the listing containing this message.

GCL45123I CONSOLE name ALREADY IN USE, WILL TRY ANOTHER
Explanation: The displayed name is already in use, probably from another copy of GCL. IMS Cloning Tool will increment the number portion of the name and try again.
User response: None.

GCL45124W MCS ALERT RECEIVED; text
Explanation: An alert has been received for the console. Text describes the type of alert. Processing continues.
User response: Please report this message to IBM Software Support.

GCL45125I COMMAND: text
Explanation: Display operator command being issued.
User response: None.

GCL45126W WAIT TIME EXCEEDED FOR COMMAND RESPONSE
Explanation: A response to the operator command was not received in a timely manner. Processing continues.
User response: Please report this message to IBM Software Support.

GCL45127I NON RESPONSE MDBS RECEIVED: nnn
Explanation: Informational message that displays the number of received messages that were not a response to the command issued.
User response: None.

GCL45131W MCSOPER ERROR; FUNCTION= function RC=nnnn RSN=nnnn
MCSOPMSG ERROR; FUNCTION= function RC=nnnn RSN=nnnn
Explanation: An error occurred using the MCSOPER or MCSOPMSG macro. Processing continues.
User response: Contact IBM Software Support. Have available the listing containing this message.

GCL45142I VOLUME SERIAL: volser DEVICE NUMBER: dddd IS PENDING OFFLINE
Explanation: The indicated device is now pending offline to the current system.
User response: None.

GCL45144E DEVICE NUMBER: dddd FOR TARGET VOLUME: volser DOES NOT EXIST
Explanation: The indicated device number is not defined to the z/OS system. Processing terminates.
User response: Correct the device number to use a defined device.

GCL45145E DEVICE NUMBER: dddd IS ONLINE WITH UNEXPECTED VOLUME SERIAL: volser
Explanation: The indicated device number is online but the volser of the device does match what is expected. Processing terminates.
User response: Either correct the device number to use the correct device or correct the device to have the correct contents.

GCL45136E IEEVARYD VARY OFFLINE FAILED FOR VOLSER: volser DEVICE: dddd; INVALID PARAMETERS | IEEVARYD VARY ONLINE FAILED FOR VOLSER: volser DEVICE: dddd; INVALID PARAMETERS
Explanation: The parameters given to IEEVARYD are incorrect. Processing terminates.
User response: Contact IBM Software Support. Have available the listing containing this message.

GCL45137E IEEVARYD VARY OFFLINE FAILED FOR VOLSER: volser DEVICE: dddd RETURN CODE: nnnnnnnn REASON CODE: nnnnnnnn
Explanation: The vary for the indicated device failed. Processing terminates.
**GCL45138E • GCL46009E**

**User response:** Correct the problem causing the vary to fail. If unable to correct the problem, contact IBM Software Support. Have available the listing that contains this message.

**GCL45138E** IEEVARYD VARY OFFLINE FAILED FOR VOLSER: volser DEVICE: dddd R15: nnnnnnn | IEEVARYD VARY ONLINE FAILED FOR VOLSER: volser DEVICE: dddd R15: nnnnnnn

**Explanation:** The vary for the indicated device failed. Processing terminates.

**User response:** Correct the problem causing the vary to fail. If unable to correct the problem, contact IBM Software Support. Have available the listing that contains this message.

**GCL45140I** NO VOLUMES NEEDED LOCAL VARY OFFLINE | NO VOLUMES NEEDED LOCAL VARY ONLINE

**Explanation:** No volumes needed to be varied on the local system.

**User response:** None.

**GCL45141I** VOLUME SERIAL: volser DEVICE NUMBER: dddd IS NOW OFFLINE | VOLUME SERIAL: volser DEVICE NUMBER: dddd IS NOW ONLINE

**Explanation:** The indicated device is now offline or online to the current system.

**User response:** None.

**GCL45146W** DEVICE NUMBER: dddd FOR VOLUME: volser IS STILL OFFLINE

**Explanation:** The vary online got a good return code but the device is still offline. Processing continues.

**User response:** Determine why the volume went offline after it was varied online. If unable to determine the cause, contact IBM Software Support. Have available the listing containing this message and the system log from the time this happened.

**GCL45147I** VOLUME SERIAL: volser DEVICE NUMBER: dddd WILL BE VARIED OFFLINE | VOLUME SERIAL: volser DEVICE NUMBER: dddd WILL BE VARIED ONLINE

**Explanation:** Display the vary that will be done.

**User response:** None.

**GCL45160E** ERROR DURING UCBLOOK FOR DEVICE NUMBER dddd VOLUME SERIAL: volser RETURN CODE=nnnn REASON CODE=nnnn

**Explanation:** An error occurred using the UCBLOOK macro. Processing terminates.

**User response:** A return code 4 from UCBLOOK may indicate the volser is offline. If unable to determine the cause of the error, contact IBM Software Support. Have available the listing containing this message.

**GCL46001I** hh:mm:ss VARYON STARTED - PROGRAM REV=rrr | hh:mm:ss VARYON COMPLETED; RETURN CODE=nnn

**Explanation:** VARYON command processing message.

**User response:** None.

**GCL46003I** DDNAME=ddname ALLOCATED FOR DSN=datasetname

**Explanation:** 'ddname' has been dynamically allocated for the indicated data set.

**User response:** None.

**GCL46004E** DDNAME MISSING=ddname

**Explanation:** 'ddname' was specified for IMS Cloning Tool to use. Processing terminates.

**User response:** Either correct the ddname specified, or, add the appropriate ddname to the job's JCL.

**GCL46007W** ERROR CALLING GCL01HEX; FUNCTION: function R15=nnnn

**Explanation:** An error occurred using GCL01HEX to print a record. Processing continues.

**User response:** Please report this message to IBM Software Support.

**GCL46008E** UNABLE TO LOAD PROGRAM: program name

**Explanation:** The indicated program name was not found. Processing terminates.

**User response:** Check that the job's //STEPLIB library is correct. If unable to resolve the problem, contact IBM Software Support.

**GCL46009E** ERROR ACCESSING JOURNAL FILE; LOC=lllll | ERROR ACCESSING VARY FILE; LOC=lllll

**Explanation:** A VSAM error occurred accessing the journal or vary file. Processing terminates.
**User response:** See associated GCLVSEnnE error messages. If unable to resolve problem, contact IBM Software Support. Have available the listing that contains these messages.

**GCL46011E** JOURNAL CONTROL RECORD NOT FOUND | JOURNAL VOLP RECORD NOT FOUND | VARY CONTROL RECORD NOT FOUND | VARY VOL RECORD NOT FOUND  

**Explanation:** An expected record was not found in the IMS Cloning Tool journal file or the IMS Cloning Tool vary file. Processing terminates.  

**User response:** Contact IBM Software Support. Have available the listing that contains this message.

**GCL46012E** JOURNAL CONTROL RECORD IS WRONG VERSION | JOURNAL VOLP RECORD IS WRONG VERSION | VARY CONTROL RECORD IS WRONG VERSION | VARY VOL RECORD IS WRONG VERSION  

**Explanation:** The journal or vary record does not match the expected format. The record is printed. Processing terminates.  

**User response:** Verify that different releases of IMS Cloning Tool have not been run using the same journal or vary data set. If unable to resolve problem, contact IBM Software Support. Have available the listing that contains this message.

**GCL46013E** COUNT MISMATCH; RECORDS READ=rrrr CONTROL RECORD COUNT=cccc  

**Explanation:** There was a problem with the journal or vary records needed to initiate the command. The number of records read from the journal or vary, rrrr, is not the same as the number indicated in the journal or vary control record, cccc. Processing terminates.  

**User response:** Contact IBM Software Support. Have available the listing that contains this message.

**GCL46014E** DEVICE NOT DEFINED; VOLSER: volser  

**Explanation:** The device number that was specified is not defined to the z/OS system. Processing terminates.  

**User response:** Change the specified device number to be a defined device defined to the z/OS system.

**GCL46015E** VOLUME ALREADY ONLINE; VOLSER: volser DEVICE NUMBER: dddd  

**Explanation:** The device number that was specified is already online to the z/OS system. Processing terminates if VOL-ALREADY-ONLINE(QUIT) is specified.  

**User response:** Bring the volume offline or use VOL-ALREADY-ONLINE(CONTINUE) if the volume should already be online.

**GCL46033E** WRONG VOLSER FOUND; FOUND VOLSER: volser EXPECTED VOLSER: volser DEVICE NUMBER: dddd  

**Explanation:** The wrong volser was found on device devn. Processing terminates.  

**User response:** Correct the volume and device number specifications to match the current volser on the device.

**GCL46034E** DEVICE NUMBER IS NOT KNOWN; VOLSER: volser  

**Explanation:** The volume is not online and a device number has not been specified for the volume. The device number is needed to vary the volume online. Processing terminates.  

**User response:** Either bring the volume online or specify the device number of the volume if possible.

**GCL46048I** OPTIONS IN EFFECT FOR THIS EXECUTION: merged options  

**Explanation:** Informational message indicating how VARYON will handle the options. The displayed options are derived from the INI and any overriding specifications in the command input.  

**User response:** None.

**GCL46050E** ERROR IN PARAMETERS FOR keyword  

**Explanation:** The parameters for the indicated keyword were incorrect. Processing terminates.  

**User response:** Check the keyword parameters. Mutually exclusive keywords may have been used.

**GCL46051E** REQUIRED KEYWORD MISSING: keyword  

**Explanation:** A keyword required for processing has been omitted. Processing terminates.  

**User response:** Specify the required keyword.

**GCL46053E** KEYWORD: keyword MAXIMUM LENGTH: nnn EXCEEDED  

**Explanation:** The operand entered for a keyword exceeded the maximum length allowed for the operand. nnn is the maximum allowed length for the keyword. Processing terminates.  

**User response:** Correct the length of the keyword's operand.
GCL46054E • GCL48009E

GCL46054E  KEYWORD HAS MORE THAN 1 OPERAND; ONLY 1 ALLOWED:
               keyword
Explanation: Multiple operands were detected for a keyword; only one operand is permitted. Processing terminates.
User response: Correct the keyword to use one operand.

GCL46056E  NOTHING SPECIFIED FOR KEYWORD: keyword
Explanation: A keyword was entered without an appropriate operand. Processing terminates.
User response: Specify an appropriate operand for the keyword.

GCL46058E  INVALID VALUE IN KEYWORD:
               keyword VALUE: value error text
Explanation: The value in the keyword is invalid. 'error text' indicates the problem detected with the value. Processing terminates.
User response: Correct the value specified in the keyword.

GCL46060E  function ERROR; RETURN CODE=nnnn
               REASON CODE=nnnn
Explanation: An error occurred using the UCBLOOK macro. Processing terminates.
User response: A return code 4 from UCBLOOK may indicate the volser is offline. If unable to determine the cause of the error, contact IBM Software Support. Have available the listing containing this message.

GCL46077I  VOLUMES SELECTED FOR VARY ONLINE PROCESSING: volser dddd
Explanation: Lists the volser and device number of the volumes selected for processing.
User response: None.

GCL46086I  VALIDATING KEYWORD: keyword
Explanation: Parsing is checking the indicated keyword indicated in the command.
User response: None.

GCL48003I  DDNAME=ddname ALLOCATED FOR DSN=datasetname
Explanation: 'ddname' has been dynamically allocated for the indicated data set.
User response: None.

GCL48004E  DDNAME MISSING=ddname
Explanation: 'ddname' was specified for IMS Cloning Tool to use. Processing terminates.
User response: Either correct the ddname specified, or, add the appropriate ddname to the job's JCL.

GCL48005E  ALLOCATION FAILED FOR DSN: datasetname
Explanation: Dynamic allocation for a data set failed. The associated z/OS messages are displayed. If an allocation failure occurs, processing terminates.
User response: If unable to determine the reason for the failure from the associated z/OS messages, contact IBM Software Support. Have available the listing containing these messages.

GCL48005W  DEALLOCATION FAILED FOR DDN: ddname
Explanation: Dynamic deallocation for a ddname failed. The associated z/OS messages are displayed. If a deallocation failure occurs, processing continues.
User response: If unable to determine the reason for the failure from the associated z/OS messages, contact IBM Software Support. Have available the listing containing these messages.

GCL48007W  ERROR CALLING GCL01HEX;
               FUNCTION: function R15=nnnn
Explanation: An error occurred using GCL01HEX to print a record. Processing continues.
User response: Please report this message to IBM Software Support.

GCL48009E  ERROR ACCESSING JOURNAL FILE;
               DDN=ddname LOC=lllll
Explanation: A VSAM error occurred accessing a journal file. Processing terminates.
User response: See associated GCLVSEmE error messages. If unable to resolve problem, contact IBM Software Support. Have available the listing that contains these messages.
**GCL48010E**  DUPLICATE JOURNAL ENTRY;
**Explanation:** A duplicate record was detected in the NEW journal file. Processing terminates.
**User response:** Verify the referenced NEW journal file was empty when the JRNLUPGRADE command started processing. If unable to resolve problem, contact IBM Software Support. Have available the listing that contains these messages.

**GCL48020E**  UNKNOWN JOURNAL RECORD
  **TYPE:** type
**Explanation:** The OLD journal contains an unknown record type. The record is printed. Processing terminates.
**User response:** Verify the current version of the JRNLUPGRADE command is being used. If unable to resolve problem, contact IBM Software Support. Have available the listing that contains these messages.

**GCL48021E**  UNKNOWN JOURNAL RECORD
  **VERSION**
**Explanation:** The OLD journal contains an unknown version of a record. The record is printed. Processing terminates.
**User response:** Verify the current version of the JRNLUPGRADE command is being used. If unable to resolve problem, contact IBM Software Support. Have available the listing that contains these messages.

**GCL48031I**  nnn TOTAL RECORDS READ
**Explanation:** Shows the total number of records read from the OLD journal.
**User response:** None.

**GCL48032I**  nnn TOTAL RECORDS WRITTEN
**Explanation:** Shows the total number of records written to the NEW journal.
**User response:** None.

**GCL48033I**  nnn type RECORDS UPGRADED
**Explanation:** Shows the total number of records of the displayed type that have been upgraded to the current level.
**User response:** None.

**GCL48034I**  nnn type RECORDS ALREADY AT CURRENT LEVEL
**Explanation:** Shows the total number of records of the displayed type that did not need to be upgraded because they were already at the current level.
**User response:** None.

**GCL48051E**  REQUIRED KEYWORD MISSING:
  **keyword**
**Explanation:** A keyword required for processing has been omitted. Processing terminates.
**User response:** Specify the required keyword.

**GCL48053E**  KEYWORD: keyword  MAXIMUM LENGTH: nnn EXCEEDED
**Explanation:** The operand entered for a keyword exceeded the maximum length allowed for the operand. nnn is the maximum allowed length for the keyword. Processing terminates.
**User response:** Correct the length of the keyword's operand.

**GCL48054E**  KEYWORD HAS MORE THAN 1 OPERAND; ONLY 1 ALLOWED:
  **keyword**
**Explanation:** Multiple operands were detected for a keyword; only one operand is permitted. Processing terminates.
**User response:** Correct the keyword to use one operand.

**GCL48056E**  NOTHING SPECIFIED FOR KEYWORD: keyword
**Explanation:** A keyword was entered without an appropriate operand. Processing terminates.
**User response:** Specify an appropriate operand for the keyword.

**GCL48058E**  INVALID VALUE IN KEYWORD:
  **keyword VALUE:** value  error text
**Explanation:** The value in the keyword is invalid. 'error text' indicates the problem detected with the value. Processing terminates.
**User response:** Correct the value specified in the keyword.
GCL90101E • GCLDCU09E

GCL90101E  RENAME MASK IS INVALID: new name mask
Explanations: New name mask is invalid.
User response: Correct the error in the RENAME-MASKS keyword.

GCL90102E  NEW NAME GREATER THAN 44 BYTES: new datasetname
Explanations: New name masks resulted in new data set name that was greater than 44 characters.
User response: Correct the error in the RENAME-MASKS keyword.

GCL90103E  NEW NAME IS INVALID: new datasetname
Explanations: New name masks resulted in new data set name that was invalid.
User response: Correct the error in the RENAME-MASKS keyword.

GCL90201W  SMS CLASSES NOT RETURNED BY ACS ROUTINES: RC=yyyyyyyyy REASON=zzzzzzzz DSN=datasetname
Explanations: Attempt to derive the new SMS classes for a data set failed.
User response: Check job log and GCLPRINT for any additional messages. If unable to determine the reason for failure, contact IBM Software Support. Have available the listing that contains this message.

GCL90207W  ERROR CALLING GCL01HEX; FUNCTION: function R15=nnnn
Explanations: An error occurred using GCL01HEX to print a record. Processing continues.
User response: Please report this message to IBM Software Support.

GCL90410E  UNEXPECTED RETURN CODE FROM RACROUTE
Explanations: A RACROUTE macro call got an unexpected return code. Processing terminates.
User response: Contact IBM Software Support. Have available the listing containing this message.

GCLACB02E  LOAD LIBRARY request FAILED, DD=ddname, RC=nnnn
Explanations: A request to OPEN or CLOSE a library failed. Processing terminates.
User response: Review the job log for other messages indicating why the OPEN or CLOSE failed. If unable to resolve the problem, contact IBM Software Support.

GCLACB03E  DESERV request FAILED, DD=ddname, RC=return code
Explanations: The request to read the PDS or PDSE directory for the specified ddname failed.
User response: Review the job log for other messages indicating why the DESERV failed. If unable to resolve the problem contact IBM Software Support.

GCLDCU04E  ALLOCATION FAILED FOR DSN= dsname
Explanations: A problem occurred when attempting to allocate a data set. Processing terminates.
User response: Review the job log for other messages indicating why the allocation failed.

GCLDCU05E  requesttype FAILED FOR DDNAME: ddname
Explanations: A problem occurred when attempting a dynamic allocation request for the specified DD. If the message is a warning, processing continues, else processing will terminate.
User response: Report the problem to IBM Software Support. Have the output from the job which encountered this problem available.

GCLDCU05W  requesttype FAILED FOR DDNAME: ddname
Explanations: A problem occurred when attempting a dynamic allocation request for the specified DD. If the message is a warning, processing continues, else processing will terminate.
User response: Report the problem to IBM Software Support. Have the output from the job which encountered this problem available.

GCLDCU06E  DBRC FAILED, RC=xxxx
Explanations: The DBRC utility returned a non-zero return code. Processing terminates.
User response: Review the SYSPRINT output to determine the reason for the DBRC failure. If the SYSPRINT output is not available, the job can be rerun with a SYSPRINT DD specified in the JCL. If the problem can not be corrected by the user, contact IBM Software Support with the job output.

GCLDCU09E  ERROR ACCESSING ddname FILE; LOC=lllll
Explanations: An error occurred accessing the specified file. Processing terminates.
User response: View joblog for other messages. If unable to resolve problem, contact IBM Software Support. Have available the listing that contains these messages.

GCLDNF62E UNABLE TO LOCATE dbname IN ACBLIB
Explanation: An error was encountered when attempting to locate a member from an ACBLIB data set. Processing terminates.
User response: Verify the correct ACBLIB data set(s) was specified in the job. Review the system log for any error messages. If unable to resolve the problem, contact IBM Software Support.

GCLDNF63E UNABLE TO LOCATE member MEMBER IN ACBLIB
Explanation: An error was encountered when attempting to locate a member from the ACBLIB data set. Processing terminates.
User response: Verify the correct ACBLIB data set(s) was specified in the job and that the proper DBD name was specified. Review the system log for any error messages. If unable to resolve the problem, contact IBM Software Support.

GCLDNF66E UNABLE TO READ ACBLIB MEMBER: dbname
Explanation: An error was encountered when attempting to read a member from an ACBLIB data set. Processing terminates.
User response: Verify the correct ACBLIB data set(s) was specified in the job. Review the system log for any error messages. If unable to resolve the problem, contact IBM Software Support.

GCLDNF67E UNABLE TO FIND DATA SET NAME FOR DBD: dbname DDNAME: dbname
Explanation: An error was encountered when attempting to read a member from a MDA data set. Processing terminates.
User response: Verify the correct MDA data set(s) was specified in the job. Review the system log for any error messages. If unable to resolve the problem, contact IBM Software Support.

GCLDNF68E UNABLE TO GET DBD INFORMATION FOR DBD: dbname
Explanation: An error was encountered when attempting to obtain DB info for the specified dbdname. Processing terminates.
User response: Verify the correct ACB, MDA, & RECON data set(s) were specified in the job. Review the system log for any error messages. If unable to resolve the problem, contact IBM Software Support.

GCLDSS01W DFSMSdss COPY COMPLETED;
RETURN CODE=nnnn
Explanation: An invocation of DFSSMSdss COPY function completed with a non-zero return code.
User response: Review the SYSPRINT output for additional messages from DFSSMSdss indicating the cause of the return code.

GCLDSS04E requesttype FAILED FOR DDNAME: ddname
Explanation: A problem occurred when attempting a dynamic allocation request for the specified DD. Processing will terminate.
User response: Report the problem to IBM Software Support. Have the output from the job which encountered this problem available.

Chapter 10. Reference: Messages 413
**GCLDSS05W • GCLERR04I**

**GCLDSS05W requesttype FAILED FOR DDNAME: ddname**

**Explanation:** A problem occurred when attempting a dynamic allocation request for the specified DD. Processing will continues.

**User response:** Report the problem to IBM Software Support. Have the output from the job which encountered this problem available.

**GCLDSS06E DS COPY FAILED, RC=xxxx**

**Explanation:** The DFSMSdss utility returned a non-zero return code. Processing terminates.

**User response:** Review the SYSPRINT output to determine the reason for the DFSMSdss failure. If the SYSPRINT output is not available, the job can be rerun with a DSSPRINT DD specified in the JCL. If the problem cannot be corrected by the user, contact IBM Software Support with the job output.

**GCLDSS09E ERROR ACCESSING ddname FILE; LOC=lllll**

**Explanation:** An error occurred accessing the specified file. Processing terminates.

**User response:** View joblog for other messages. If unable to resolve problem, contact IBM Software Support. Have available the listing that contains these messages.

**GCLDYN01I SYNTAX ERROR IN VALUE OF XXXX -n |: Illegal character in input text |: GCL01PSN not available |: IEFDB476 not available |: Unknown request type |: Function complete. RC=0 |: DSN failed RACF test |: Not enough text units - |: Critical keyword missing: xxxx |: SVC 99 (F) FAILURE. R15: xx ERROR: xxxx INFO: xxxx**

**Explanation:** Indicates GCL01DYN failed during a dynamic allocation function.

**User response:** Report this error and associated product errors to IBM Software Support.

**GCLEIT07E ALLOCATION FAILED FOR MEMBER: membername in DSN:dsname**

**Explanation:** A problem occurred when attempting to allocate a member of a PDS. Processing terminates.

**User response:** Review the job log for other messages indicating why the allocation failed.

**GCLEIT08E OPEN FAILED FOR DSN:dsname**

**Explanation:** A problem occurred when attempting to open a member of a PDS. Processing terminates.

**User response:** Review the job log for other messages indicating why the allocation failed.

**GCLERR001 OBJECT ACCESS FAILURE, DDNAME: ddn**

**Explanation:** These messages are issued when the Catalog Fast Reader, Catalog Keyed Updater, or VVDS Handler encounter an error.

**User response:** Depends on other messages. Generally, these messages are designed to be self explanatory, and are used by staff for extended debugging. Please contact IBM Software Support.

**GCLERR011 VVDS ACCESS FAILURE, DDNAME: ddn**

**Explanation:** These messages are issued when the Catalog Fast Reader, Catalog Keyed Updater, or VVDS Handler encounter an error.

**User response:** Depends on other messages. Generally, these messages are designed to be self explanatory, and are used by staff for extended debugging. Please contact IBM Software Support.

**GCLERR02I DSN: usercat name**

**Explanation:** User Catalog cannot be accessed.

**User response:** Follow the Programmer Response for message IEC161I found in JESYSMSGs or eliminate the usercat from the selection list.

**GCLERR03I NO DD ALLOCATION FOUND**

**Explanation:** These messages are issued when the Catalog Fast Reader, Catalog Keyed Updater, or VVDS Handler encounter an error.

**User response:** Depends on other messages. Generally, these messages are designed to be self explanatory, and are used by staff for extended debugging. Please contact IBM Software Support.

**GCLERR04I FAILING module FUNCTION: ##.description**

**Explanation:** These messages are issued when the Catalog Fast Reader, Catalog Keyed Updater, or VVDS Handler encounter an error.

**User response:** Depends on other messages. Generally, these messages are designed to be self explanatory, and are used by staff for extended debugging. Please contact IBM Software Support.
GCLERR05I  PREVIOUS module FUNCTION:
## \description

**Explanation:** These messages are issued when the Catalog Fast Reader, Catalog Keyed Updater, or VVDS Handler encounter an error.

**User response:** Depends on other messages. Generally, these messages are designed to be self explanatory, and are used by staff for extended debugging. Please contact IBM Software Support.

---

GCLERR06I  PROGRAM CSECT: csect

**Explanation:** These messages are issued when the Catalog Fast Reader, Catalog Keyed Updater, or VVDS Handler encounter an error.

**User response:** Depends on other messages. Generally, these messages are designed to be self explanatory, and are used by staff for extended debugging. Please contact IBM Software Support.

---

GCLERR08I  statement ERROR ID: listingID#

**Explanation:** These messages are issued when the Catalog Fast Reader, Catalog Keyed Updater, or VVDS Handler encounter an error.

**User response:** Depends on other messages. Generally, these messages are designed to be self explanatory, and are used by staff for extended debugging. Please contact IBM Software Support.

---

GCLERR09I  statement ASM LISTING LINE #: line#

**Explanation:** These messages are issued when the Catalog Fast Reader, Catalog Keyed Updater, or VVDS Handler encounter an error.

**User response:** Depends on other messages. Generally, these messages are designed to be self explanatory, and are used by staff for extended debugging. Please contact IBM Software Support.

---

GCLERR10I  R15 = ##, description

**Explanation:** These messages are issued when the Catalog Fast Reader, Catalog Keyed Updater, or VVDS Handler encounter an error.

**User response:** Depends on other messages. Generally, these messages are designed to be self explanatory, and are used by staff for extended debugging. Please contact IBM Software Support.

---

GCLERR11I  PROCESSOR R15: r15

**Explanation:** These messages are issued when the Catalog Fast Reader, Catalog Keyed Updater, or VVDS Handler encounter an error.

**User response:** Depends on other messages. Generally, these messages are designed to be self explanatory, and are used by staff for extended debugging. Please contact IBM Software Support.

---

GCLERR12I  This is the decimal value of the failure reason code. Usually this is followed by message GCLERR20I containing text explanation of the reason code. If a text explanation is not available, GCLERR18I is issued, "NO DESCRIPTION FOR REASON CODE".

**Explanation:** These messages are issued when the Catalog Fast Reader, Catalog Keyed Updater, or VVDS Handler encounter an error.

**User response:** If message GCLERR18I follows GCLERR15I and the error is determined by OPEN, CLOSE or VSAM (as indicated by message GCLERR19I), additional information about the reason code can be obtained by consulting manual "z/OS Macro Instruction for Data Sets" section "VSAM Macro Return and Reason Codes". There are sub-sections for "OPEN", "CLOSE" and "Record Management" respectively.

---

GCLERR13I  SVC99 ERROR CODE:

**Explanation:** These messages are issued when the Catalog Fast Reader, Catalog Keyed Updater, or VVDS Handler encounter an error.

**User response:** Depends on other messages. Generally, these messages are designed to be self explanatory, and are used by staff for extended debugging. Please contact IBM Software Support.

---

GCLERR14I  SVC99 INFORMATION CODE

**Explanation:** These messages are issued when the Catalog Fast Reader, Catalog Keyed Updater, or VVDS Handler encounter an error.

**User response:** Depends on other messages. Generally, these messages are designed to be self explanatory, and are used by staff for extended debugging. Please contact IBM Software Support.
GCLERR18I • GCLERR28I

GCLERR18I NO DESCRIPTION FOR REASON CODE
Explanation: These messages are issued when the Catalog Fast Reader, Catalog Keyed Updater, or VVDS Handler encounter an error.
User response: Depends on other messages. Generally, these messages are designed to be self explanatory, and are used by staff for extended debugging. Please contact IBM Software Support.

GCLERR19I ERROR DETERMINED BY
Explanation: These messages are issued when the Catalog Fast Reader, Catalog Keyed Updater, or VVDS Handler encounter an error.
User response: Depends on other messages. Generally, these messages are designed to be self explanatory, and are used by staff for extended debugging. Please contact IBM Software Support.

GCLERR20I description
Explanation: These messages are issued when the Catalog Fast Reader, Catalog Keyed Updater, or VVDS Handler encounter an error.
User response: Depends on other messages. Generally, these messages are designed to be self explanatory, and are used by staff for extended debugging. Please contact IBM Software Support.

GCLERR21I ** IMPLICIT OPEN
Explanation: These messages are issued when the Catalog Fast Reader, Catalog Keyed Updater, or VVDS Handler encounter an error.
User response: Depends on other messages. Generally, these messages are designed to be self explanatory, and are used by staff for extended debugging. Please contact IBM Software Support.

GCLERR22I ** IMPLICIT CLOSE
Explanation: These messages are issued when the Catalog Fast Reader, Catalog Keyed Updater, or VVDS Handler encounter an error.
User response: Depends on other messages. Generally, these messages are designed to be self explanatory, and are used by staff for extended debugging. Please contact IBM Software Support.

GCLERR23I ** IMPLICIT REPOSITION
Explanation: These messages are issued when the Catalog Fast Reader, Catalog Keyed Updater, or VVDS Handler encounter an error.
User response: Depends on other messages. Generally, these messages are designed to be self explanatory, and are used by staff for extended debugging. Please contact IBM Software Support.

GCLERR24I OPEN CLASSIFICATION:
Explanation: These messages are issued when the Catalog Fast Reader, Catalog Keyed Updater, or VVDS Handler encounter an error.
User response: Depends on other messages. Generally, these messages are designed to be self explanatory, and are used by staff for extended debugging. Please contact IBM Software Support.

GCLERR25I CALLING PARM LRECL:
Explanation: These messages are issued when the Catalog Fast Reader, Catalog Keyed Updater, or VVDS Handler encounter an error.
User response: Depends on other messages. Generally, these messages are designed to be self explanatory, and are used by staff for extended debugging. Please contact IBM Software Support.

GCLERR26I CALLING PARM KEYLEN:
Explanation: These messages are issued when the Catalog Fast Reader, Catalog Keyed Updater, or VVDS Handler encounter an error.
User response: Depends on other messages. Generally, these messages are designed to be self explanatory, and are used by staff for extended debugging. Please contact IBM Software Support.

GCLERR27I LRECL:
Explanation: These messages are issued when the Catalog Fast Reader, Catalog Keyed Updater, or VVDS Handler encounter an error.
User response: Depends on other messages. Generally, these messages are designed to be self explanatory, and are used by staff for extended debugging. Please contact IBM Software Support.

GCLERR28I CI RBA REQUESTED:
Explanation: These messages are issued when the Catalog Fast Reader, Catalog Keyed Updater, or VVDS Handler encounter an error.
User response: Depends on other messages. Generally, these messages are designed to be self explanatory, and are used by staff for extended debugging. Please contact IBM Software Support.
GCLERR29I  VVR/NVR KEY REQUESTED:
Explanation: These messages are issued when the Catalog Fast Reader, Catalog Keyed Updater, or VVDS Handler encounter an error.
User response: Depends on other messages. Generally, these messages are designed to be self explanatory, and are used by staff for extended debugging. Please contact IBM Software Support.

GCLERR30I  RECORD TYPE REQUESTED:
Explanation: These messages are issued when the Catalog Fast Reader, Catalog Keyed Updater, or VVDS Handler encounter an error.
User response: Depends on other messages. Generally, these messages are designed to be self explanatory, and are used by staff for extended debugging. Please contact IBM Software Support.

GCLERR31I  VVR KEYRANGE QUALIFIER REQUESTED:
Explanation: These messages are issued when the Catalog Fast Reader, Catalog Keyed Updater, or VVDS Handler encounter an error.
User response: Depends on other messages. Generally, these messages are designed to be self explanatory, and are used by staff for extended debugging. Please contact IBM Software Support.

GCLFLG06E  xcfrequest FAILED, RC=return code
RSN=reason code
Explanation: A problem occurred when attempting an XCF service. Processing terminates.
User response: Review the return and reason code for the XCF service that failed in the MVS Programming Sysplex Service Reference Guide. If the return and reason code do not indicate an environmental error, report the problem to IBM Software Support. Have the output from the job that encountered this problem available.

GCLFLG10I  LOGEXIT INITIALIZATION COMPLETED
Explanation: Informational message indicating that IMS Cloning Tool has been enabled in the IMS system of batch job.
User response: None.

GCLFLG11E  LOGEXIT FAILED, REASON=reason
Explanation: IMS Cloning Tool was unable to establish itself in the IMS system or batch job.
User response: Report this message to IBM Software Support.

GCLFLG15I  ssid SUSPENDED BY jobname
Explanation: Informational message indicating that an active IMS system or job has suspended activity as requested to by the specified job.
User response: None.

GCLFLG16I  ssid RESUMED
Explanation: Informational message indicating that an active IMS system has resumed activity.
User response: None.

GCLFLG97I  JOINED | LEFT XCF GROUP groupname AS MEMBER membername
Explanation: Informational message indicating that the job or STC successfully joined or left the XCF group.
User response: None.

GCLICD96E  csl request FAILED, RC=nnnn
RSN=nnnn
Explanation: A CSL request to the IMS SCI failed.
User response: Verify that the SCI address space is active. Review the joblog for other messages indicating why the CSL request failed. If unable to resolve the problem contact IBM Software Support.

GCLINP00I  GCL01INP starting
(REV=nn,PMR=xxxxxx,fixdate=xxxxxxx’)
Explanation: Message shows current version of the module.
User response: None.

GCLINP01E  Error parsing PARMLIB INI# member on line n | Error parsing PARMLIB INI member on line n
Explanation: An error was found in when parsing an INI member.

Chapter 10. Reference: Messages 417
User response: Look for subsequent messages repair the PARMLIB(xxxINI) or PARMLIB(xxxINI#) member as indicated.

**GCLINP02E** Umatched */ | Continued statement at end of file

Explanation: An end-comment (*/) was found for which there was no begin-comment (/ *).

User response: Remove the end-comment or insert a begin-comment in the appropriate location.

**GCLINP05E** Token name longer than 72

Explanation: A Token name longer than 72 bytes was found on the specified line.

User response: Reduce the length of the token to 72 or less.

**GCLINP06E** Expected = after token name

Explanation: An equal sign (=) was not found after the Token and its value.

User response: Insert an equal sign (=) between the Token and its value.

**GCLINP07E** Expected = after token name

Explanation: An equal sign (=) was not found after the Token name.

User response: Insert an equal sign (=) between the Token and its value.

**GCLINP08E** Found non-NOTES token before 1st section name

Explanation: A Token was found before any Section was specified. Only the 'Notes' Token is allowed before a section name. Reminder, Notes is provided for the customer and no product code can access the Notes value.

User response: Ensure that the first non-comment line and non-Notes token is a Section name.

**GCLINP09E** Duplicate Section/Token found | Section | Token

Explanation: A token can not be defined twice for the same section.

User response: Remove the redundant token and retry.

**GCLINP10E** file function FAIL, RC = nnnnnnn

Explanation: An unrecoverable error occurred during processing.

User response: Contact IBM Software Support.

**GCLINP11E** Open failure, DD ddname | DD INI OPEN FAILURE | DD SYSPRINT open failure | DD UPDATE open failure | DD TRACEDD open failure

Explanation: An unrecoverable error occurred during processing.

User response: Contact IBM Software Support.

**GCLINP12E** EXPECTED PARM VALUE OR RECORD, FOUND function

Explanation: An unrecoverable error occurred during processing.

User response: Insert an equal sign (=) between the Token and its value.

**GCLINP13E** Error parsing MSCINI

Explanation: MSCINI INIMERGE failed to parse the MSCINI input because it could not find the INIMERGE_SECTION values.

User response: Use the INI# member distributed by and retry. If you need help with this contact IBM Software Support.

**GCLINP15W** Columns 73-80 not blank on line

Explanation: INI parser detected characters in columns 73-80. Technical Support has found that many INI errors occur because the person editing the INI doesn’t see text in columns 73-80.

User response: Edit the PARMLIB INI member so that columns 73-80 are blank.

**GCLINP21E** Sysplex name more than 8 characters

Explanation: The sysplex value on an INI section statement is invalid because it is too long.

User response: Repair the section name and retry.

**GCLINP22E** System name more than 8 characters

Explanation: The system value on an INI section statement is invalid because it is too long.

User response: Repair the section name and retry.
GCLINP31E Section name longer that 72
Explanation: The section name is limited in size.
User response: Repair the section name and retry.

GCLINP31E Section name longer that 72
Explanation: The section name is limited in size.
User response: Repair the section name and retry.

GCLINP32E Invalid section name
Explanation: The section name can have alphanumeric characters in addition to a period, dash, underscore or slash.
User response: Repair the section name and retry.

GCLINP33E Period(“.”) found in INI# section
Explanation: A period character in the section name is valid in a customer INI for denoting sysplex and system names but is not valid in the distributed INI#.
User response: Repair the section name and retry.

GCLINP34E Qualified INIMERGE_VALUES in INI  
Qualified PRODUCT_INFO in INI
Explanation: These sections can not qualified by sysplex and/or system name.
User response: Repair the section name and retry.

GCLINP35E Two INIMERGE_VALUES sections found
Explanation: The INIMERGE_VALUES may only appear once in the INI.
User response: Repair the section name and retry.

GCLINP36E Qualified section after generic
Explanation: A section was found with sysplex and/or system qualifications but it follows the same section without such qualification. This section can never be accessed and is invalid.
User response: Repair the section name and retry.

GCLINP37E Duplicate qualified section  
Duplicate unqualified section found
Explanation: Two section names match exactly, they are either
   1. both unqualified
   2. both specify the same Sysplex and system names.
Section names must be unique.
User response: Repair the INI and resubmit.

User response: Repair the INI and resubmit.

GCLINP38E Trailing period on section statement
Explanation: A section statement has one of the following formats:
   • :sectionname.sysplexname.systemname
   • :sectionname.sysplexname
   • :sectionname..systemname
User response: Repair the section name and retry.

GCLINP39E INI# columns 73-80 are not blank, line
nnnn
Explanation: Historically, placing text in columns 73-80 makes debugging errors in the INI difficult.
User response: Repair the section name and retry.

GCLINP39W INI columns 73-80 are not blank, line
nnnn
Explanation: Historically, placing text in columns 73-80 makes debugging errors in the INI difficult.
User response: Repair the section name and retry.

GCLINP40E Right of INI#’s section not blank
Explanation: INI#’s section statement must be all blanks after section name to facilitate customers entering sysplex/system names.
User response: Repair the section name and retry.

GCLINP41I Nothing copied
Explanation: The customer INI had no special sections to copy
User response: None.

GCLINP42I Nothing delete
Explanation: No INI parameters were deleted
User response: None.

GCLINP50I INPUT: input line
Explanation: A previously noted error occurred on the line shown.
User response: See prior error message.

GCLINP51E Token non-NOTES before 1st section
Explanation: NOTES is the only token allowed before the first section statement.
User response: Repair the INI and resubmit.
GCLINP52E  Token NOTES found in INI#

Explanation: NOTES is only allowed in the customer INI.

User response: Repair the INI and resubmit.

GCLINS03E  PASSED TOKEN LENGTH INVALID
length

Explanation: An unrecoverable error occurred during processing.

User response: Contact IBM Software Support.

GCLINS04E  INIGET 3RD PARM, NO VL BIT

Explanation: An unrecoverable error occurred during processing.

User response: Contact IBM Software Support.

GCLINS05E  INI TOKEN REC SHORTER THAN
KEY SECTION/TOKEN section/token

Explanation: An unrecoverable error occurred during processing.

User response: Contact IBM Software Support.

GCLINS06E  TOKEN VALUE LONGER THAN
RECEIVING PARM SECTION/TOKEN token TOKEN VALUE value

Explanation: An unrecoverable error occurred during processing.

User response: Contact IBM Software Support.

GCLINS07E  BAD REG 2 PTR TO VECTOR TABLE

Explanation: An unrecoverable error occurred during processing.

User response: Contact IBM Software Support.

GCLINV00I  GCL01INV starting
(REV=nn,PMR=xxxxxxx,fixdate=xxxxxxxx)

Explanation: Message shows current version of the module.

User response: None.

GCLINV02E  Error parsing PARMLIB INI# member on line n | Error parsing PARMLIB INI member on line n

Explanation: An error was found in when parsing an INI member.

User response: Look for subsequent messages repair the PARMLIB(xxxINI) or PARMLIB(xxxINI#) member as indicated.

GCLINV02E  Umatched */ | Continued statement at end of file

Explanation: An end-comment (*/) was found for which there was no begin-comment (/*).
<table>
<thead>
<tr>
<th>GCLINV05E</th>
<th>GCLINV33E</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>User response:</strong></td>
<td>Remove the end-comment or insert a begin-comment in the appropriate location.</td>
</tr>
<tr>
<td><strong>GCLINV05E  Token name longer than 72</strong></td>
<td><strong>Explanation:</strong> A Token name longer than 72 bytes was found on the specified line.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Reduce the length of the token to 72 or less.</td>
</tr>
<tr>
<td><strong>GCLINV06E  Expected = after token name</strong></td>
<td><strong>Explanation:</strong> An equal sign (=) was not found after the Token name.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Insert an equal sign (=) between the Token and its value.</td>
</tr>
<tr>
<td><strong>GCLINV07E  Expected = after token name</strong></td>
<td><strong>Explanation:</strong> An equal sign (=) was not found after the Token name.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Insert an equal sign (=) between the Token and its value.</td>
</tr>
<tr>
<td><strong>GCLINV08E  Found non-NOTES token before 1st section name</strong></td>
<td><strong>Explanation:</strong> A Token was found before any Section was specified. Only the 'Notes' Token is allowed before a section name. Reminder, Notes is provided for the customer and no product code can access the Notes value.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Ensure that the first non-comment line and non-Notes token is a Section name</td>
</tr>
<tr>
<td><strong>GCLINV09E  Duplicate Section/Token found</strong></td>
<td><strong>Explanation:</strong> A token can not be defined twice for the same section.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Remove the redundant token and retry.</td>
</tr>
<tr>
<td><strong>GCLINV10E  file function FAIL, RC = nnnnnnnn</strong></td>
<td><strong>Explanation:</strong> An unrecoverable error occurred during processing.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Contact IBM Software Support.</td>
</tr>
<tr>
<td><strong>GCLINV12E  EXPECTED PARM VALUE OR RECORD, FOUND function</strong></td>
<td><strong>Explanation:</strong> An unrecoverable error occurred during processing.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Contact IBM Software Support.</td>
</tr>
<tr>
<td><strong>GCLINV14E  Error parsing MSCINI</strong></td>
<td><strong>Explanation:</strong> MSCINI INIMERGE failed to parse the MSCINI input because it could not find the INIMERGE_SECTION values.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Use the INI# member distributed by IBM Software Support and retry. If you need help with this contact IBM Software Support.</td>
</tr>
<tr>
<td><strong>GCLINV15W  Columns 73-80 not blank on line</strong></td>
<td><strong>Explanation:</strong> INI parser detected characters in columns 73-80. Technical Support has found that many INI errors occur because the person editing the INI doesn’t see text in columns 73-80.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Edit the PARMLIB INI member so that columns 73-80 are blank.</td>
</tr>
<tr>
<td><strong>GCLINV21E  Sysplex name more than 8 characters</strong></td>
<td><strong>Explanation:</strong> The sysplex value on an INI section statement is invalid because it is too long.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Repair the section name and retry.</td>
</tr>
<tr>
<td><strong>GCLINV22E  System name more than 8 characters</strong></td>
<td><strong>Explanation:</strong> The system value on an INI section statement is invalid because it is too long.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Repair the section name and retry.</td>
</tr>
<tr>
<td><strong>GCLINV31E  Section name longer that 72</strong></td>
<td><strong>Explanation:</strong> The section name is limited in size.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Repair the section name and retry.</td>
</tr>
<tr>
<td><strong>GCLINV32E  Invalid section name</strong></td>
<td><strong>Explanation:</strong> The section name can have alphanumeric characters in addition to a period, dash, underscore or slash.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Repair the section name and retry.</td>
</tr>
<tr>
<td><strong>GCLINV33E  Period(.) found in INI# section</strong></td>
<td><strong>Explanation:</strong> A period character in the section name is valid in a customer INI for denoting sysplex and system names but is not valid in the distributed INI#.</td>
</tr>
<tr>
<td><strong>User response:</strong></td>
<td>Repair the section name and retry.</td>
</tr>
</tbody>
</table>
GCLINV34E Qualified INIMERGE_VALUES in INI
Qualified PRODUCT_INFO in INI

Explanation: These sections can not qualified by sysplex and/or system name.

User response: Repair the section name and retry.

GCLINV35E Two INIMERGE_VALUES sections found

Explanation: The INIMERGE_VALUES may only appear once in the INI.

User response: Repair the section name and retry.

GCLINV36E Qualified section after generic

Explanation: A section was found with sysplex and/or system qualifications but it follows the same section without such qualification. This section can never be accessed and is invalid.

User response: Repair the section name and retry.

GCLINV37E Duplicate qualified section | Duplicate unqualified section found

Explanation: Two section names match exactly, then are either
1. both unqualified
2. both specify the same Sysplex and system names.

Section names must be unique.

User response: Repair the section name and retry.

GCLINV38E Trailing period on section statement

Explanation: A section statement has one of the following formats:
:sectionname.sysplexname.systemname
:sectionname.sysplexname
:sectionname..systemname

User response: Repair the section name and retry.

GCLINV39E INI# columns 73-80 are not blank, line

Explanation: Historically, placing text in columns 73-80 makes debugging errors in the INI difficult.

User response: Repair the section name and retry.

GCLINV39W INI columns 73-80 are not blank, line

Explanation: Historically, placing text in columns 73-80 makes debugging errors in the INI difficult.

User response: Repair the section name and retry.

GCLINV40E Right of INI#’s section not blank

Explanation: INI#’s section statement must be all blanks after section name to facilitate customers entering sysplex/system names.

User response: Repair the section name and retry.

GCLINV41I Nothing copied

Explanation: The customer INI had no special sections to copy

User response: None.

GCLINV42I Nothing delete

Explanation: No INI parameters were deleted

User response: None.

GCLINV50I INPUT: input line

Explanation: A previously noted error occurred on the line shown.

User response: See prior error message.

GCLINV51E Token non-NOTES before 1st section

Explanation: NOTES is the only token allowed before the first section statement.

User response: Repair the INI and resubmit.

GCLINV52E Token NOTES found in INI#

Explanation: NOTES is only allowed in the customer INI.

User response: Repair the INI and resubmit.

GCLINV53E Error parsing MSCINI (INI#), see JOB Log

Explanation: INIMERGE used the INI parser to validate the INI but the INI parser was unsuccessful.

User response: For INI#, Contact IBM Software Support

User response: For the customer INI, repair the INI based on the messages in the JOB log and resubmit.

GCLINV71E Section in INI# but not INI:

Explanation: INI view can find section in INI that was found in the INI#.

User response: Repair the INI and resubmit.
GCLINV72I  All INI# sections found in INI
Explanation: All of the INI# sections were found in the INI.
User response: None.

GCLINV73E  Error in SYSPARM
Explanation: GCL01INV SYSPARM is incorrect. Valid forms are:
  SYSPARM= for current SYSplex and SYS name
  SYSPARM= ' ' for current SYSplex and SYS name
  SYSPARM= 'plexname,sysname'
User response: Correct the SYSPARM on your execute statement and resubmit.

GCLIRL08E  UNABLE TO LOAD PROGRAM:  
program name
Explanation: The indicated program name was not found. Processing terminates.
User response: Check that the job's //STEPLIB library is correct. If unable to resolve the problem, contact IBM Software Support.

GCLLAD02E  LOAD LIBRARY request FAILED,  
DD=ddname, RC=nnnn
Explanation: A request to OPEN or CLOSE a library failed. Processing terminates.
User response: Review the job log for other messages indicating why the OPEN or CLOSE failed. If unable to resolve the problem, contact IBM Software Support.

GCLMBK08E  UNABLE TO LOAD PROGRAM:  
program name
Explanation: The indicated program name was not found. Processing terminates.
User response: Check that the job's //STEPLIB library is correct. If unable to resolve the problem, contact IBM Software Support.

GCLMDA04E  ALLOCATION FAILED FOR  
DSNAME: dname
Explanation: A problem occurred when attempting to allocate a data set. Processing terminates.
User response: Review the job log for other messages indicating why the allocation failed.

GCLMDA05E  requesttype FAILED FOR DDNAME:  
ddname
Explanation: A problem occurred when attempting a dynamic allocation request for the specified DD. If the message is a warning, processing continues, else processing will terminate.
User response: Report the problem to IBM Software Support. Have the output from the job which encountered this problem available.

GCLMDA05W  requesttype FAILED FOR DDNAME:  
ddname
Explanation: A problem occurred when attempting a dynamic allocation request for the specified DD. If the message is a warning, processing continues, else processing will terminate.
User response: Report the problem to IBM Software Support. Have the output from the job which encountered this problem available.

GCLMDA06E  ASSEMBLY FAILED, RC=xxxx
IEBUPDTE FAILED, RC=xxxx
LINK-EDIT FAILED, RC=xxxx
Explanation: A utility returned a non-zero return code. Processing terminates.
User response: Review the SYSPRINT output to determine the reason for the utility failure. If the SYSPRINT output is not available, the job can be rerun with adding a DD in the JCL to generate the output. If ASSEMBLY failed, add an ASMPRINT DD. If IEBUPDTE failed, add an IEBPRINT DD. If LINK-EDIT failed, add a LNKPRINT DD. If the problem can not be corrected by the user, contact IBM Software Support with the job output.

GCLMDA09E  ERROR ACCESSING ddbname FILE;  
LOC=lllll
Explanation: An error occurred accessing the specified file. Processing terminates.
User response: View joblog for other messages. If unable to resolve problem, contact IBM Software Support. Have available the listing that contains these messages.

GCLMDA10E  call FAILED FOR DD=ddname,  
RC=nnnn
Explanation: A error occurred when attempting to access a data set. Processing terminates.
User response: Review the system log for any error messages. If unable to resolve the problem, contact IBM Software Support.
GCLMER00I  GCLMER21E

GCLMER00I  GCL01MER starting
(REV=nn,PMR=xxxxxx,fixdate=xxxxxx')

Explanation:  Message shows current version of the module.
User response:  None.

GCLMER01E  Error parsing PARMLIB INI# member
on line n | Error parsing PARMLIB INI member on line n

Explanation:  An error was found in when parsing an INI member.
User response:  Look for subsequent messages repair the PARMLIB(xxxINI) or PARMLIB(xxxINI#) member as indicated.

GCLMER02E  Umatched */ | Continued statement at end of file

Explanation:  An end-comment (*) was found for which there was no begin-comment (/*).
User response:  Remove the end-comment or insert a begin-comment in the appropriate location.

GCLMER05E  Token name longer than 72

Explanation:  A Token name longer than 72 bytes was found on the specified line.
User response:  Reduce the length of the token to 72 or less.

GCLMER06E  Expected = after token name

Explanation:  An equal sign (=) was not found after the Token name.
User response:  Insert an equal sign (=) between the Token and its value.

GCLMER07E  Expected = after token name

Explanation:  An equal sign (=) was not found after the Token name.
User response:  Insert an equal sign (=) between the Token and its value.

GCLMER08E  Found non-NOTES token before 1st section name

Explanation:  A Token was found before any Section was specified. Only the 'Notes' Token is allowed before a section name. Reminder, Notes is provided for the customer and no product code can access the Notes value.
User response:  Ensure that the first non-comment line and non-Notes token is a Section name.

GCLMER09E  Duplicate Section/Token found | Section | Token

Explanation:  A token can not be defined twice for the same section.
User response:  Remove the redundant token and retry.

GCLMER10E  file function FAIL, RC = nnnnnnn

Explanation:  An unrecoverable error occurred during processing.
User response:  Contact IBM Software Support.

GCLMER11E  Open failure, DD ddname | DD INI OPEN FAILURE | DD SYSPRINT open failure | DD UPDATE open failure | DD TRACEDD open failure

Explanation:  An unrecoverable error occurred during processing.
User response:  Contact IBM Software Support.

GCLMER12E  EXPECTED PARM VALUE OR RECORD, FOUND function

Explanation:  An unrecoverable error occurred during processing.
User response:  Contact IBM Software Support.

GCLMER14E  Error parsing MSCINI

Explanation:  MSCINI INIMERGE failed to parse the MSCINI input because it could not find the INIMERGE_SECTION values.
User response:  Use the INI# member distributed by IBM Software Support and retry. If you need help with contact IBM Software Support.

GCLMER15W  Columns 73-80 not blank on line

Explanation:  INI parser detected characters in columns 73-80. Technical Support has found that many INI errors occur because the person editing the INI doesn't see text in columns 73-80.
User response:  Edit the PARMLIB INI member so that columns 73-80 are blank.

GCLMER21E  Sysplex name more than 8 characters

Explanation:  The sysplex value on an INI section statement is invalid because it is too long.
User response:  Repair the section name and retry.
GCLMER22E  System name more than 8 characters
Explanation: The system value on an INI section statement is invalid because it is too long.
User response: Repair the section name and retry.

GCLMER31E  Section name longer that 72
Explanation: The section name is limited in size.
User response: Repair the section name and retry.

GCLMER32E  Invalid section name
Explanation: The section name can have alphanumeric characters in addition to a period, dash, underscore or slash.
User response: Repair the section name and retry.

GCLMER33E  Period(".") found in INI# section
Explanation: A period character in the section name is valid in a customer INI for denoting sysplex and system names but is not valid in the distributed INI#.
User response: Repair the section name and retry.

GCLMER34E  Qualified INIMERGE_VALUES in INI
| Qualified PRODUCT_INFO in INI
Explanation: These sections can not qualified by sysplex and/or system name.
User response: Repair the section name and retry.

GCLMER35E  Two INIMERGE_VALUES sections found
Explanation: The INIMERGE_VALUES may only appear once in the INI.
User response: Repair the section name and retry.

GCLMER36E  Qualified section after generic
Explanation: A section was found with sysplex and/or system qualifications but it follows the same section without such qualification. This section can never be accessed and is invalid.
User response: Repair the section name and retry.

GCLMER37E  Duplicate qualified section | Duplicate unqualified section found
Explanation: Two section names match exactly, then are either
1. both unqualified
2. both specify the same Sysplex and system names.
Section names must be unique.
User response: See prior error message.

GCLMER38E  Trailing period on section statement
Explanation: A section statement has one of the following formats
[sectionname.sysplexname.systemname
[sectionname.sysplexname
[sectionname..systemname
User response: Repair the section name and retry.

GCLMER39E  INI# columns 73-80 are not blank, line nnnn
Explanation: Historically, placing text in columns 73-80 makes debugging errors in the INI difficult.
User response: Repair the section name and retry.

GCLMER39W  INI# columns 73-80 are not blank, line nnnn
Explanation: Historically, placing text in columns 73-80 makes debugging errors in the INI difficult.
User response: Repair the section name and retry.

GCLMER40E  Right of INI#’s section not blank
Explanation: INI#’s section statement must be all blanks after section name to facilitate customers entering sysplex/system names.
User response: Repair the section name and retry.

GCLMER41I  Nothing copied
Explanation: The customer INI had no special sections to copy
User response: None.

GCLMER42I  Nothing delete
Explanation: No INI parameters were deleted
User response: None.

GCLMER50I  INPUT: input line
Explanation: A previously noted error occurred on the line shown.
User response: See prior error message.

GCLMER51E  Token non-NOTES before 1st section
Explanation: NOTES is the only token allowed before the first section statement.
User response: Repair the INI and resubmit.
GCLMER52E  Token NOTES found in INI#
Explanation:  NOTES is only allowed in the customer INI.
User response:  Repair the INI and resubmit.

GCLMER53E  Error parsing MSCINI (INI#), see JOB Log | Error parsing the customer INI, see JOB Log
Explanation:  INIMERGE used the INI parser to validate the INI but the INI parser was unsuccessful.
User response:  For INI#, Contact IBM Software Support
User response:  For the customer INI, repair the INI based on the messages in the JOB log and resubmit.

GCLMER71E  Section in INI# but not INI:
Explanation:  INI view can find section in INI that was found in the INI#.
User response:  Repair the INI and resubmit.

GCLMER72I  All INI# sections found in INI
Explanation:  All of the INI# sections were found in the INI.
User response:  None.

GCLMOD03E  Unable to open SYSUT1
Explanation:  SYSUT1 is a required DD statement.
User response:  Correct JCL or execution parameter.

GCLMOD04E  A duplicate PMR found module
Explanation:  The same PMR number was used twice in the same module.
User response:  Informational only.

GCLMOD05E  No PMR data available for 'SYSUT1 xxxxxxx' | No PMR data available for 'SYSUT2 xxxxxxx'
Explanation:  The load module has an EHDR, not MSCHDR/MSCPMR macros.
User response:  Informational only

GCLMOD06E  No Header data available for 'SYSUT1 xxxxxxx' | No Header data available for 'SYSUT2 xxxxxxx'
Explanation:  The load module does not have MSCHDR/MSCPMR or EHDR macros.
User response:  Informational only

GCLMOD30E  FATAL ERROR IN GCL01VV1 TABLE(table) FUNC(func) RC(rc)
Explanation:  An error occurred using an GCL01VV1 table.
User response:  Report this message to IBM Software Support.

GCLMOD91E  Error READ_PDSE ERROR - terminating
Explanation:  An error occurred reading a PDSE (not a PDS)
User response:  Report this message to IBM Software Support.

GCLMOD92E  Error READ_PDS ERROR - terminating
Explanation:  An error occurred reading a PDS (not a PDSE)
User response:  Report this message to IBM Software Support.

GCLPP100I  text
Explanation:  Message produced when command input is read.
User response:  None.
<table>
<thead>
<tr>
<th>Code</th>
<th>Message</th>
<th>Explanation</th>
<th>User response</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCLPP101E</td>
<td>Input file not open</td>
<td>Message produced when command input is parsed.</td>
<td>Contact IBM Software Support.</td>
</tr>
<tr>
<td>GCLPP102E</td>
<td>Input file LRECL invalid</td>
<td>Message produced when command input is parsed. This error typically occurs if SYSIN DD statement refers to a data set with LRECL other than 80.</td>
<td>Correct the command input and resubmit.</td>
</tr>
<tr>
<td>GCLPP103E</td>
<td>Blank record invalid here</td>
<td>Message produced when command input is parsed.</td>
<td>Correct the command input and resubmit.</td>
</tr>
<tr>
<td>GCLPP104E</td>
<td>Expected continuation not found</td>
<td>Message produced when command input is parsed.</td>
<td>Correct the command input and resubmit.</td>
</tr>
<tr>
<td>GCLPP105W</td>
<td>Input flushed</td>
<td>Message produced when command input is parsed and a prior error has been detected.</td>
<td>Review the prior GCLPSE error messages. Correct the command input and resubmit.</td>
</tr>
<tr>
<td>GCLP106E</td>
<td>Unmatched parenthesis</td>
<td>Message produced when command input is parsed.</td>
<td>Correct the command input and resubmit.</td>
</tr>
<tr>
<td>GCLPP107E</td>
<td>Paren nesting error</td>
<td>Message produced when command input is parsed.</td>
<td>Correct the command input and resubmit.</td>
</tr>
<tr>
<td>GCLPP108E</td>
<td>Line buffer full</td>
<td>Message produced when command input is parsed.</td>
<td>Contact IBM Software Support.</td>
</tr>
<tr>
<td>GCLP109E</td>
<td>String delimiters not balanced</td>
<td>Message produced when command input is parsed. Second quotation character not found.</td>
<td>Contact IBM Software Support.</td>
</tr>
<tr>
<td>GCLP110E</td>
<td>Input record buffer length invalid</td>
<td>Message produced when command input is parsed.</td>
<td>Contact IBM Software Support.</td>
</tr>
<tr>
<td>GCLPSE20I</td>
<td>Command ended</td>
<td>Message produced when command input is parsed.</td>
<td>Review the prior GCLPSE error messages. Correct the command input and resubmit.</td>
</tr>
<tr>
<td>GCLPSE21E</td>
<td>Keyword not found : text</td>
<td>Message produced when command input is parsed. The displayed keyword is not valid for this command or parent keyword.</td>
<td>Review the prior GCLPSE error messages. Correct the command input and resubmit.</td>
</tr>
<tr>
<td>GCLPSE22E</td>
<td>Module not found: module-name</td>
<td>Message produced when command input is parsed.</td>
<td>Contact IBM Software Support.</td>
</tr>
<tr>
<td>GCLPSE23E</td>
<td>Operand not supported for: text</td>
<td>Message produced when command input is parsed. E displayed keyword is not implemented.</td>
<td>Correct the command input and resubmit.</td>
</tr>
<tr>
<td>GCLPSE24E</td>
<td>Operand truncated for:</td>
<td>Message produced when command input is parsed. The value specified for the displayed keyword is longer than the keyword accepts.</td>
<td>Correct the command input and resubmit.</td>
</tr>
<tr>
<td>GCLPSE25E</td>
<td>Empty or missing parmlist</td>
<td>Message produced when command input is parsed and a prior error has been detected.</td>
<td>Contact IBM Software Support.</td>
</tr>
</tbody>
</table>
GCLPSE26W Command abandoned
Explanation: Message produced when command input is parsed and a prior error has been detected.
User response: Review the prior GCLPSE error messages. Correct the command input and resubmit.

GCLPSE28E Operand required for keyword: keyword
Explanation: Message produced when command input is parsed. The displayed keyword requires a value.
User response: Contact IBM Software Support.

GCLPSE29E Conflicting keywords specified with keyword:
Explanation: Message produced when command input is parsed. Two mutually exclusive keywords have been specified.
User response: Correct the command input and resubmit.

GCLPSE30E Multiple use of keyword not allowed
Explanation: Message produced when command input is parsed. Two mutually exclusive keywords have been specified.
User response: Correct the command input and resubmit.

GCLRIR04E ALLOCATION FAILED FOR DSN: dname
Explanation: A problem occurred when attempting to allocate a data set. Processing terminates.
User response: Review the job log for other messages indicating why the allocation failed.

GCLRIR08E OPEN FAILED FOR DSN: dname
Explanation: A problem occurred when attempting to OPEN a member of a PDS. Processing terminates.
User response: Review the job log for other messages indicating why the allocation failed.

GCLRON02E LOAD LIBRARY request FAILED, DD=dname, RC=nnnn
Explanation: A request to OPEN or CLOSE a library failed. Processing terminates.
User response: Review the job log for other messages indicating why the OPEN or CLOSE failed. If unable to resolve the problem, contact IBM Software Support.

GCLRON05E requestType FAILED FOR DDNAME: dname - reason
Explanation: A problem occurred when attempting a dynamic allocation or access request for the specified DD. If the message is a warning, processing continues, else processing will terminate.
User response: Report the problem to IBM Software Support. Have the output from the job which encountered this problem available.

GCLRON10E call FAILED FOR DD=dname, RC=nnnn
Explanation: A error occurred when attempting to access a data set. Processing terminates.
User response: Review the system log for any error messages. If unable to resolve the problem, contact IBM Software Support.

GCLRON11E VSAM call ERROR, DD=dname, DSN=dname, RC=nnnn, RSN=nnnn
Explanation: A VSAM request failed for the associated DD. Processing terminates.
User response: Review the system log for any error messages. If unable to resolve the problem, contact IBM Software Support.

GCLRX101E RXNEWTGT dname READ FAILED, RC nn
Explanation: The Rexx program was unable to read a required file.
User response: Add the appropriate DD statement to the execution JCL.

GCLRX102E RXNEWTGT ddname READ FAILED, RC IS nn
Explanation: There is an unequal number of records in the GCLIN file and the NUCIN file.
User response: Verify that the input files correspond to the correct runs of the IMS Cloning Tool product.
GCLRX103I RXNEWTGT ddname HEADER IS header information
Explanation: Informational message.
User response: None.

GCLRX104I RXNEWTGT ddname INPUT FILE HAS nnn VOLUME PAIRS
Explanation: Informational message.
User response: None.

GCLRX105E RXNEWTGT NEWTGT OPEN FAILED, RC IS nn
Explanation: The Rexx program was unable to open a required file.
User response: Add the appropriate DD statement to the execution JCL.

GCLRX106E RXNEWTGT NEWTGT WRITE FAILED, RC IS nn
Explanation: The Rexx program was unable to add a record to the file.
User response: Check that the DCB attributes for the output file are correct. Check that there is sufficient space given to the output file.

GCLRX107E RXNEWTGT NO MATCH FOUND FOR GCLIN ENTRY source target
Explanation: No match was found for the indicated GCLIN source and target volume serials in the NUCIN input file.
User response: Verify that the input files correspond to the correct runs of the IMS Cloning Tool product.

GCLRX108E RXNEWTGT VERSION MISMATCH:
GCLIN: version NUCIN: version
Explanation: The version entries in the two files do not match.
User response: Verify that the input files correspond to the correct runs of the IMS Cloning Tool product.

GCLRX109E RXNEWTGT VERSION IS INCORRECT, version
Explanation: The version entry in the input files is not supported.
User response: Verify that the input files correspond to the correct runs of the IMS Cloning Tool product.

GCLRX110E RXNEWTGT GCLIN PRODUCT IS INCORRECT, product
Explanation: The product entry in the GCLIN input file is incorrect.
User response: Verify that the GCLIN input file has not been modified and that it was created by a IMS Cloning Tool COPY command that had a USERCATALOGS keyword.

GCLRX111E RXNEWTGT NUCIN PRODUCT IS INCORRECT, product
Explanation: The product entry in the NUCIN input file is incorrect.
User response: Verify that the NUCIN input file has not been modified and that it was created by a IMS Cloning Tool COPY command that had the NOUSERCATALOGS keyword.

GCLRX112E RXNEWTGT NO INPUT READ
Explanation: No records were found in the input files.
User response: Verify that the input files correspond to the correct runs of the IMS Cloning Tool product and that the DD statements have not been dummied.

GCLSIN10E call FAILED FOR DD=ddname, RC=nnnn
Explanation: A error occurred when attempting to access a data set. Processing terminates.
User response: Review the system log for any error messages. If unable to resolve the problem, contact IBM Software Support.

GCLSIN11E VSAM call ERROR, DD=ddname, DSN=dsname, RC=nnnn, RSN=nnnn
Explanation: A VSAM request failed for the associated DD. Processing terminates.
User response: Review the system log for any error messages. If unable to resolve the problem, contact IBM Software Support.

GCLSOU10E call FAILED FOR DD=ddname, RC=nnnn
Explanation: A error occurred when attempting to access a data set. Processing terminates.
User response: Review the system log for any error messages. If unable to resolve the problem, contact IBM Software Support.
GCLSOU11E • GCLVE206E

GCLSOU11E VSAM call ERROR, DD=ddname, DSN=dsname, RC=nnnn, RSN=nnnn
Explanation: A VSAM request failed for the associated DD. Processing terminates.
User response: Review the system log for any error messages. If unable to resolve the problem, contact IBM Software Support.

GCLSUP10E call FAILED FOR DD=ddname, RC=nnnn
Explanation: A error occurred when attempting to access a data set. Processing terminates.
User response: Review the system log for any error messages. If unable to resolve the problem, contact IBM Software Support.

GCLSUP11E VSAM call ERROR, DD=ddname, DSN=dsname, RC=nnnn, RSN=nnnn
Explanation: A VSAM request failed for the associated DD. Processing terminates.
User response: Review the system log for any error messages. If unable to resolve the problem, contact IBM Software Support.

GCLVE201E NO INIT FUNCTION RECEIVED.
Explanation: This is an internal error.
User response: Contact IBM Software Support.

GCLVE202E INIT FUNCTION RECEIVED WITHOUT INTERVENING TERM
Explanation: This is an internal error.
User response: Contact IBM Software Support.

GCLVE203E UNKNOWN FUNCTION: xxxx
Explanation: This is an internal error.
User response: Contact IBM Software Support.

GCLVE204E ERROR CALLING GCL01VV1 xxxx r15=rc r0=rea id=nn
Explanation: This is an internal error.
User response: Contact IBM Software Support.

GCLVE205E MLA VALUE FOUND GREATER THAN 4
Explanation: This is an internal error.
User response: Contact IBM Software Support.

GCLVE206E MASK FAILED EVALUATION CHECK: xxxx
Explanation: Mask xxxx is invalid.
User response: Fix the error and retry the function.

GCLVE207E CSI FAILED WHEN CALLING FOR MASTER CATALOG NAME
Explanation: This is an internal error.
User response: Contact IBM Software Support.

GCLVE208E MASK FAILED EVALUATION CHECK: xxxx - yyyyy
Explanation: Mask xxxx is invalid for reason yyyyy
User response: Fix the error and retry the function.

GCLVE209E UN-ALLOCATION FAILED FOR: cccc
Explanation: Un-allocation failed for catalog cccc.
User response: Determine the reason for the allocation failure and retry.

GCLVE210E ALLOCATION FAILED FOR: cccc
Explanation: Allocation failed for catalog cccc.
User response: Determine the reason for the allocation failure and retry.

GCLVE211E UCBLOOK ERROR FOR: VVVV - RETURN CODE:RC REASON CODE:RSN
Explanation: This is an internal error.
User response: Contact IBM Software Support.

GCLVE212E VOLUME NOT MOUNTED: vvvv
Explanation: A catalog entry specified that a data set was cataloged to a volume, vvvv, that was not mounted for dsn nnn on device type ttt.
User response: Mount the volume, uncatalog the data set, or respecify the selection masks. Retry the function.

GCLVE213E IOSCAPU ERROR FOR: VVVV - RETURN CODE:RC REASON CODE:RSN
Explanation: This is an internal error.
User response: Contact IBM Software Support.
GCLVE214E  nnnn : VOLSER=vvvv
RC=rrr, REAS=sss, DESC=zzzz

Explanation: An error occurred when trying to access the VVDS on volume vvvv for data set nnnn.
  • rrr = Returncode
  • sss = Reason code
  • zzzz = Description when available.
User response: If unable to determine the cause of the error or to fix it, contact IBM Software Support for assistance.

GCLVE215E  UCBPIN ERROR FOR: VVVV - RETURN CODE:RC REASON CODE:RSN

Explanation: This is an internal error.
User response: Contact IBM Software Support.


Explanation: This is an internal error.
User response: Contact IBM Software Support.

GCLVE217E  ERROR OBTAINING VTOC DATA FROM vvvv ; nnnn

Explanation: An error occurred when trying to access the VTOC on volume vvvv for data set nnnn.
User response: If unable to determine the cause of the error or to fix it, contact IBM Software Support for assistance.

GCLVE218E  HSM MCVT NOT FOUND

Explanation: An error occurred when trying to access the HSM control blocks. The most probable cause is HSM has not been started.
User response: If unable to determine the cause of the error or to fix it, contact IBM Software Support for assistance.

GCLVE219E  HSM DATA EXTRACT ENDED WITH ERRORS

Explanation: An error occurred when trying to access the HSM control blocks. The most probable cause is HSM has not been started.
User response: If unable to determine the cause of the error or to fix it, contact IBM Software Support for assistance.

GCLVE220E  MIGRATED DATASET NOT FOUND IN MCDS: nnnn

Explanation: The catalog indicated that data set nnnn was migrated, but no entry was found in the HSM MCDS.
User response: If unable to determine the cause of the error or to fix it, contact IBM Software Support for assistance.

GCLVE221W  NO CATALOG ENTRIES FOUND FOR MASK(S)

Explanation: No catalog entries were found for any of the masks passed to GCL01VE2.
User response: If this result was not expected, try to determine the reason for the problem and retry the function. If help is needed, contact IBM Software Support for assistance.

GCLVE222E  ASSOCIATED ENTRY NOT FOUND IN CATALOG - nnnn

Explanation: A non-VSAM alias entry with an association of nnnn. nnnn was not found in the catalog. The most probable cause is an orphaned catalog entry.
User response: Determine the reason for and fix the problem. Retry the function. If help is needed, contact IBM Software Support for assistance.

GCLVE223E  UNEXPECTED CATALOG RECORD CONSTRUCT - ASSOCIATION CELL NOT WHERE EXPECTED

Explanation: Catalog entry for entry mentioned above is invalid.
User response: Determine the reason for and fix the problem. Retry the function. If help is needed, contact IBM Software Support for assistance.

GCLVE224E  TYPE "J" RECORD WITH NO MATCHING "B" RECORD: nnnn

Explanation: Catalog entry nnnn is an extension record for a catalog record that does not exist.
User response: Determine the reason for and fix the problem. Retry the function. If help is needed, contact IBM Software Support for assistance.

GCLVE225E  ERROR READING SELF DESCRIBING RECORD FROM CATALOG: nnnn

Explanation: This is an internal error.
User response: Contact IBM Software Support.
<table>
<thead>
<tr>
<th>Error Code</th>
<th>Message</th>
<th>Explanation</th>
<th>User Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCLVE226E</td>
<td>RECEIVED A &quot;GET&quot; REQUEST BEFORE RECEIVING A MASK</td>
<td>This is an internal error.</td>
<td>Contact IBM Software Support.</td>
</tr>
<tr>
<td>GCLVE227E</td>
<td>INPUT CONTROL BLOCK IS NOT COMPATIBLE</td>
<td>This is an internal error.</td>
<td>Contact IBM Software Support.</td>
</tr>
<tr>
<td>GCLVE229E</td>
<td>HSM IS NOT ACTIVE - UNABLE TO RETRIEVE REQUESTED DATA</td>
<td>HSM must be active for MCDS data to be retrieved.</td>
<td>Start HSM and retry the function.</td>
</tr>
<tr>
<td>GCLVE230I</td>
<td>ALLOCATION FAILED FOR: nnnn - WILL NOT BE USED FOR SEARCH</td>
<td>Unable to allocate catalog nnnn. No entries that may reside in this catalog will be retrieved.</td>
<td>Informational only. Processing continues.</td>
</tr>
<tr>
<td>GCLVE231E</td>
<td>VOLUME NOT MOUNTED: vvvv DSN=nnnn DEVTYPE=ttt</td>
<td>A catalog entry specified that a data set was cataloged to a volume, vvvv, that was not mounted for dsn nnnn on device type ttt.</td>
<td>Mount the volume, uncatalog the data set, or respecify the selection masks. Retry the function.</td>
</tr>
<tr>
<td>GCLVE232E</td>
<td>NO MCDS DATASET WITH VALID KEY-RANGE FOUND</td>
<td>An attempt was made to find a dsn in the HSM MCDS but no MCDS found in the HSM address space had a key-range that would accommodate the dsn.</td>
<td>Processing continues. No mcds data will be included for this data set.</td>
</tr>
<tr>
<td>GCLVE233E</td>
<td>NO MCDS DSN(S) FOUND IN HSM ADDRESS SPACE</td>
<td>An attempt was made to find a the data set name(s) of the MCDS(s) allocated to HSM. The attempt failed.</td>
<td>Processing continues. No mcds data will be included for this dataset.</td>
</tr>
<tr>
<td>GCLVE234W</td>
<td>ERROR CALLING GCL01HSM RC=RC</td>
<td>This is an internal error.</td>
<td>Processing continues. No MCDS data will be included. If the reason for the failure cannot be determined, contact IBM Software Support.</td>
</tr>
<tr>
<td>GCLVE235E</td>
<td>nnnn : VOLSER=vvvvvv - VVDS NOT OPEN</td>
<td>A previous open failed for the VVDS on volume vvvvvv failed.</td>
<td>Processing continues. No VVDS related data is returned for data set nnnn.</td>
</tr>
<tr>
<td>GCLVE236W</td>
<td>Invalid DSN found : xxxxxxxxxxxxxxxxxxxxx</td>
<td>The catalog contained an invalid data set name. The first GCLVE236W shows the data set name in character format. The next three GCLVE236W show the name in hex.</td>
<td>Fix the catalog and retry the function.</td>
</tr>
<tr>
<td>GCLVE237W</td>
<td>OPEN FAILED FOR: nnnn - WILL NOT BE USED FOR SEARCH</td>
<td>Unable to open catalog nnnn. No entries that may reside in this catalog will be retrieved.</td>
<td>Informational only. Processing continues.</td>
</tr>
<tr>
<td>GCLVE238E</td>
<td>CLUSTER NOT FOUND FOR TRUENAME IN CATALOG</td>
<td>An error has been detected in your catalog. A VSAM true name record was found without an associated cluster entry.</td>
<td>Informational only. Processing continues. Evaluate catalog entries for the identified data set.</td>
</tr>
<tr>
<td>GCLVE239I</td>
<td>RETRYING ERROR OBTAINING ??????? FOR dsn - ucat</td>
<td>An error occurred when trying to access the VTOC, VVDS, or MCB information for a data set. This message will occur the catalog is incorrect. This message may occur if the data set is being migrated so that the catalog is temporarily out of date.</td>
<td>No action required for this message unless subsequent errors GCLVE217E, GCLCA120E, GCLCA114E, GCLCA220E, or GCLCA214E. See action for these messages.</td>
</tr>
</tbody>
</table>
GCLVSE00E  VSAM FAILURE, DDNAME: ddbname | NO DD ALLOCATION FOUND

Explanation: A VSAM failure occurred attempting to open, access, or close a VSAM data set used by a product via product's common VSAM I/O routine (GCL01VSI).

User response: See additional messages. Although many errors could be caused by internal errors, look for any messages with ** USER CORRECTABLE **. These could include problems such as insufficient region size, unable to allocate extents, etc.

Some errors could be the result of incorrectly defining a data set. Compare values returned for catalog lrecl, key length, and key offset to the specifications for the data set as documented in the appropriate product manual. LRECL and KEYLEN to be compared are those supplied with messages GCLVSE21 and GCLVSE22, not GCLVSE19 and GCLVSE20.

If the error does not appear to be user correctable, include all GCLVSEnn messages in documentation supplied to IBM Software Support. Also supply to Support the output from a LISTCAT ENT(...) ALL for the failing data set.

GCLVSE01E  Failing GCL01VSI Function: nnn

Explanation: Last and previous (if any) VSAM function performed.

User response: Message provided for debugging. However, other messages could indicate a user correctable situation. Note that this is the last logical request made by a product program. Because of implicit opens and closes, see message GCLVSE13E to determine the exact VSAM function last requested when determining which set of documented return/reason codes apply.

GCLVSE02E  PROGRAM CSECT: csect name

Explanation: Csect name of failing program.

User response: Message provided for debugging. However, other messages could indicate a user correctable situation.

GCLVSE03E  VWHEN ERROR ID: id

Explanation: Internally assigned id of last VSAM I/O call.

User response: Message provided for debugging. However, other messages could indicate a user correctable situation.

GCLVSE05E  WHEN ASM LISTING LINE #: line number

Explanation: Source listing line number of last VSAM I/O call.

User response: Message provided for debugging. However, other messages could indicate a user correctable situation.

GCLVSE06E  message associated with GCL01VSI

Explanation: This message is associated with a non-VSAM error - i.e. a non-zero return code from GCL01VSI or a VSAM OPEN, ACCESS, or CLOSE.

User response: Message provided for debugging. However, other messages could indicate a user correctable situation. If last function is OPEN, and return code is 16: RLS NOT AVAILABLE - NO SMSVSAM SERVER this may be user correctable if the product parmlib INI member specified RLS for the data set and in fact RLS is not supported on the image.

GCLVSE07E  message associated with VSAM Register 15 value

Explanation: message associated with VSAM Register 15 value.

User response: See message GCLVSE10 and GCLVSE11 for VSAM reason code and description. If GCLVSE12 is produced instead of GCLVSE11, see the manual for a description of the reason code.

GCLVSE08E  SVC99 ERROR CODE: code

Explanation: Error code from SVC99 - dynamic allocation.

User response: Use this error code in conjunction with the SVC99 information code (GCLVSE09E) to determine the cause of failure.

GCLVSE09E  SVC99 INFORMATION CODE: code

Explanation: Information code from SVC99 - dynamic allocation.

User response: Use this error code in conjunction with the SVC99 error code (GCLVSE08E) to determine the cause of failure.

GCLVSE10E  VSAM REASON CODE: code

Explanation: Reason code returned from VSAM open, access, or close.

User response: Use this error code in conjunction with the description provided by message GCLVSE11E to determine the cause of the failure. See additional comments for GCLVSE11E.
GCLVSE11E  VSAM reason code description
Explanation: Abbreviated description for selected VSAM reason codes.
User response: The error handling module producing GCLVSEnn messages includes many VSAM reason code descriptions. Note that these messages are abbreviated in comparison to the messages documented. For this reason, users should also refer to the documentation for the reason code displayed with message GCLVSE10.

Because documented reason codes are distinguished by open/close versus access, see message GCLVSE13E for the last access attempted. GCLVSE13E will indicate OP for open, and CL for close. Consider any other value as ACCESS.

Note especially any reason code descriptions with the string ** USER CORRECTABLE as these may be situations correctable without support.

GCLVSE12E  NO DESCRIPTION FOR REASON CODE
Explanation: Description for reason code not included in error handling table.
User response: Refer to the description of the reason code (GCLVSE10E) for the last function requested (GCLVSE13E) in documentation.

GCLVSE13E  VSAM CCODE: code
Explanation: This is a product value indicating the last VSAM request issued.
User response: This value is necessary if looking up the return and reason codes in documentation. CCODE will be OP for an open and CL for a close. Consider any other value as ACCESS.

GCLVSE14E  GCL01VSI IMPLICIT OPEN
Explanation: Indicator that last program request required that the data set be re-opened.
User response: Primarily for product debugging.

GCLVSE15E  GCL01VSI IMPLICIT CLOSE
Explanation: Indicator that a close was the result of one task losing control to another.
User response: Primarily for product debugging.

GCLVSE16E  GCL01VSI IMPLICIT REPOSITION
Explanation: Indicator that the positioning had to be re-established as a result of losing control to another task.
User response: Primarily for product debugging.

GCLVSE17E  OPEN CLASSIFICATION: value
Explanation: Product internal value indicating intended use of the data set.
User response: Primarily for product debugging.

GCLVSE18E  BUFFERING TECHNIQUE: value
Explanation: Product internal value indicating selected buffering technique.
User response: Primarily for product debugging.

GCLVSE19E  GCL01VSI PARM LRECL: lrecl
Explanation: Last lrecl set in GCL01VSI parm field.
User response: Primarily for product debugging.

GCLVSE20E  GCL01VSI PARM KEYLEN: key length
Explanation: Last key length set in GCL01VSI parm field.
User response: Primarily for product debugging.

GCLVSE21E  GCL01VSI CATALOG LRECL: lrecl
Explanation: Max LRECL fetched from catalog at open time.
User response: This should be used to verify that the cluster as defined matches the requirements for the data set as defined in product documentation.

GCLVSE22E  GCL01VSI CATALOG KEYLEN: key length
Explanation: Key length fetched from catalog at open time.
User response: This should be used to verify that the cluster as defined matches the requirements for the data set as defined in product documentation.

GCLVSE23E  GCL01VSI CATALOG KEY OFFSET: key offset
Explanation: Key offset fetched from catalog at open time.
User response: This should be used to verify that the cluster as defined matches the requirements for the data set as defined in product documentation.

GCLVV136E  Invalid LRECL: value
Explanation: LRECL must be a positive integer
User response: Correct the LRECL value.
GCLVV137E  Dataspaces are limited to 2 GIG or 2097152 K. The corresponding $SI027_{VALUES}$ in INI are specified in K, so the limit is 2097152.

**User response:** Correct the $SI027_{Values}$ section of the INI

GCLVV138E  GCL01VV1 attempted to create a dataspace. The error indicates that the parameters were incorrect.

**User response:** Correct the $SI027_{Values}$ section of the INI

GCLVV139E  GCL01VV1 attempted to expand a dataspace. The error indicates that the parameters were incorrect.

**User response:** Correct the $SI027_{Values}$ section of the INI

GCLVV140E  Value specified is larger than the value allowed (2097152).

**User response:** Correct the INITIAL_SIZE value in the INI

GCLVV141E  Value specified is larger than the value allowed (2097152).

**User response:** Correct the MAXIMUM_SIZE value in the INI

GCLVV142E  Value specified is larger than the value allowed (2097152).

**User response:** Correct the MAXIMUM_DATASPACE_SIZE value in the INI

GCLXCF06E  A problem occurred when attempting an XCF service. Processing terminates.

**User response:** Review the return and reason code for the XCF service that failed in the MVS Programming Sysplex Service Reference Guide. If the return and reason code do not indicate an environmental error,
Notices

This information was developed for products and services offered in the U.S.A. IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to:

IBM Director of Licensing
IBM Corporation
North Castle Drive
Armonk, NY 10504-1785
U.S.A.

For license inquiries regarding double-byte (DBCS) information, contact the IBM Intellectual Property Department in your country or send inquiries, in writing, to:

Intellectual Property Licensing
Legal and Intellectual Property Law
IBM Japan, Ltd.
19-21, Nihonbashi-Hakozakicho, Chuo-ku
Tokyo 103-8510, Japan

The following paragraph does not apply to the United Kingdom or any other country where such provisions are inconsistent with local law:

INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION “AS IS” WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this IBM product and use of those Web sites is at your own risk.

IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.
Licensees of this program who wish to have information about it for the purpose of enabling: (i) the exchange of information between independently created programs and other programs (including this one) and (ii) the mutual use of the information which has been exchanged, should contact:

IBM Corporation
J46A/G4
555 Bailey Avenue
San Jose, CA 95141-1003
U.S.A.

Such information may be available, subject to appropriate terms and conditions, including in some cases, payment of a fee.

The licensed program described in this information and all licensed material available for it are provided by IBM under terms of the IBM Customer Agreement, IBM International Program License Agreement, or any equivalent agreement between us.

Any performance data contained herein was determined in a controlled environment. Therefore, the results obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

All statements regarding IBM’s future direction or intent are subject to change or withdrawal without notice, and represent goals and objectives only.

All IBM prices shown are IBM’s suggested retail prices, are current and are subject to change without notice. Dealer prices may vary.

This information is for planning purposes only. The information herein is subject to change before the products described become available.

This information contains examples of data and reports used in daily business operations. To illustrate them as completely as possible, the examples include the names of individuals, companies, brands, and products. All of these names are fictitious and any similarity to the names and addresses used by an actual business enterprise is entirely coincidental.

COPYRIGHT LICENSE:

This information contains sample application programs in source language, which illustrate programming techniques on various operating platforms. You may copy, modify, and distribute these sample programs in any form without payment to IBM, for the purposes of developing, using, marketing or distributing application programs conforming to the application programming interface for the operating platform for which the sample programs are written. These examples have not
been thoroughly tested under all conditions. IBM, therefore, cannot guarantee or imply reliability, serviceability, or function of these programs. The sample programs are provided "AS IS", without warranty of any kind. IBM shall not be liable for any damages arising out of your use of the sample programs.

Each copy or any portion of these sample programs or any derivative work, must include a copyright notice as follows:

© (your company name) (year). Portions of this code are derived from IBM Corp. Sample Programs. © Copyright IBM Corp. _enter the year or years_. All rights reserved.

If you are viewing this information softcopy, the photographs and color illustrations may not appear.

## Programming interface information

**Usage note:** The following CDPI text is for documentation that contains:

1. Only intended Programming Interfaces.

This publication documents intended Programming Interfaces that allow the customer to write programs to obtain the services of IBM IMS Cloning Tool.

**Usage note:** The following CDPI text is for documentation that contains:

2. NO intended Programming Interfaces, BUT, contains information some or all of which may be misconstrued as Programming Interfaces.

This publication documents information that is NOT intended to be used as Programming Interfaces of IBM IMS Cloning Tool.

**Usage note:** The following CDPI text is for documentation that contains:

3. Programming Interfaces and information that may be misconstrued as Programming Interfaces.

This publication primarily documents intended Programming Interfaces that allow the customer to write programs to obtain the services of IBM IMS Cloning Tool.

This publication also documents information that is NOT intended to be used as Programming Interfaces of IBM IMS Cloning Tool. This information is identified where it occurs by an introductory statement to a topic or section.
**Usage note:**
The following CDPI text is for documentation that contains:

4. Some intended Programming Interfaces but primarily contains non-interface information.

This publication primarily documents information that is NOT intended to be used as Programming Interfaces of IBM IMS Cloning Tool.

This publication also documents intended Programming Interfaces that allow the customer to write programs to obtain the services of IBM IMS Cloning Tool. This information is identified where it occurs by an introductory statement to a topic or section.

**Trademarks**

IBM, the IBM logo, and ibm.com® are trademarks or registered trademarks of International Business Machines Corporation in the United States, other countries, or both. These and other IBM trademarked terms are marked on their first occurrence in this information with the appropriate symbol (® or ™), indicating US registered or common law trademarks owned by IBM at the time this information was published. Such trademarks may also be registered or common law trademarks in other countries. A complete and current list of IBM trademarks is available on the web at [http://www.ibm.com/legal/copytrade.shtml](http://www.ibm.com/legal/copytrade.shtml).

Adobe, Acrobat, PostScript and all Adobe-based trademarks are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States, other countries, or both.

Intel, Intel logo, Intel Inside, Intel Inside logo, Intel Centrino, Intel Centrino logo, Celeron, Intel Xeon, Intel SpeedStep, Itanium, and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

Java™ and all Java-based trademarks are trademarks of Sun Microsystems, Inc. in the United States, other countries, or both.

Linux is a trademark of Linus Torvalds in the United States, other countries, or both.

Microsoft, Windows, Windows NT, and the Windows logo are trademarks of Microsoft Corporation in the United States, other countries, or both.

UNIX is a registered trademark of The Open Group in the United States and other countries.

Other company, product, and service names may be trademarks or service marks of others.
Bibliography

You might need to refer to other sources of information when you are using IMS Cloning Tool.

This section lists the documentation that supports IMS Cloning Tool. Use the appropriate library for the version of IMS that you are using.

**Tip:** To quickly locate a specific book, use the IBM Publications Center, which is located at [www.elink.ibmlink.ibm.com/public/applications/publications/cgibin/pbi.cgi](http://www.elink.ibmlink.ibm.com/public/applications/publications/cgibin/pbi.cgi). After you enter your country information, click **Search for publications**, and enter the publication number (xxxx-xxxx) of the book that you want.

**IMS Version 10 product information**
- IMS Version 10: Application Programming API Reference SC18-9699
- IMS Version 10: Command Reference, Volume 1 SC18-9700
- IMS Version 10: Command Reference, Volume 2 SC18-9701
- IMS Version 10: Command Reference, Volume 3 SC18-9702
- IMS Version 10: Communications and Connections Guide SC18-9703
- IMS Version 10: Database Administration Guide SC18-9704
- IMS Version 10: Database Utilities Reference SC18-9705
- IMS Version 10: Diagnosis Guide GC18-9706
- IMS Version 10: Diagnosis Reference GC18-9707
- IMS Version 10: Exit Routine Reference SC18-9708
- IMS Version 10: IMSplex Administration Guide SC18-9709
- IMS Version 10: Installation Guide GC18-9710
- IMS Version 10: Licensed Programming Specifications GC18-9782
- IMS Version 10: Master Index and Glossary SC18-9711
- IMS Version 10: Messages and Codes Reference, Volume 1: DFS Messages GC18-9712
- IMS Version 10: Messages and Codes Reference, Volume 2: Non-DFS Messages GC18-9713
- IMS Version 10: Messages and Codes Reference, Volume 3: IMS Abend Codes GC18-9714
- IMS Version 10: Messages and Codes Reference, Volume 4: IMS Component Codes GC18-9715
- IMS Version 10: System Administration Guide SC18-9718
- IMS Version 10: System Definition Guide GC18-9998
- IMS Version 10: System Definition Reference GC18-9966
- IMS Version 10: System Programming API Reference SC18-9967
- IMS Version 10: System Utilities Reference SC18-9968

**IMS Version 9 product information**
- Administration Guide: Database Manager, SC18-7806
- Administration Guide: System, SC18-7807
- Administration Guide: Transaction Manager, SC18-7808
- Application Programming: Database Manager, SC18-7809
- Application Programming: Design Guide, SC18-7810
- Application Programming: EXEC DLI Commands for CICS® and IMS, SC18-7811
- Application Programming: Transaction Manager, SC18-7812
- Base Primitive Environment Guide and Reference, SC18-7813
- Command Reference, SC18-7814
- Common Queue Server Guide and Reference, SC18-7815
- Common Service Layer Guide and Reference, SC18-7816
- Customization Guide, SC18-7817
• DBRC Guide and Reference, SC18-7818
• Diagnosis Guide and Reference, LY37-3203
• Failure Analysis Structure Tables (FAST) for Dump Analysis, LY37-3204
• HALDB Online Reorganization Guide and Reference, SC18-7820
• IMS Java Guide and Reference, SC18-7821
• Installation Volume 1: Installation Verification, GC18-7822
• Installation Volume 2: System Definition and Tailoring, GC18-7823
• An Introduction to IMS, SC18-7824
• Licensed Program Specifications, GC18-7825
• Master Index and Glossary, SC18-7826
• Messages and Codes, Volume 1, GC18-7827
• Messages and Codes, Volume 2, GC18-7828
• Open Transaction Manager Access Guide, SC18-7829
• Operations Guide, SC18-7830
• Release Planning Guide, GC17-7831
• Summary of Operator Commands, SC18-7832
• Utilities Reference: Database and Transaction Manager, SC18-7833
• Utilities Reference: System, SC18-7834
Index

A
ACB-NOT-FOUND
IMSUPDATE command 219
ACCESS
IMSDBREFRESH command 276
IMSDBSTART command 272
Access to target volumes 59, 63, 66
accessibility
overview 8
Application access to target volumes 59, 63, 66
Prevent using COPYCHECK 204
Application instream steps
Set up for FlashCopy 57, 60
Set up for SnapShot 57, 60
Application name length restriction 50
authorization
APF 15
function authorization requirements 15
prevent unauthorized use 21, 22
SCCLOAD 15, 21, 24
AUTO-START-SOURCE-DB
IMSDBREFRESH command 276
AUTO-START-TARGET-DB
IMSDBREFRESH command 276
AUTO-STOP-TARGET-DB
IMSDBREFRESH command 276

B
BACKUP
UCATOPTIONS command 250
BACKUP FORCE
UCATOPTIONS command 251
BCSCLNEAN
Delete 'old cycle' entries from target catalog 69, 78
BCSCLNEAN command 186
Delete 'old cycle' entries from target catalog 59, 67
Delete previous application cycle entries from target catalog 186
JOURNAL-DDN 186
JOURNAL-DSN 186
Make target catalogs available to other applications 51
Step JCL 187
BCSCLNEAN command syntax 186
Benefits 4

C
Capture catalog data
COPY step JCL 203
Capture catalog data using the COPY step 59
Catalog names
About source and target 189
Catalog target volume data sets
RENAME step JCL 234
CATWORK-ATTR
COPY command 198
CATWORK-DSN
COPY command 190
CLIP
VOLOPTIONS command 263
CLIST
ISPF 25
cloning
subsystem 174, 179
volumes 171
Cloning
Applications to a new IMS subsystem 53
IMS subsystem 47
IMS subsystems 3, 67
IMS subsystems to allow another IMS subsystem to access the renamed data sets on the target volumes 68, 75
offline IMS subsystems 67
online IMS subsystems 74
Terminology 3
Cloning IMS Databases 114
cloning scenarios 171
Cloning volumes
With EMC TimeFinder/Mirror (overview) 63
Cloning volumes with EMC TimeFinder/Mirror
Overview 63
Commands 185, 267
BCSCLNEAN 186
COPY 188
COPYCHECK 204
FINDUCATS 227
IMSDBCLNEAN 288
IMSDBREFRESH 273
IMSDBSTART 271
IMSDBSTOP 267
IMSSETLOG 207
IMSSSTART 208
IMSTOP 213
IMSUPDATE 217
JRNLUPGRADE 229
ONLINECLIP 232
RENAME 234
UCATOPTIONS 249
VARYOFF 252
VARYON 257
VOLOPTIONS 261
Conditioning 3
configuration
authorization 21, 22
database cloning 29
EBCDIC code set 23
FINDUCATS verification 29
mask characters 23
overview 18
configuration (continued)
run GCLIMRG 19
steps 18
verification 29
configuring IMS subsystems for ISPF interface 120
Considerations
RENAME 235
conventions
highlighting vii
COPY 188
Identify impacted user catalogs for COPY step 61, 64
Initiate volume copies
And catalog data capture 66
Initiate volume copies and catalog data capture 59, 203
Step JCL 203
COPY command
CATWORK-ATTR 198
CATWORK-DSN 190
DATA-MOVER 198, 202
DATA-MOVER(PGM(ADDRDSU)) 202
EXCLUDE-FROM-VOLSER 200
EXCLUDE-TO-VOLSER 201
FROM-STORAGEGROUP 194
FROM-USER-STORAGEGROUP 194
FROM-VOLSER 194
JOURNAL-DDN 191
JOURNAL-DSN 191
Keyword definitions 190
NOUSERCATALOGS 193
SIMULATE 201
Source and target names 189
SOURCESONLINE 201
Step JCL 203
TARGET-VOLS-SHOULD-BE-EMPTY 202
TARGETSONLINE 202
TARGETSUONLINE 202
TO-STORAGEGROUP 195
TO-USER-STORAGEGROUP 195
TO-VOLSER 196
USERCATALOGS 191
USERCATALOGS-BACKUPFIRST 193
USERCATALOGS-NOBACKUP 192
USERSGDEFS-DDN 196
USERSGDEFS-OFFSETS 196
VOLPAIRS 197
VOLPAIRS-DEVN 197
VOLPAIRSDEVN-DDN 197
VOLPAIRSDEVN-NOCLIP-DDN 197
VOLPAIRSDEVN-NOCLIP-DEVN 198
COPY command defaults
ISPF interface 123
COPY command syntax 188
COPY-CMD-DDN
VARYOFF command 254
COPYCHECK command
COPYCHECK command JOURNAL-DDN 205
COPYCHECK command JOURNAL-DSN 205
COPYCHECK command syntax 205
COPYing volumes with FlashCopy or SnapShot
Creating volumes with mirroring tools (continued) 60
Copying volumes with FlashCopy or SnapShot
Overview 57
Setup 57
COPYstep
Creating
Creating volumes
Creating volumes with mirroring tools
Copying volumes with FlashCopy or SnapShot
Overview 57
Setup 57
COPYCHECK command defaults
ISPF interface 124
COPYCHECK command syntax 205
Copying volumes with FlashCopy or SnapShot
Creating
Creating cloning profile ISPF interface 140
creating cloning jobs ISPF interface 140
Creating volumes
Creating volumes with mirroring tools
COPYCHECK command syntax 205
COPYing volumes with FlashCopy or SnapShot
Creating volumes with mirroring tools
Overview 60
D
DASD
Conserve space 47
data masking
edit the IMSDBREFRESH job 169
Restarting or re-running a IMSDBREFRESH job with data masking 169
specifying masking rules 159
submit the IMSDBREFRESH job 169
summary of steps 151
data resources 14
Data set
Target ICF catalog aliases 52
Data set and sphere integrity
GDGs 49
Multivolume data sets 49
VSAM spheres 49
Data set renaming considerations 50
Application name length restriction 50
Naming conventions and rename masks 50
data sets
execution libraries 15
naming conventions 15
SGCLJCL 15
SGCLLOAD 15
data sets (continued)
SGCLPAM 15
Data sets
Integrity violations 49
Migrated 49
Multivolume 49
Not renamed 48
Planning target volume 48
Renamed 48
DATA-MASKING 152
IMSDBCLEAN command 289
DATA-MOVER
COPY command 198, 202
IMSDBREFRESH command 279
DATA-MOVER(PGM(ADRDSUU))
Discrete VOLSER specification 202
Source volumes 202
Storage group specification 203
Target volumes 203
VOLSER mask specification 202
database cloning configuration overview 29
database refresh
building the database refresh jobs 148
disabling the source job 146
ISPF interface 146, 148, 149
submitting the cloning jobs 149
data database refresh step summary ISPF interface 146
data database refresh steps ISPF interface 146
DATAACLAS
RENAME command 237
DATAACLAS-PAIRS
RENAME command 237
DB_COPY_OPTIONS Token Errors GCLINI 32
DBD
IMSDBREFRESH command 275
IMSDBSTART command 272
IMSDBSTOP command 268
DDIN
IMSDBREFRESH command 281
DDOUT
IMSDBREFRESH command 281
DEFAULT_IF_NO_MATCH
RENAME command 237, 246
Delete previous application cycle entries using BCSCLEAN 186
Discrete VOLSER specification
DATA-MOVER(PGM(ADRDSUU)) 202
Discrete volumes vs SMS storage group specification 49
DRIVEACS
RENAME command 237
DSNAME-ERROR-DBRC- SYMBOLS
IMSUPDATE command 219
DSS
Snapshot volume copies 57, 60
Errors
In RENAME step 234
ESS DASD
ESS subsystem 50
Source and target volume pairing 50
Track format 50
ESS DASD source and target volume pairing 50
Establish continual mirrors 61, 64
EXCLUDE-FROM-VOLSER
COPY command 200
FINDUCATS command 228
EXCLUDE-RCNAME
RENAME command 238
EXCLUDE-RCNAME-MASKS
RENAME command 238
EXCLUDE-RCNAME-MASKS-DDN
RENAME command 238
EXCLUDE-TO-VOLSER
COPY command 201
EXCLUDEFROMVOLSER
FINDUCATS command 228
Extended ACS masking characters 6
F
Fast replication tools 5
Volume-level 5
Features 1, 4
Filter masks
Newname syntax 236
Oldname syntax 235
Rename considerations 235
Filtering masks 6
FINDUCATS 227
Identify impacted user catalogs for COPY step 61, 64
FINDUCATS command
EXCLUDE-FROM-VOLSER 228
EXCLUDERESVOLSER 228
FROM-STORAGEGROUP 228
FROM-VOLSER 228
FROMSTORAGEGROUP 228
FROMVOLSER 228
Keyword definitions 228
Step JCL 229
FINDUCATS command syntax 228
FlashCopy 5
Set up job steam 57
Set up job stream 60
Setup to copy volumes with 57
Source and target volume pairing 50
FROM-STORAGEGROUP
COPY command 194
FINDUCATS command 228
FROM-USER-STORAGEGROUP
COPY command 194
FROM-VOLSER
COPY command 194
FINDUCATS command 228
FROMSTORAGEGROUP
FINDUCATS command 228
FROMVOLSER
FINDUCATS command 228
FUZZY-COPY
IMSDBREFRESH command 281
E
EBCDIC 6
Error message 8, 291
Keyword definitions (continued)
ONLINECLIP command 233
RENAME
JOURNAL-DSN 236
RENAME command 236
UCATOPTIONS
JOURNAL-DSN 250
UCATOPTIONS command 250
VARYOFF
JOURNAL-DSN 253
VARYOFF command 253
VARYON
JOURNAL-DSN 257
VARYON command 257
VOLOPTIONS
JOURNAL-DSN 262
VOLOPTIONS command 262

M
Main Menu 119
Maintenance
ways to reduce storage management 49
MAX-TASKS
RENAME command 241
MAX-VOLS-PAIRS
VARYOFF command 254
MAX-VOLS-PER-CMD command
VARY-DDN 258
MDA-DATASETS
IMSUPDATE command 221
MDA-DDN 221
MDA-NOT-UPDATED
IMSUPDATE command 222
Message
naming conventions 8, 291
message retrieval tool
LookAt viii
messages
methods for accessing viii
MGTCLASS
RENAME command 241
MGTCLASS-PAIRS
RENAME command 241
Migrated application data sets 49
MISSINGUCAT
RENAME command 242
MODBLKSDSN
IMSUPDATE command 222
MODBLKSA-DSN
IMSUPDATE command 222
MODDBKB-DSN
IMSUPDATE command 222
MODE
IMSSTOP command 214
MODSTAT-DSN
IMSUPDATE command 223
MODSTAT2-DSN
IMSUPDATE command 223
Multivolume data sets 49

N
Naming conventions and rename masks 50
New IMS subsystem
Applications to be cloned 53
IMS.PROCLIB and IMS.JOBS
members 54
Operating system preparation 56
Reviewing source components 54
NEWCATWORKS
UCATOPTIONS command 251
NEWCATWORKS-DDN
UCATOPTIONS command 251
Newname masks
Syntax 236
NEWTARGETS
UCATOPTIONS command 251
VOLOPTIONS command 264
NEWTARGETS-DDN
UCATOPTIONS command 251
VOLOPTIONS command 264
NEWTARGETSDEVN
VOLOPTIONS command 264
NOFEOV
IMSDBREFRESH command 283
IMSDBSTOP command 269
notices 437
NOTRENAME 48
RENAME command 242
NOUSERCATALOGS
COPY command 193
Onsite mirroring tools 5, 6
Operating system preparation
For new IMS subsystem 56
ORPHANCATENTRY
RENAME command 243
output
EBCDIC code set 23
overview
configuration steps 18
database cloning configuration 29
Overview
Cloning volumes with EMC
TimeFinder/Mirror 63
Copying volumes with FlashCopy or SnapShot
Setup 57
Creating volumes with mirroring tools 60
For creating a new IMS subsystem 53
Point-in-time copy tools 5
POSTCOPY
IMSDBFRESH command 283
PRECOPY
IMSDBFRESH command 283
Prevent access to target volumes
Using COPYCHECK 204
Process
Placing steps in application job stream 59
Begin application access to target volumes 63, 66
COPY step 59, 62, 66
Create a second subsystem to use for accessing the renamed data sets 59
Establish continual mirrors 61, 64
FINDUCATS step 58, 61, 64
Quiesce application activity 58, 62, 65
RENAME step 59, 234
Resume access to source volumes 59
Split or break mirrors 62, 65
programming interface information 439
Quiesce application activity 58, 62, 65
SCOPE
  VARYOFF command 254
SCOPE command
  VARY-DDN 258
screen readers and magnifiers 8
section names
  GCLINI 31
security
  prevent unauthorized use 21, 22
Selection of source and target volumes
  Discrete volumes vs SMS storage
  group specification 49
  Migrated application data sets 49
  Requirements 50
Source and target volume pairing
  service information vii
setting database refresh defaults
ISPF interface 132
Setup
  Copying volumes with FlashCopy or SnapShot 57
  For creating a new IMS subsystem 53
  To copy volumes with FlashCopy or SnapShot 57
SGCLJCL 15
SGCLLOAD 15
SGCLPARM 15
SIMULATE
  COPY command 201
  IMSDBCLEAN command 289
  IMSDBREFRESH command 285
  IMSDBSTART command 272
  IMSDBSTOP command 269
  IMSSETLOG command 207
  IMSSTART command 210
  IMSSTOP command 214
  IMSUPDATE command 225
  RENAME command 245
  VARYOFF command 254
  VOLOPTIONS command 263
SIMULATE command
  VARY-DDN 259
SMF records 14
SnapShot 5
  Set up job stream 57
  Setup to copy volumes with 57
Source and target volume pairing
  Source volumes 3
  Offline volumes 202
  SOURCESONLINE
  COPY command 201
  SPEED
  RENAME command 245
  Split or break mirrors 62, 65
STARTCMD
  IMSSTART command 209
STARTCQS
  IMSSTART command 210
STARTIRLM
  IMSSTART command 211
STOPCQS
  IMSSTOP command 215
STOPIRLM
  IMSSTOP command 214
Storage group specification 49
  DATA-MOVER(PCM(ADDRSSU)) 203
storage requirements 14
STORCLAS
  RENAME command 246
STORCLAS-PAIRS
  RENAME command 246
  subsystem cloning 171, 174, 179
  building the cloning jobs 145
  ISPF interface 141
  specifying source and target subsystems 142
  specify source masks 144
  specify source and target ICF catalogs 144
  submitting the cloning jobs 146
  subsystem cloning step summary
  ISPF interface 141
  subsystem cloning steps
  ISPF interface 141
support information vii
supported
  fast copy software 13
  IMS versions 13
  z/OS versions 13
Supported
  Fast replication tools 5
  Onsite mirroring tools 5, 6
  Point-in-time copy tools 5
  Volume copy tools 5
Supported volume copy products
  FlashCopy 50
syntax (continued)
  ONLINECLIP command 232
  RENAME command 234
  UCATOPTIONS command 250
  VARYOFF command 253
  VARYON command 257
  VOLOPTIONS command 262
Syntax
  Newname masks 236
  Oldname masks 235
syntax rules
  GCLINI 30

T
TARGET
  VARYOFF command 253
  VARYON command 258
Target catalog
  Delete 'old cycle' entries
    Using BCSLCEAN 67, 69, 78
    Using BCSLCEAN command 63
  Delete 'old cycle' entries using BCSLCEAN 67, 69, 78
  Delete previous application cycle entries using BCSLCEAN 186
Target ICF catalog
  Aliases 52
  Considerations 51
  Source and target location 52
Target volume
  Data sets 48
  Online status 48
Target volume names 189
Target volumes 3
  Access 59, 63, 66
  Catalog data sets 234
  Offline volumes 203
  Prevent access using COPYCHECK 204
  Rename data sets 234
TARGET-VOLS-SHOULD-BE-EMPTY
  COPY command 202
TARGETSONLINE
  COPY command 202
TARGETSUONLINE
  COPY command 202
TEMPDSN
  RENAME command 246
Terminology 3
TGT-DBD
  IMSDBREFRESH command 275
TO-STORAGEGROUP
  COPY command 195
TO-USER-STORAGEGROUP
  COPY command 195
TO-VOLSER
  COPY command 196
token names
  GCLINI 31
token values
  GCLINI 31
trademarks 440
Index 449
**U**

UCATOPTIONS 249
UCATOPTIONS command 250
BACKUP 250
BACKUP FORCE 251
JOURNAL-DDN 250
JOURNAL-DSN 250
Keyword definitions 250
LIST 251
NEWCATWORKS 251
NEWCATWORKS-DDN 251
NEWTARGETS 251
NEWTARGETS-DDN 251
Step JCL 252
UPDATE 251
UCATOPTIONS command syntax 250
UPDATE

**V**

values 30
GCLINI 30
VARY-DDN 258
MAX-VOLS-PER-CMD command 258
SCOPE command 258
SIMULATE command 259
VARYOFF command 253
VARYON command 258
VOL-ALREADY-OFFLINE command 259
VOLBKUP-DDN 259
VOL-ALREADY-ONLINE command 259
VOLPAIRS 261
VOLPAIRS command 261
CLIP 263
JOURNAL-DDN 262
JOURNAL-DSN 262
Keyword definitions 262
LIST 263
NEWTARGETS 264
NEWTARGETS-DDN 264
NEWTARGETSDEVN 264
OFFLINECLIP 263
RESUME 263
SIMULATE 263
Step JCL 264
VOLPAIRS command syntax 262
VOLPAIRS-DDN
COPY command 197
VOLPAIRSDEVN
COPY command 197
VOLPAIRSDEVN-DDN
COPY command 197
VOLPAIRSDEVN-NOCLIP
COPY command 197
VOLPAIRSDEVN-NOCLIP-DDN
COPY command 198
VOLSER mask specification
DATA-MOVER(PGM(ADDRSSU)) 202
volume cloning 171
Volume copies
COPY step JCL 203
Identify impacted user catalogs 61, 64
WAIT keyword in COPYCHECK step 204, 205
WITHDRAW
COPYCHECK 206
WRONG-VOLSER
ONLINECLIP command 233
WRONG-VOLSER command 259
VARY-DDN 259

**W**

WAIT
COPYCHECK 205
IMSBREFRESH command 286
IMSDSTOP command 269
IMSTART command 212
IMSTOP command 216
WAIT keyword in COPYCHECK step 204, 205
WAITONLY
IMSTART command 212
IMSTOP command 216
WITHDRAW
COPYCHECK 206
WRONG-VOLSER
ONLINECLIP command 233
WRONG-VOLSER command 259
VARY-DDN 259